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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, JUNE 2, 1874.

No. 22.

### NEWS OF THE WEEK.

The Dominion Parliament was prorogued on the 26th May by His Excellency the Governor General. Among the bills assented to three only are of sufficient importance to merit a passing notice, we refer to the Election Law; The Canadian Pacific Railway Bill, and the amendment to the Militia Law in the establishment of a college for the thorough education of officers for the Militia.

The Government have determined to withdraw the twenty cent pieces from circulation, because of the great annoyance they are to trade.

His Excellency the Governor General and suite visited the Chaudier Falls, and after examining the slides and other places of interest in the vicinity, came to the conclusion to run the slides, which the party did in the most successful manner.

The Senate has amended the Election Bill, so as to permit universal suffrage in Prince Edward Island.

A watch and chain valued \$320 were presented to the Hon. E. B. Wood by the people of Brantford previous to his leaving for the North West.

The Ottawa Times is to receive the Departmental as well as the Parliamentary printing contract.

The Grand Trunk have commenced a return ticket system similar to the Great Western.

A large number of emigrants are now en route to Manitoba by Lake Superior and the Dawson route.

The survey of the Hamilton and North Western railroad is completed from Clarksville to Collingwood. The report is that a satisfactory route has been located.

His Excellency the Governor General has reserved "Bill to amend the Extradition Act of 1873" for the signification of Her Majesty's pleasure thereon.

The steamer *Chicora* left Collingwood 26th for Lake Superior. Among the passengers were 150 for Manitoba and the Northern Pacific lands, comprising mechanics, farmers, and laborers.

The steamship *Faraday* with the new Atlantic cable, to be landed at Torbay, 150 miles from Halifax, is expected on the coast in a few days. A line to connect Torbay and Halifax is projected.

President Grant has nominated Wm. Cooper Howell, of Ohio, Consul to Quebec.

Major Pemberton, of the Madras Staff Corps, accompanied by his wife, the daughter

of the late Hon. John Sandfield Macdonald, has arrived at Ceverley Lodge, Cornwall, on a visit to his brother in law.

Arrivals from sea to continue now daily, about 200 vessels having arrived since the opening of navigation. Freights continue dull and unaltered with a possibility of a further decline.

The flagship *Bellerophon* arrived at Halifax on 28th May, with Vice Admiral and Mrs. Wellesley and daughter on board.

Mr. Boyce Allan, one of the partners of the firm owing the Allan line of steamers, is dead.

The London *Observer* announces that at the celebration of the Queen's birthday the title of Duke of Connaught will be conferred on Prince Arthur. This is the first royal title ever associated with Ireland.

On leaving the Grand Trunk, the English Directors presented Mr. Brydges with the handsome sum of £4,000 sterling.

At a meeting of the New York Produce Exchange held on the 27th May, the Branch Books showed by official records that a balance of over ninety-one million dollars in favor of the States while trading with Canada and other British Colonies during the 12 years of the existence of the Treaty. One firm in the city of New York used to sell two million dollars, but has done comparatively nothing since 1866.

The Oswego Board of Trade also met 27th May, and in conjunction with the New York meeting unanimously passed resolutions requesting the Senators and Representatives in Congress to aid as far as possible in the establishment of renewal of reciprocity relations between, United States and Canada, for the purpose of gaining advantages likely to be derived by the citizens, from the proposed Treaty, more near equal to those of our Canadian neighbors, than they are believed to have been by former Treaty. The Board recommends the use of Canadian canal connecting upper lakes with tide water and particularly that of Welland which should be made absolutely free to vessels and cargoes of United States and to our products when carried in Canadian bottoms.

Mayor Wertz of New Orleans telegraphed to the Mayors of New York and Brooklyn asking additional aid for the Louisiana sufferers. He says that in thirty five days the contribution in cash and provisions has been less than \$180,000 and one million is needed.

Chief State Engineer Thompson writes to Gov. Kellogg that three million cubic yards of the Levee is required to be built to save the State from overflow next year, and that

Louisiana cannot pay for the construction of more than one third. He suggests that an appeal be made for National aid.

Mr. Stanly is very anxious to make another expedition into Central Africa. He is confident he will succeed where Livingstone has failed, and will discover the source of the Nile. Mr. James Gordon-Bennett is now on his way to England and so soon as he arrives Mr. Stanly will offer to go on his journey in the interests of the *New York Herald*.

A writer in the London *Telegraph* claims to have travelled from Baltimore to Richmond, through the lines of the Federal and Confederate armies in 1862, in company with Colonel Wolsley, now Sir Garnet Wolsley.

It now appears that the Russian Grand Duke Constantine's son, Nicholas, gave diamonds belonging to his mother to Miss Fannie Orphenix, a beautiful American. The circumstances of the theft together with the fact that he had deposited large sums of money with his bankers to make provision, as he says, against the necessities of old age, lead to the belief that he is insane!

Despatches from Calcutta state that the distress from the famine in India is increasing. Nearly three millions of people are dependent upon the Government for food.

It is reported that the Carlists have received twenty Krupp steel cannon, and are reorganizing their forces.

A Paris despatch to the *London Times* says the story of a German candidature for the Spanish Throne is ridiculous.

The Cambridge University Union have adopted a motion, by 101 votes to 42, in favor of introducing the system of cremation into England.

"There is a rumour that either Mr. Coffin or Mr. Ross will be appointed to the vacant Collectorship at Halifax, but we can hardly fancy that either of those gentlemen would care to take such a position. Mr. Pierce Hamilton, a writer who was a vigorous advocate of Confederation, and who did good service to the cause of Union, is we understand an applicant for the position, and is strongly recommended by the people at Halifax."—*Free Press*.

We have reason to know that the appointment of Mr. Hamilton to the Collectorship of Customs at Halifax, would give general satisfaction to the Mercantile Community, and would also be hailed with delight throughout the entire Province of Nova Scotia.

ANNUAL REPORT ON THE STATE OF THE MILITIA FOR 1873.

(Continued from Page. 243)

APPENDIX No. 1

MILITARY DISTRICT, NO. 2

Deputy Adjutant General's Office,  
London, 27th November, 1873.

HEAD QUARTERS.  
OLD FORT, TORONTO.  
20th Nov., 1873.

Sir, In accordance with your Circular Memorandum, dated Ottawa, 24th October last, I have the honor to report that the quota of active militia required to be furnished from the district under my command is 6,089.

In consequence of all the corps in Military District No. 2, not having as yet performed their annual drill for 1873-74, I am unable to give the full muster of force, or to show the number which may be required to complete the quota of the District.

The strength of the corps of active militia, which have performed their annual drill for this year (up to this date), and which were duly mustered, agreeable to orders, by Major Alger, District Paymaster, at the time, is as undermentioned:

CAVALRY.

Governor-General's Body Guards Officers, N. C Officers and men.	3	35
2nd Regiment of Cavalry—6 Troops Officers, N. C. Officers and men.	17	244
	20	279

No. 7 Troop Welland (not equipped)..... Did not drill.....

ARTILLERY.

Field Batteries,

	Officers	N.C. Officers and men.
Toronto.....	6	54
Hamilton.....	4	71
	10	125

Garrison Batteries.

Toronto.....	2	51
Collingwood.....	3	38
	5	89

INFANTRY.

- 12th Battalion, York Rangers, 8 company's 28 officers, non commissioned officers and men 318.
- 20th Battalion, Halton 7 company's 17 officers, non-commissioned officers and men 288.
- 31st Battalion, Grey 7 company's 27 officers, non-commissioned officers and men 321.
- 35th Battalion, Simcoe Foresters 9 company's 25 officers, non-commissioned officers and men 365.
- 35th. Battalion No 10 Company not equipped did not perform annual drill,
- 37th Battalion, Halgimand 7 companys 20 officers, non-commissioned officers and men 160.
- 38th Battalion, Brant 6 companys 20 officers,

non commissioned officers and men 248.  
44th Battalion, Welland 8 companies  
4 Companies, Nos. 2, 4, 7, and-8 performed annual drill.

77th Battalion, Wentworth 6 companys 22 officers, non-commissioned officers and men 280.

Independent Company  
Sault Ste Mario (rifle) 1 officer, non-commissioned officers and men 22.

171 2.163

The force, as above enumerated, comprises rather more than one half the being: of the District (by corps), there

- 1 Field Battery,
- 1 Garrison Battery,
- 7 Battalions of Infantry,

yet to perform their annual drill.

By comparing the relative strength of the corps which have performed their drill for 1873-74 with that, when mustered for drill, for 1872-73 as now shown, it appears that the force mustered on parade this year:

	Officers	N.C Officers and men.
Cavalry.....	20	279
Artillery.....	15	214
Infantry.....	161	2,163
Total.....	196	2,656

The same corps last year mustered:

Cavalry.....	31	315
Artillery.....	14	248
Infantry.....	174	2,156
Total.....	219	2,719

There is not that deficiency in numbers this year, so far, which I anticipated; as it is admitted on all hands that the general desire of the force is to perform their annual drill under canvas, either in brigade or divisional camps, similar to those which have taken place during the last two years, thereby enabling both officers and men to acquire that knowledge of camp duties and brigade drill, so essential to their efficiency. Added to which, the men in general, and especially those from cities, derive great benefit in their general health by being placed in a healthy dry country like Niagara, under canvas for 16 days. Of course, there are a few who may suffer, being constitutionally weak, or from previous ill health.

The annual drill was performed in accordance with general orders of the 30th May and 23rd June last (the target practice excepted, hereafter referred to), and in the following manner:—

The Governor General's Body Guard performed its annual drill at head-quarters 16 days; mustered very fairly, and drilled very well, both mounted and dismounted well mounted, very soldier-like.

This corps deserves more than ordinary credit, having imported from England the heavy dragoon helmet, at a cost of 10 to the officers \$40 each, to the troopers \$9.54 each. In consideration of the extra services constantly required and performed by this corps at the opening and closing of the Legislature, at Toronto, and others duties, I beg to recommend that the officers commanding this troop may be permitted to recruit the corps up to 75 non-commissioned officers and men, with 15 sets of additional saddle.

2nd Regiment of Cavalry.

Nos. 2 and 3 troops (Oak Ridges and Markham) formed into a squadron, performed annual drill with the 12th Battalion at Aurora, under canvas; horses picketed, men soldier-like, well behaved, fairly mounted and drilled very fair.

The remaining troops, Nos. 1 (St. Catharines), 4 (Grimsby), 5 (Burford), and 6 (Queenstown), performed their drill at their respective troop head quarters, and were inspected by Lt.-Col. Villiers, Brigade Major, who reported favourably of their appearance on parade—arms and accoutrements in good order, and very fairly mounted; particular reference being made to No. 5 (or (Burford) troop (Welland), not equipped, and not performed annual drill.

ARTILLERY.

Toronto Field Battery performed its annual drill—officers and men in barracks, horses in the stables, new fort, where there is ample accommodation. This battery is in good order. Lt.-Col. Denison, Brigade Major, being present at its inspection by Lt.-Col. French, Inspector of Artillery, reports very favourably. Lt.-General O'Grady Daly, C.B., commanding Her Majesty's forces in Canada, being present on this occasion, who expressed himself much pleased at the manner in which the field movements were executed, and the steady and soldier-like appearance of officers and men.

Hamilton Field Battery performed its annual drill at Hamilton. Mustered as usual, very strong. General appearance of this battery very creditable; well horsed; field movements well and smartly performed.

Toronto and Collingwood Garrison Batteries.

These corps performed their annual drill; the former in barracks, at the New Fort, Toronto; the latter under canvas at Collingwood. Lieut.-Col. Denison, Brigade Major, who was present at the inspection of the corps by Lieut.-Col. French, reports favourably of these corps.

Infantry.

The 12th, 31st, 35th, 37th, 38th, and 77th Battalions performed their annual drill, under the general order of the 23rd June, in eight consecutive days under canvas, (less one day moving into and out of camp), at their respective Battalions Head Quarters; excepting the 12th Battalion, which assembled at Aurora, instead of Newmarket, — the former place considered more available and preferable.

It is very creditable to the commanding officers of corps to be able to report that their camps were well situated, dry and healthy, without exception; well supplied with water, tents well pitched, rations good; no complaints. General appearance of the men soldier like; and considering the short period, drill, field movements and skirmishing very fair; arms, accoutrements, and clothing in fair order.

I am sorry to say the 37th Battalion mustered weak.

I regret to observe that the 38th Battalion did not appear to be in as healthy a state of organization as I could wish.

Although, I believe officers commanding Battalions used every exertion to carry out the general order of the 23rd June, with reference to target practice, when it is considered that one day is taken up in moving into and out of camp, &c., seven days is too short a period for a battalion to carry out its regimental duties, drill preparations of ranges for target practice (40 rounds, per man,

at four different ranges), efficiently. It is due to the 35th Battalions to report that the companies of these corps fired the 40 rounds per man, at the four ranges required; No. 4 Company, 37th Battalion, very weak, was attached to another Company for that purpose.

The 20th Battalion and four companies of the 44th Battalion performed their annual drill under the general order of the 30th May, at their respective company Head Quarters.

The muster of these corps was good rather above the average muster. The physical appearance of the men was very good and soldier like. The condition of their arms, accoutrements, and clothing was very fair. Their company drill was as good as might be expected. This Battalion (the 20th) fired 40 rounds, per man, at the four different ranges. It is due to No. 4 Company (Norval), Captain Currie, of the 20th Battalion, to report that on the morning of my inspection there stood 2 officers and 55 non-commissioned officers and men in the ranks—their full strength, less the ensign not appointed.

It is due also to No. 7 Company (Milton), Captain Rixon, 20th Battalion, to state, although the Company was not strong in numbers, yet its appearance on parade was very creditable. The arms, accoutrements, and clothing were very clean and in good order. This public spirited officer does not meet with that support which he deserves—the feeling in the vicinity of Milton being decidedly opposed to volunteering. This officer has purchased and paid for a good sized building and ground, previously used as an Orange Lodge, at a cost of over 200 dollars, which affords ample accommodation for his company. I beg to recommend that this officer may be reimbursed the above amount.

The 4 companies of the 44th Battalion were inspected by Lt.-Col. Villiers, Brigade Major, who reports that the companies mustered well. The men were smart and soldier-like; arms, accoutrements and clothing in good order.

The Independent Rifle Company at the Sault Ste Marie—Captain Wilson. This company, although it did not muster very strong when inspected, is composed of a very fine body of young men, whose occupation at certain seasons of the year obliges them to leave. The arms, accoutrements and clothing in very good order, and reflects much credit upon the officers commanding, who takes great interest in all that appertains to the welfare and efficiency of his company.

SCHOOL OF MILITARY INSTRUCTION,	
Number of cadets admitted during the past year.....	72
Number of cadets who obtained first class certificates.....	4
Do. who obtained 2nd class certificates.....	54
Withdrawn with permission to re-enter Military School.....	14
<b>Total.....</b>	<b>72</b>

Of the above number twenty-seven were officers of the active militia, 14 were non-commissioned officers, the remainder were young gentlemen, several of whom have since received commissions in the force.

Average number of days required to obtain 2nd class certificates.....	57
Average number of days required to obtain 1st class certificates.....	72

Adjutant to the School—Lt.-Col. Dension, Brigade Major.  
Drill Instructor—Sergeant Major Cantlin.  
The above officer and non-commissioned officer have been unremitting in their attention to, and discharge of, their respective duties.

I beg leave to forward the accompanying inspection report of corps having performed their annual drill of the year 1873-74; also return (A) of corps which have not performed their annual drill up to this date.

It gives me much pleasure in being able again to report for your favourable consideration the able support received by me at all times by the staff officers of the District:

Lt. Colonel Dension, Brigade Major; Lt.-Col. Villiers, Brigade Major; and Major Alger, District Paymaster.

I much regret to state that the Active Militia Force of Toronto, still labours under the great disadvantage of having no drill shed. A want seriously felt, especially during winter months, there being no convenient place where sufficient accommodation can be obtained.

I have the honor to be, Sir,  
Your most obedient Servant,  
W. S. DURIE, Lt.-Colonel,  
Deputy Adjutant General,  
Military District, No. 2

The Acting Adjutant General, of Militia  
HEAD QUARTERS,  
Ottawa.  
Old Fort, Toronto,  
20th November, 1873.

[MEMO.]  
(A)  
The undermentioned Corps in Military District No. 2, have performed their annual drill for 1873-74, viz. :—

- ARTILLERY.  
1.—Welland Field Battery.  
2.—St. Catharines Garrison.  
INFANTRY.  
3.—2nd Battalion Queen's own Rifles.  
Or Royals.

- 4.—10th „  
5.—13th „  
6.—19th „  
7.—34th „  
8.—36th „  
9.—39th „  
10.—44th „

4 Companies.  
Wm. S. DURIE, Lt.-Col.  
Military District No. 2.  
The Acting Adjt. General of Militia.  
OTTAWA,

MILITARY DISTRICT, No. 3.  
KINGSTON, Dec. 12th 1873.

Sir.—In conformity with the instructions contained in your "Circular Memorandum," dated Ottawa, October 24th, 1873, I have the honor to enclose the tabulated returns of all the corps in Military District, No. 3, of

Active Militia which have been inspected up to the present date; as well as a list of those corps which have not yet been inspected, not having performed the annual drill, but which intend to do so during the winter, or before the financial year expires in June, 1874.

The total strength of the forces mustered and paid upon inspection, up to the present time is. —

Officers.....	216
N. C. Officers and Men.....	2601
Horses.....	469

The Cobourg Garrison Battery of Artillery did not assemble until 31st October, 1873, for eight days, and were inspected on the 7th November.

No corps have notified me since that date of their intention to perform the annual drill immediately, but I have reasons to think that they will do so before the 30th June 1874, as "may be most convenient" under the General Orders (12.) 30th May, 1873.

The following corps have so far performed the drill, and have been mustered and paid :—

Cavalry.  
Northumberland and Durham Squadron.  
Frontenac Squadron.  
Napanee Troop.  
Peterborough Troop.  
Picton Troop.  
Total, 7 Troops.

Artillery.  
Kingston Field Battery.  
Napanee Garrison Battery,  
Cobourg Garrison Battery.  
Total, 3 Batteries.

Infantry. Battalion  
Head Quarters.

14th P. W. O. Rifles.....	Kingston
15th Argyll Light Infantry....	Belleville
40th Infantry.....	Cobourg
45th do (except 3 companies).....	Bowmanville
46th do .....	Port Hope
47th do .....	Kingston
48th do .....	Napanee
49th do (except the Madoc Company).....	Belleville
57th do .....	Peterborough
<b>Total, 9 Battalions.</b>	

The following corps have not yet put in their drill :—

Cavalry.  
Colborne Troop } 2 Troops.  
Lakefield Troop }

Artillery.  
Durham Field Battery.... }  
Port Hope Garrison.... } 3 Batteries.  
Battery..... }  
Trenton Garrison Battery. }

Infantry  
16th Prince Edward..... 1 Battalion.  
Infantry..... 1 Battalion.  
Madoc Company, 49th Battalion..... 1 Company.  
Three Companies 45th Battalion..... 3 Companies.

Of those Corps given above which have been inspected, the following is a list of the places where they performed the annual drill :—

*Cavalry.*  
 Peterboro' Camp....Northumberland and Durham Squadron.  
 Kingston Camp.....Frontenac Troop.  
 Napanee Camp.....Napanee Troop.  
 Picton Town.....Picton Troop.

*Artillery.*  
 Kingston Artillery Park Kingston Field Battery.  
 Cobourg Drill Shed .....Cobourg Garrison Battery.  
 Napanee Camp.....Napanee Garrison Battery.

*Infantry.*  
 Kingston Camp.....14th P. W. O. Rifles.  
 Bellevue Camp.....15th Argyle Lt. Infantry.  
 Peterboro' Camp.....40th Battalion Infantry.  
 do .....45th do  
 do .....46th do  
 Kingston Camp.....47th do  
 Napanee Camp.....48th do  
 Belleville Camp.....49th do  
 Peterboro' Camp.....57th do

By reason of the change in the orders for the carrying out the annual drill this year, and making it optional with corps to perform eight days' drill under canvas, or sixteen days' drill at their respective headquarters "as might be most convenient," the instructions contained in the G. O., 30th May, 1873, that forty rounds a man should be expended at target practice during the 16 days, could not be carried out in the eight days, which latter nearly all the corps selected as the most convenient, having hereby a shorter time to serve, and double pay in proportion. The G. O., 30th May, gave six days out of the sixteen to rifle instruction and target practice, and ten other days to company and battalion drill, thus accounting for every one of the sixteen days. The corps which assembled for eight days only, in camps, gave up one day for coming and one day for going home, and had only six days left for every other exercise. And as the G. O., 23rd June did not curtail the number of rounds to be fired, but rather insisted upon the instructions of G. O., 30th May, as to the drill and exercises being carried out in conformity with that order, the commanding officers were manifestly unable to comply with both orders, and were obliged to choose between drill exercises and rifle exercises, some chose one and some the other, while a few combined the two, and fired ten or any number of rounds as they could spare time. I have therefore not included in my tabular returns any particulars of target practice, as it is impossible to find a correct figure of merit from such varied and uncertain data. I propose at the conclusion of the year (30th June, 1874) to call upon all commanding officers for an account of the ammunition they have received for this year's consumption, with the details of the target practice,

This may not prove a satisfactory or reliable method of finding the best shot and the highest figure of merit, as without proper supervision by disinterested parties appointed for the purpose, the returns may not be altogether correct, but as the firing of 40 rounds a man has been made the standard on which to judge these points throughout the country, I see no other way at present of arriving at a correct decision.

I regret to report the death, on the 20th September last, of Lieut. Colonel Herchmer

Hamilton, lately in command of the 47th Frontenac Battalion. His death occurred during the time the 47th Battalion was in camp, at Kingston. His loss will be felt by the County of Frontenac, and by the Militia Service of the Dominion.

The large camp formed in the vicinity of Peterborough, on the banks of the river Otonabee, composed of certain Corps of the 6th Brigade Division, under the command of Lieut. Col. D'Arcy Boulton, of the Northumberland and Durham Cavalry, as senior officer, was very successful.

Camp equipage was issued to every Corps applying for it to go into camp, and the Corps composing the Peterboro' Camp caused all the equipage intended for them to be deliberated at Cobourg or Port Hope, whence it was conveyed at their own expense, by private arrangement with transport companies, to the camping ground. All this equipage has not yet been returned to store and it has been reported that some few tents and a considerable number of blankets are deficient. Although I directed that the Camp equipment for each Corps should be distinctly addressed to the several Commanding Officers, and the Bills of Lading should be made out for their signatures on delivery I fear the directions were not observed in such a manner as to fasten the losses upon particular individuals.

(To be continued.)

ELECTRIC TORPEDOES.

Mr. N. J. Holmes recently read before a English society, papers "On Electric Torpedoes." He first spoke of them as a means of defence in naval and military warfare in general, and next as applied to service on land in particular. The author held that no civilized Government could ignore the importance of torpedoes in modern warfare. They ought to render attacks with rifled guns and armor-plated vessels futile. There was a case in point dating back as far as December, 1865. In the report of the Secretary of the United States Navy the following passage occurs:—"When the United States fleet attacked and passed the forts erected for the sea defence of Mobile and Wilmington, mounting together nearly 600 guns, many rifled, and of the heaviest calibre the only vessels lost by the United States Government in both these attacks—and the shore batteries of the Confederates splendidly served—were destroyed by electric torpedoes, which always formidable in harbors and internal waters, have proved more destructive to our naval vessels than all other means combined." This was at a time when the torpedo system was only in its infancy, and manipulated by the Confederate engineers under very possible disadvantage. Simple in its construction and action, called upon to expend its power upon the enemy without reciprocal challenge, the most powerful monitor or armor-plated ship ever constructed easily falls a prey to its deadly embrace. At the cost of a few thousand pounds the strongest ship with its heavy guns and gallant crew, fitted out at a cost of hundreds of thousands of pounds, becomes comparatively inoperative for the attack. Half a dozen men in control of the torpedo mines can effectually keep at bay both an army and a fleet, and at will, should either encroach within range of their "area of destruction," annihilate in a few seconds the advancing foe, who if not totally destroyed, will be at least fatally crippled.

Another illustration from the American Civil War of the effective power of a well

planned torpedo mine will serve to demonstrate the value of this agent. The important defence of the water approach to Richmond was instructed to a single electric torpedo mine sunk in the channel-way of James river. This mine, of considerable power, was under the control of an officer, who stationed on one of the river banks, watched from the sandpit where he concealed the approach of the enemy. A single stake planted upon the opposite bank served to indicate—by the passing vessel being in a line with his station and the stake—the exact moment when she would be within the area of destruction. With the patience of a spider watching for its victim, so for thirteen months did this officer remain waiting for the opportunity to explode the mine with effect. At length the Federal fleet, under command of Commodore Lee, entered the James river, the Commodore's vessel being the third in the advancing rank. The foremost vessel, carrying seven guns, and manned with a pick crew of 127 men, was allowed to pass over the mine in safety, it being by arrangement held in reserve for the Commodore's ship: when the order having been passed from the deck of the next vessel, and audible on the shore, for her to fall back and drag for torpedo wires, the officer determined to explode his mine and "hoist" her as she descended the stream. The explosion took place upon a clear afternoon, and was witnessed by several persons. The hull of the vessel was visibly lifted out of the water, her boilers exploded, the smoke-stacks carried away, and the crew projected into the air with great velocity; out of the 127 men only three escaped alive. The vessel was literally blown to atoms, or, using the American phrase, into "toothpicks." The awfully sudden and unexpected destruction of this vessel paralysed the operations of the Federal fleet for a time, and Richmond was saved. Commodore Lee, declining to advance, sunk several of his ships, blocking up the channel-way. This obstruction afterwards, on the advance of General Butler, gave rise to the cutting of the "Duch Gap" Canal, now a matter of history.

(To be continued.)

The Council of the Royal United Service Institution having decided that a gold medal be granted annually for the best essay on a naval or military subject, to be determined on, each year, by the council, have made known the conditions of competition:—The candidates must be officers on full pay or half pay. The essays shall be on matters connected with the Army and Navy, alternately, commencing this year with a military subject. They must not exceed thirty two pages of the size and style of the "Journal." They must be forwarded to the secretary, on or before the 1st December in each year. They must be strictly anonymous, but each have a motto, and be accompanied by a sealed envelope with the motto written on the outside, and the name of the candidate inside. They will be submitted for decision to three referees chosen by the council. The successful candidate will be presented with the medal at the anniversary meeting, and his essay will be printed in the *Journal*. The subject for the succeeding year will be announced at each anniversary meeting. The following is the subject for the essay to be rendered on or before the 1st December, 1874—On the best mode of providing recruits, and forming Reserves, for the British Army; taking into consideration its various duties in peace and war.

DOMINION OF CANADA.



MILITIA GENERAL ORDERS.

HEAD QUARTERS,

Ottawa, 24th May, 1874.

GENERAL ORDERS (12).

No. 1.

ACTIVE MILITIA.

PROVINCE OF ONTARIO.

London Field Battery of Artillery.

To be 2nd Lieutenant, from 2nd August, 1874:

Sergeant Major John F. Williams, (formerly Brigade Sergeant-Major Royal Artillery) vice Brough.

St Catherine's Battery of Garrison Artillery. Captain Josiah Greenwood Holmes, G. S., is hereby permitted to retire retaining rank.

15th "Belleville" Battalion of Infantry.

No. 6. Company.

Memo.—Adverting to G. O., 2nd April, 1869, instead of "vice H. A. F. McLeod, left limits," read "vice Captain Henry A. F. McLeod, V. B., who is hereby permitted to retire retaining rank.

16th "Prince Edward" Battalion of Infantry.

No. 4 Company Milford.

To be Captain:

Ensign Rodman Gill Ostrander, V. B., vice John C. Lake, who is hereby permitted to retire retaining rank.

No. 7 Company Ameliasburg.

To be Ensign, provisionally:

Serg ant Benjamin Rothwell, George E. Vandusen, whose resignation is hereby accepted.

34th "Ontario" Battalion of Infantry

No. 6 Company, Bocklin.

To be Lieutenant:

William H. Browne, Gentleman, M. S., vice William Batty, whose resignation is hereby accepted.

Ensign John Napier having left limits, his name is hereby removed from the list of Officers of the Active Militia,

CONFIRMATION OF RANK.

Captain Alfred Wyndham, No 5 Company, 12th Battalion, from date of appointment: 28th September, 1866,—Captain Wyndham having been on active service as Lieutenant in a corps the service of which was similar to Her Majesty's regular army.

PROVINCE OF QUEBEC.

1st Montreal Company of Engineers.

To be 2nd Lieutenant, provisionally:

St. George J. Boswall, Gentleman, vice Peter Nicholson, left limits.

PROVINCE OF NEW BRUNSWICK

67th Battalion "The Carleton Light Infantry."

No 6 Company Grand Falls.

To be Ensign, provisionally.

Private Francis Rice,

By Command of his Excellency the Governor General.

WALKER POWELL, Lieut. Col. Acting Adjutant General, of Militia, Canada.

ROYAL ENGINEERS.—Lieutenant-Colonel Fowler, R.E., has been ordered from Devonport to Adelaide for duty.—The Royal Engineers of the Works Department, Royal Arsenal, Woolwich, before commencing the extension works at the new iron pier opposite the Royal Gun Factories, decided upon sinking an experimental iron cylinder by screwing it into the earth, a method which it is understood, has never before been attempted on so large a scale, the cylinder being upwards of five feet in diameter. The work is being done by workmen from Hamilton's Windsor Ironworks, Liverpool, who were the constructors of the pier, and the cylinder had been screwed into the bed of the river a depth of 9 feet, when it came up some obstruction, which proved to be the trunk of an old oak tree in a good state of preservation, part of the remains, probably, of an ancient forest, which, according to numerous evidences, formerly flourished on both sides of the river in places now one or two fathoms under water. This obstruction is being bored through, portions of the oak being preserved as curiosities, and there is no doubt of the ultimate success of the experiment.—An order has been received at the school of Military Engineering at Chatham for a detachment of R.E. to be kept in readiness to proceed to British North America, to strengthen detachments stationed there. A portion of the men were medically inspected at Fort Pitt on Tuesday.

M. Deburger, member elect from the Department of Meuse, has gone to Chiselhurst to pay homage to ex-Empress Eugenie.

The Marquis of Ripon was lately installed for the fifth time, as Grand Master of the Freemasons of England.

CORRESPONDENCE.

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

To the Editor of the VOLUNTEER REVIEW.

Ingersoll, May 27, 1874.

DEAR SIR,—Having seen in a late copy of the REVIEW particulars of the new target to be fired at this year at Wimbledon, we decided to have our spring match according to the new regulations, the result of which I have enclosed. The target was found very small at 400 yards, more especially as it was blowing a perfect gale.

Yours truly,  
Capt. R. Y. ELLIS, Sec. I.R.A.

RIFLE COMPETITION.

INGERSOLL RIFLE ASSOCIATION.

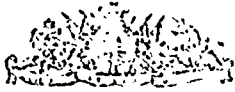
The Spring Match of the Ingersoll Rifle Association was held at the Association Ranges, Hislop's Farm, on Monday, May 25, and was the first match in the Dominion fired under the new regulations. If the National Rifle Association which reduces the size of the target to a circle 40 in diameter, up to 400 yards—owing to the smallness of the target, and the high wind which prevailed during the match, the scores were not very large. The match was well attended, quite a number of crack shots being present, Band Master Hiscott had unavoidably to leave after firing the 200 yard range. The ranges fired at were 200 and 400 yards, five shots at each range. The following being a list of winners and prizes.

Prize	Amount	Winner	Points
1st Prize	\$10.00	Capt. Ellis, 22nd Batt.	22
2nd "	8.00	Col. Attwood, 26th.	23
3rd "	6.00	R. A. Woodcock, I.R.A.	18
4th "	5.00	Corp'l Gordon, 22nd.	16
5th "	4.00	P. Garner, I.R.A.	15
6th "	3.00	Lieut. Chate, 26th.	14
7th "	2.00	Capt. Stephenson, 6.	14
8th "	2.00	A. McLean, I.R.A.	11
9th "	2.00	W. E. Hiscott, B.M. 22nd Batt.	11
10th "	1.50	G. Galloway, I.R.A.	10
11th "	1.50	E. Wilson, 26th Batt.	10
12th "	1.50	R. Minckler, I.R.A.	10
13th "	1.00	W. Young, 26th.	9
14th "	1.00	T. Hislop, I.R.A.	9
15th "	1.00	Corp'l Laird, 7th.	9

TALBOT, EARL OF SHREWSBURY.—The *Oswestry Advertiser* says that, according to a report from its Whitechurch correspondent, the bones of John Talbot, first Earl of Shrewsbury, have been discovered in the parish church of that town, where an urn, said to contain the embalmed heart of the great soldier was already known to exist. A few days ago, while some workmen were repairing the monument bearing the recumbent figure of Talbot, in the south aisle, the remains of the coffin were discovered, with a number of bones. The rector and churchwardens carefully removed the bones, which were wrapped in cerements. Only a few of the vertebral bones were missing. At the back of the skull was an opening, apparently caused by a battle axe. It may be remembered that while attacking the intrenchments at Chatillon, Talbot was dismounted and killed by a Frenchman. The Antiquarian Society, with whom the rector communicated, desired him to take casts of the skull and other parts of the skeleton, and information of the discovery was also sent to the present Earl of Shrewsbury and others. A coffin has been prepared, and it is expected there will be a public interment of the remains in the porch where the heart is believed to lie.

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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, JUNE 2, 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.

The article on "Torpedo Attack and Defence," which is appended shows with what ease those boasted weapons of Marine Warfare can be rendered effective. We have always rated them at their proper value and are not surprised at any manifestations which may arise. They are not even useful in defence of a roadstead and much less in an action at sea.

Captain Harvey, R.N., the inventor of the towing Otter torpedo, lays it down as a primary rule in his tactical instructions for the use of the weapon that an attack upon ships by torpedoes should always be made, if possible, under the cover of night. It is evident that such a rule applies with much greater significance when an attack is made upon ships lying at anchor in a roadstead

than under other conditions, and it was with reference to those, most probably, that Capt. Harvey arrived at his conclusions, and also only in relation to the torpedoes of the present, which have to be taken to the enemy, and not to those of the future, which we are promised shall be fired from a tube fixed below a vessel's water-line, and which will thus take the form of submarine artillery. The Naval Torpedo Committee have given the subject of attack by torpedo boats at night upon ships at anchor considerable attention, and have proved by experimental practice that in the majority of instances the torpedo attack upon the ship must be successful. The *Monarch*, one of the ships experimented upon, was anchored at Spithead, and on occasion was considered to have been made almost impregnable against any attack by a strong crimoline framework of booms and spars built up round, supplemented by her boats rowing-guard round her within hailing distance. The ship had also the advantage of knowing that a boat torpedo attack would be made upon her, and the time when the attack might be expected. Notwithstanding these important advantages in the ship's favor the torpedo boats—steam Linnaeus—burst through the *Monarch's* cordon of guard boats, got over the difficulty of the projecting crimoline spar defence, and struck the frigate with their dummy torpedoes. These results proved that any vessel lying at anchor at night must be fatally deficient in her defensive powers in a want of means for searching with lightning quickness and distinctness the surface of the water to a considerable distance around the ship.

To supply this want, respectively Mr H. Wilde of Manchester, some time since submitted to the Admiralty a proposition for the use of one of his electro magnetic induction machines, fitted with a proper apparatus for projecting the beam of light produced upon distant objects. One of these machines has been fixed on board the *Comet*, twin screw gun vessel at Portsmouth (one of the short and light draught-boat carrying one 18 ton gun on a raising and lowering platform, on the Armstrong-Rendel plan) and was tested during the nights of Thursday and Friday, under the supervision of Captain Boys, commanding the *Excellent* gunnery establishment, and members of the Naval and War Office Torpedo Committees, with the most complete success.

On Thursday, the *Comet* left Portsmouth Harbour for the eastern entrance to Spithead, from the channel at about 8 p.m.; but half an hour before leaving a first experiment was made with the machine and its projector lens in throwing the beam of light round the upper part of Portsmouth Harbor. The results were startling. The gunnery ship *Excellent*, with her tenders and the boats alongside and at the bottom, long lengths of sea wall enclosing the dockyard extension works, the mudbanks—it being nearly low water—the *Asia* and the vessels about her and further away Fareham Creek, Her Majesty's yacht *Victoria* and *Albert*, the *Glutton* monitor, and the few men-of-war boats moving about between the ships at the time, all stood out with wonderful distinctness, as the electric light touched them. But, beyond all others, the *Glutton*, in her French grey paint, given her as an invisible dress at certain distances by daylight, shone out in weird splendour. It needed no subsequent experiment to prove that a vessel painted in neutral color must stand out very much more distinctly under the influence of the electric light than another vessel at the same distance, and painted with the ordinary black coating of our broadside iron-clads. When the *Comet* subsequently left

the harbor and had taken on board the members of the Torpedo Committees off Southsea, she steamed to a position off Brading and the east end of the Isle of Wight and anchored, attacks being then made upon her by two steam pinnace torpedo boats, from directions unknown on board the *Comet*. When the boats had been away a certain time the electric light was brought into play, its beam sweeping the surface of the water and in each instance discovering the torpedo boats before they could lessen a mile distance between them and the *Comet*. Discovered at such a distance, their attack, of course, was considered to have utterly failed.

On Friday the *Comet* was anchored in Stokes Bay, near the west end of the measured mile, and buoyed off for the speed trials of Her Majesty's ships. Captain Boys and the members of the Torpedo Committees made a number of experiments with the light, upon which official reports will be made, as will also be done with the experiments conducted on the previous day. If we knew, which we do not, the exact details of all these experiments, comment upon them here would be out of place as anticipating the reports to be yet made by Capt. Boys and the members of the committees. What was evident to all afloat and on the look-out for the trial of the new light on the nights of Thursday or Friday was that its power was immense, and of this we may speak freely and yet briefly. On Friday, as on Thursday, no boat could approach the light within a mile without being at once discovered, and the grey or white painted steam-pinnace was always much more prominently and longer in view under the light than the other in its coat of black paint. In a boat at 2000 yards distance from the *Comet*, and with the beam of light brought to bear upon the boat, the *Times* could be read with the greatest ease.

The subject of *Electoral Warfare* occupied the attention of the Society of Telegraphic Engineers during two sittings in February last, and we republish from *Broad Arrow* of 11th April, the discussion which Mr. HOLMES' paper on that subject evoked.

From the examples given it is evident that for coast defence electrical or mechanical torpedoes are alike inapplicable and inefficient. The Paraguayan War is no exception to the general rule, because whatever torpedoes were used were operated in comparatively calm water, and the result as far as the operators were concerned was not encouraging. "Those who did not blow themselves up died during the war," and other causes beside the dread of submerged mines operated to keep the formidable fleet HERR VON TREVENFELD speaks of at bay.

Notwithstanding Mr Holmes' declaration "that an electrical system of torp. does for land defence was a much more difficult task than the protection of a coast by like means." We believe that any man particularly acquainted with the use of Glycerine, Dualine, gun cotton or any of the new explosives will be of opinion that land defence with such agents is a comparatively easy task, but that the real difficulty with sea torpedoes by the same means arises from physical obstacles which no art or power can overcome.

An ordinary mine well prepared, say with three pounds of Glycerine will set off such *mitraille* as broken stone for a radius of two hundred yards. Such mines are easily as well as rapidly prepared, and no officer would dream of marching troops over ground planted with those *fougades* if the electric system applied to such engines was worth anything it would admit of more certain manipulation on land than under the troubled waters of an harbor. Intermediate lines under cover of the guns of an outer line of batteries or entrenched positions connected and armed on the *Mine reef* system would be almost impregnable. The position of every *fougade* could be accurately marked on a chart and the whole removed in a few hours after the danger had passed away; while heaps of *mitraille* and mines might be allowed to remain permanently.

With a *terra-plein* systematically mined it is difficult to conceive how an advance on the girdling fortresses of such a city as Paris could be made, and with the topographical information which the French war officer must have had, it could only be a question of a very few days to encircle its outer defences with such a series of mines that such an operation would be possible only by fearful sacrifice of life. From shell fire there is comparative safety by lying down, from mine fire there is no such shelter, the mischief will be done after the explosion is over by the descending *mitraille* and it is easy to imagine how extensive and fearful that would be amongst a mass of troops or even scattered skirmishers.

In a former Volume (VI) of the VOLUNTEER REVIEW, we gave our readers a series of articles on military bridges, their construction and use.

The following article will show the practical method of laying those bridges, the time occupied and other useful information on pontoon practice.

Our readers will easily perceive the many elements necessary to take into account in an operation of this kind, which is after all a sub-division of that portion of the art of war known as *Logistics*.

A recent number (November) of *Strefleur's Oesterreichische Militaerische Zeitschrift* gives an account of the bridge practice of the two battalions of Austrian pioneers, during the autumn manoeuvres, in the neighborhood of Linz in the month of September last. The particulars have a certain interest inasmuch that they furnish means of comparison with the pontoon practice of other armies. The troops engaged in the Linz manoeuvres were a portion of the third truppen division of the Austro-Hungarian army, and consisted of one regiment of dragoons, nine battalions of infantry, three battalions of jagers, four batteries of artillery, two battalions of pioneers—one from Linz and one from Prague—and a due proportion of staff, administrative troops, &c. It was arranged that the bridge practice of the pioneer battalion the two working together as a single battalion—should extend over sixteen days, and be carried out at the

pontoon hard of the pioneer battalions quartered at Linz but in combination with the field operations of the rest of the troops. This hard is situated about a couple of English miles below Linz on the left bank of the branch of the Danube. The stream at this spot is 851 Vienna feet across, and has an average velocity of seven feet per second with an average depth of 49 feet in the fair way. Moreover, the current has a strong set in the direction of the left bank, so that to place the pontoons in a suitable position in regard of the stream it is necessary to run the bridges obliquely across, thereby increasing the length to be bridged over to an average of 156 klafter or 946 feet. It should be stated that the pontoons used in the Austrian service are iron boats divided transversely into separate sections, and generally provided with half decks at each extremity. Also, that unless otherwise stated, the measurements are given in Vienna feet, each of which is equivalent to 12½ English inches nearly. We give a few of the principal results obtained, which were held to be, on the whole, very satisfactory. Those who desire fuller technical details we must refer to the paper itself, which is written by Captain Bringer, of the Austrian pioneer regiment. The practice began on Tuesday, 9th Sept., 1873.

September 9.—Rainy; fine later in the day. Repeated laying of a light field-bridge formed of two section pontoons, from left to right bank. Breaking up ditto from middle. Length of bridge 957 feet with two fixed and 45 floating piers; 42 anchors up and 13 down stream. Strength of bridge party: six officers, 32 non-commissioned officers, 232 pioneers—being 18 pioneers in excess of the number laid down by the Austrian regulations for a bridge of the above description. Average time occupied in laying bridge, 3 hours; breaking up ditto, 1h. 16m.; in opening and closing the middle portion, to allow of the passage of the daily fast steamer from Linz to Vienna, 12m. and 32m. respectively.

September 10.—Very foggy day. Repeated formations of a light field bridge of two and three section pontoons from both banks at once. Breaking up ditto from middle. Length of bridge, 946 feet, with two standing and 44 floating piers; 33 anchors up, and 12 down stream. Bridge party: 7 officers, 45 non-commissioned officers, and 4 pioneers over regulation. Average time occupied in laying bridge, 2h. 15m.; in breaking up ditto, 1h. 22m.; in opening and closing middle, 13m. and 14m. respectively.

September 11.—Fine day. Laid a field bridge as on the 10th instant, over which 9 battalions of infantry with 2 heavy batteries, also general, signal and sanitary staff of the division, passed in the space of 33 minutes. Bridge party: 7 officers, 47 non-commissioned officers, and 318 pioneers—being 12 non-commissioned officers and 54 pioneers over regulation. Time occupied in laying bridge, 1h. 27m.; in breaking up ditto, 1h. 12m.; in opening and closing middle portion 5m. and 14m. Depth and velocity of stream on two last mentioned days, 49 feet and 73 feet respectively.

September 12.—Foggy morning; fine day. A party of 6 officers, 16 non-commissioned officers, and 246 pioneers engaged in throwing over the troops on rafts. For this purpose there were supplied: for the infantry, horses and guns, 8 five section pontoon boats with half decks, 2 three section ditto; and for infantry alone: 4 rafts formed of pairs of three section pontoons, 1 raft formed of a pair of four section pontoon, 1 raft formed of a pair

of two section pontoons; also, 3 two section pontoon boats to carry the landing stages—one in each. The rafts formed of coupled pontoons carrying infantry, touched the opposite bank four minutes after starting. The half decked pontoons boats with guns and horses, took two five minutes to cross. In all 515 officers and men, 68 horses and 2 guns, were put across. Two five section pontoons and 1 three section ditto were not used; and it was estimated that about 180 more men could have been carried on those employed.

September 13.—Fine day. A party of 11 officers, 65 non-commissioned officers, 400 pioneers, engaged in throwing over more troops on rafts, and afterwards laying a light field bridge as on 10th. Length of bridge, 915 feet, with two fixed and 44 floating piers, 41 anchors up, and 14 down stream. Time occupied in laying the bridge, 1h. 27m.; in breaking up ditto, 42½m.; in opening and closing middle portion 9½m. and twelve minutes. Depth of water, 44 feet. Velocity, seven feet.

September 15.—Wet day—very heavy rain. Depth of water this day, 36 feet only; velocity, 6 feet. Grand field day and review of the whole of the troops before the Emperor-King, in the course of which the following operations were performed. The arrival of His Imperial Majesty at 6.28 a.m. was the signal for the battalion forming the advanced guard of the division to cross on rafts from the left to the right bank, under cover of a battery posted on the former. The first raft reached the opposite bank in 4m, and the last in 11m. Immediately afterwards, a party of 13 officers, 77 non-commissioned officers, and 519 pioneers, commenced laying a bridge as on the 10th instant. The bridge was completed in 1h. 17m. At 7.45 a.m., the troops began to cross on it. Six battalions of infantry, one regiment of cavalry (636 horses), four 8 pounder guns, two ambulances, and 105 horses, with their riders (artillerymen, staff, &c.), crossed in 45m. After a brief interval, six more 8 pounder guns and twelve mounted men crossed. Then the bridge had to be opened for the passage of the Vienna steamer, which was done in 9½m. The operation of closing took 12m. Four more guns then crossed, and lastly, the Emperor and Imperial suite. The bridge was broken up in forty-two and a half minutes.

September 17.—Fine day. Laid a heavy field bridge from both sides at once. Broke up the same from middle. Length of bridge 946 feet, with two fixed, and 43 floating piers, 36 anchors up and 16 down stream. Bridge party: 13 officers, 49 non-commissioned officers, and 349 pioneers, being five non-commissioned officers, and 35 pioneers less than the number prescribed by regulation. Time occupied in laying the bridge, 1h. 35½m.; in breaking up ditto, 52½m.; in opening and closing middle, thirteen minutes and 10 minutes. Depth of water, four feet. Velocity, 6½ feet.

September 20.—Fine dark night. Laid a light field bridge from the right to the left bank. Depth and velocity of water as on preceding day. A trestle bridge had been carried out into the stream for some distance from the right bank; the total distance to be bridged over was therefore 553 feet. A party of five officers, 30 non-commissioned officers and 276 pioneers laid the bridge in 2h. 35m, commencing at seven p.m. The bridge was broken up the same night in 57m.

September 22.—Fine day. Depth of water 44 feet, velocity, seven feet. Laid and broke up a light field bridge from both banks at once. Length, 946 feet, with two



fixed and 43 floating piers, 36 anchors up and 13 down stream. Party, 8 officers, 45 non-commissioned officers, 356 pioneers. Time occupied in laying bridge, 1h. 19m.; time in breaking up ditto, one hour three minutes; in opening and closing middle portion, 13m. each.

September 23.—Cold, foggy day. Thermometer, 43 deg. Fahr. A party of 10 officers, 41 non-commissioned officers, and 350 pioneers, laid a bridge as on 17th instant, in one hour, 2½m., and broke it up again in 38m.

September 25.—Cold day with thick fog. Thermometer 41 deg. Fahr. Depth of water 3.9 feet. Velocity, 6.8 feet. A party of 10 officers, 57 non-commissioned officers, and 376 pioneers, laid 618 feet of light field bridge with double way in 1h. 54½m., and broke it up again in 34½m.

September 26.—Thick fog, clearing off in a fine day. Depth of water, 3.4 feet. Velocity, 8 feet. Laid a light field bridge from both ends at once. Broke up the same from the left bank. Length, 946 feet, with two standing and 43 floating piers, 31 anchors up and 15 down stream. Strength of bridge party: 8 officers, 50 non-commissioned officers, 312 pioneers, being 2 officers, 18 non-commissioned officers, and 48 pioneers in excess of the regulation number. Time occupied in laying the bridge, 1h. 12m.; in breaking up ditto, one hour ten minutes; in opening and closing middle portion, 7½m. and 8½m.

The light bridges were made of the regulation width, sufficient to admit of the passage of infantry four feet. The heavy bridge was designed to allow of the passage of infantry in column of route with a front of six men.

### REVIEWS

The *British Quarterly* for April contains the following articles:—Authors and Publishers; The Antiquity of Man; The Prospects of Persia; Provision for Public Worship in Large Towns; Aspects of the Agricultural Labour Question; The Electric Telegraph; The New Parliament; David Livingstone; Contemporary Literature. Republished by the Leonard Scott Publishing Company, 41 Barclay Street, New York.

*Westminster* for April has the following: The Bible as Interpreted by Mr. Arnold; Outdoor Parish Relief; Pangenesis; The Song of Songs; Our Own Steamers; The Development of Psychology; The Greatest of the Minnesingers; Moral Philosophy at Cambridge; Medical Charity, Methods of Administering it; Contemporary Literature.

The Ashantee war tested the merits for bush fighting of three kinds of artillery—the smallest guns in the British service. One is a small 7 pounder, 20 inches long and weighing 150 pounds. The charge is six ounces of powder, and it throws a shell of seven pounds, or a case of seventy bullets. It is made of steel and rifled. The second was a small bore howitzer, weighing 280 pounds. The third was a Gatling gun. All three were taken as far as the Prali, but there the Gatling and the howitzer were left behind as comparatively useless, and the little 7 pounder did all the execution. Its value, which was before tested in Abyssinia, is spoken of by Sir Garnet Wolseley in the highest terms.

This celebration of the birth day of our beloved Sovereign has always been a labor of love to the Canadian people. At Ottawa the past anniversary possessed if possible, additional interest from the fact that on the occasion Her Excellency the Countess Dufferin had announced her intention of presenting the Canadian Foot Guards with a pair of colors.

As the anniversary fell on Sunday, it was decided that the presentation should take place on the following day. The Foot Guards had gone into camp under the command of their gallant colonel on the previous Friday, the camp site being on the Stewart Farm at the end of Elgin Street, and it was chosen as the site of the presentation. The Guards were under arms at half past ten o'clock on Monday. It had rained heavily during the night, but the morning gave promise of a pleasant day. About eleven o'clock the Deputy Adjutant General, Lieut. Colonel W. H. Jackson, with the Brigade Major Mattice, arrived on the ground. The Ottawa Field Battery of Artillery, under command of Captain Stewart, formed by demountable batteries on both flanks of the Guards. The Acting Adjutant General, Lieut. Colonel Powell, with the following officers of the Staff were on the ground: Lieut. Colonels Macpherson, Brunel, Denis, Aumond, Coffin; Majors Macdonald, Lelievre, and Perry. At noon His Excellency the Governor General and Lady Dufferin, attended by Lieut. Colonel Fletcher, Scots' Fusilier Guards, Military Secretary, and Mr. Hamilton, A. D. C. escorted by Captain Sparks' troop of light cavalry arrived on the ground under a salute of the field battery, which unfortunately brought down the rain in torrents effectually marring the ceremony of the presentation.

The following is taken from one of our contemporaries:—

#### THE MARCH PAST.

His Excellency advanced a few paces in front of the line of spectators to return the salutes of the corps as they passed. First came the Cavalry, then the Artillery, and lastly the Guards, marching as steadily as old soldiers, and looking uncommonly well. After passing, they halted, changed their front, and marched back again to their former ground. The *feude joie* was fired in excellent style, the band between each discharge playing the National Anthem, the troops presenting arms, and the spectators, despite the pitiless downpour, loyally standing with uncovered heads, the firing being over, three ringing cheers for the Queen were given, making the welkin (if there is one on the Stewart Estate) ring again. Then came the event of the day, the presentation of the colors. So soon as the cheering had subsided, the Guards advanced in line, marching as steadily as a wall. They halted about forty paces from where their Excellencies were standing and forming three sides of a square, the drums of the regiment were piled in the centre thereof, and against them were placed the colors, the Queen's to the right and the Regimental to the left. Grouped around them were Colonel Ross, Major White, Ensigns Aumond and Bato, with the Color-Sergeants, and the imposing figure of Drum-Major Lambkin in the rear.

Their Excellencies then advanced, accompanied by the members of their suite and their staff, and after a short service of prayer by the Lord Bishop of Ontario, who with the Rev. Dr. Jones, was in full canonicals, Her Excellency took the Queen's Colors from the hands of Major White, and presented it to the senior Ensign, Mr. Aumond, who received it kneeling on his right knee, the same procedure being observed with regard to the Regimental Colors, which was taken by Ensign Bato, also kneeling. The rain at this juncture came down harder than ever, and it required no small degree of fortitude to stand against. Her Excellency then addressed the regiment as follows:—

*Officers and Soldiers of the Governor General's Foot Guards:—*

I commit into your safe keeping these colors, the emblems of your Queen's Sovereignty, and the military honor of your regiment, with the full assurance that you will guard them faithfully, and bear them bravely, whenever and wherever your Queen and your country may require your services.

Col. Thomas Ross delivered the following reply:—

*May it please your Excellency:—*

On behalf of the Governor General's Foot Guards in the Militia of Canada, I desire to express to your Excellency the gratitude of the officers, non-commissioned officers and men, at the generous and costly gift by Your Excellency to the battalion by a stand of colors. There are yet existing in Canada, the colors of regiments of militia which bear upon them the records of achievements of a war long past, the history of whose services tell of their gallantry as local troops of their Sovereign. And though the blessings of peace may now well be anticipated in the future career of the Dominion, the Governor General's Foot Guards will, under any circumstances, be actuated in no less degree by devotion to their Sovereign and to their country, than has been shown by their predecessors in the Militia. The battalion feel that the presentation of colors to it may well be regarded as a compliment to the Militia of the country. Associated by their Regimental designation, as well as by the fact of their situation at the seat of Government with the representation of our Gracious Sovereign, the Governor General's Foot Guards will ever bear in memory the great kindness and generosity of Your Excellency; and the interest taken in the Militia of Canada by the illustrious and distinguished nobleman who now is the representative of the Queen, and, on behalf of Her Majesty, administers the Government of Canada, as well as the command of Her Majesty's Local Forces throughout this vast Dominion.

The line was then re-formed, and the troops were shortly afterwards marched to their respective quarters, and those of the spectators who were not invited to the luncheon, trudged off to their homes, though in that slough of despond, yclep. Elgin street, mud was ankle deep, and travel was decidedly the reverse of pleasant. To make matters worse, just in the mud-diest part of the route, Mr. Topley's waggon had stuck fast, and pedestrians had to make considerable detour through the filth in order to make their way. It was extremely aggravating to see the sun shine out beautifully just as the folks got housed, and the great event of the day was over. "Old Probs" aforesaid, again came in for a share of the opprobrium, for his spiteful eccentricities for shedding his (farmers') blessings just when he was wanted to withhold them. The men were of course nearly drenched,

and one gallant cavalry officer, whose head-gear was perhaps the most heavy of any on the ground, said he didn't like the taste of his busby, and to judge from the manner in which the water coursed down his face towards his mouth, he was quite in a position to give an opinion upon the matter.

No accidents occurred to mar the successful nature of the proceedings, which were the most interesting of their kind which have ever taken place in the city, the Guards being, we believe, the first Canadian Volunteer Regiment that has ever been so honored as to have a stand of colors presented to them by the lady of a Governor General. They may well be proud of them, and we venture to predict, that should they ever have occasion, they will truly bear out Her Excellency's boast to "bravery and truly defend them."

The camp broke up in the afternoon, and the men were dismissed to resume the duties and business of civilian life, after spending a really pleasant time, the enjoyment having been heightened by the presence of their comrades of the Prince of Wales' Rifles.

THE LUNCHEON.

Immediately after the close of the ceremony of the presentation of the colors, their Excellencies were escorted to a marquee by Lt. Col. Ross, and were entertained at luncheon, in company with a large number of ladies and gentlemen. The marquee was handsomely arranged and decorated, the head of the table being overlooked by a magnificent Prince of Wales' Plume, in bronze, flanked on either side by the newly presented colors, supported by two sergeants, giving a very handsome effect. The chair was occupied by Col. Ross, having on his right hand His Excellency Lord Dufferin, Mrs. Ross, the Lord Bishop of Ontario, the Hon. Mr. Ross, and Hon. A. J. Smith. On the left sat the Countess of Dufferin, Lieut. Col. Fletcher, and Lady Harriet Fletcher, Hon. Mr. Dorion, Hon. Mr. Huntingdon. During the luncheon the fine band of the Guards, under the direction of Mr. Carter, played choice selections of music. The luncheon was furnished by Mr. Kavanagh of the Queen Restaurant, and was served in princely style. The luncheon both in point of arrangement and material was the best affair of the kind ever got up in the city, and did credit to Mr. Kavanagh's reputation as a caterer. The committee—Col. Ross, Major White, and Capts. Tilton, Walsh, and Lee, deserve every praise for the good taste and care that had been taken to get up the affair.

After luncheon, Col. Ross proposed the health of Her Majesty the Queen, which was duly honored; he then proposed Lord Dufferin's health, which was enthusiastically toasted. In proposing the toast Col. Ross said, as it should be memorable of the lively interest taken in the regiment which he had the honor to command, by His Excellency and his noble lady, who also took an interest in everything which concerned the welfare of the Dominion, he trusted that the flags unfurled to day would never be disgraced; but that when called upon, officers and men would be ready to sacrifice their lives in defence of their Queen and country. On behalf of the regiment, he heartily thanked their Excellencies for the honor they had just conferred—(Cheers.)

In reply to the toast, His Excellency spoke as follows.

Colonel Ross and Gentlemen.—In returning you my thanks for the courteous reception you have given to the mention of my name, I am glad to seize the opportunity of congratulating both you and those I see around me, on the admirable appearance your fine regiment has presented in the field this morning. Its general bearing, and the manner in which it went through the various evolutions it was called upon to perform was most creditable to all concerned, so great a degree of efficiency could only have been obtained by well sustained and honest hard work. I am sure every Canadian present must have felt his heart thrill with pride, and triumph, as his eye glanced along your steady and stalwart ranks—especially when he remembered that the serried front before him presented merely a single and detached specimen of the enrolled militia of this country—of that wealth of sturdy manhood whose strong right arms, are every where turning the wilderness into a garden, and on whose valour we can confidently rely to protect the happy homes they have planted and the golden fields their industry has rendered so valuable. (Great applause.) Of course gentlemen I am aware that in remote districts, and amongst a more sparsely populated area where there do not exist the same facilities for frequent drill, nor the stimulus of repeated parades as at the head quarters, we must be content with a varying standard of efficiency,—but whatever allowances have to be made on this account I am certain there is not a Canadian Regiment between the Atlantic and Pacific that is not animated with the same loyalty to the Queen, the same patriotism, the same anxiety to do their duty as are you yourselves [Cheers.] It is on this account I hope it will be understood that in the presentation of colours which has taken place to-day there has been no intention of paying a capricious compliment to a peculiarly favoured corps. I believe you yourselves would be the first to resent any invidious distinction of that nature, and that you pride yourselves on the fact of occupying exactly the same status, both as regards the rule of seniority for your officers, and the general conditions of your service as all the other regiments of the line. (Hear, hear.) At all events it is my wish and expectation that the favour conferred upon you by Her Excellency to-day may be accepted as a token and evidence of our hearty sympathy which the military spirit of the Dominion at large, as well as our respect and good wishes for every corps, and every arm to be found on the muster rolls of Canada. (Great applause.) Of course in rendering this tribute to the force of this country, it greatly enhances our pleasures that this regiment should happen to be the most natural and appropriate channel through which it would be conveyed for although the Governor General's Foot Guards were embodied, named and uniformed before I came to the country, I have had especial opportunities of becoming intimate with its painstaking officers as well as of repeatedly admiring its fine appearance on parade, and I think I may add without fear of exciting either jealousy or contrivance, that it might be difficult to find from one end of the country to the other a body of men who by their general good conduct, and their unremitting endeavors to improve their discipline and military aptitudes, are more fitted to represent their absent comrades. And here I cannot help observing that apart from purely military considerations, it is of considerable advantage that there should be stationed at the capital of

the country a well appointed and well disciplined line regiment whose presence on State occasions gave something of life and color to the modest ceremonial with which in accordance with the traditions of the mother country, we solemnize in Canada the typical functions of our civic existence. Of course I am aware that there are persons to whom all display of this kind is distasteful, and who in the name of so called republican simplicity would abolish every outward sign and symbol of the national "Imporium." But on reflection I think it will be found that this philosophy is faulty, and that if pushed to its logical conclusion in all the relations of life, it would destroy much of the ease, amenity and decorum of our social intercourse. [Hear, hear.] At all events a great historical people like ourselves may be pardoned if we cling to these ancient usages which are the hand marks of civilization and progress. [Applause.] For this reason, I have thought it my duty to retain, without however adding to them in the slightest degree, those observances which I found established by my predecessors, in which you gentlemen play so conspicuous a part, and in doing so I believe I have been acting in harmony with Canadian sentiment. [Applause.] Were it otherwise, I should of course be willing to modify the customary produce, but the readers of history will remember that it was the least constitutional of European monarchs who thought jockey boots, and a hunting coat a dress good enough to meet his Parliament in, and I am quite sure it is understood and felt where ever the Governor Gen. comes down in State to open the Session, that the solemn forms gone through on that occasion are parts of no idle and vain ceremonial, but the manifestation on the part of a proud and free people of their veneration for constitutional Government, and of their deep sense of all that is implied in the annual re-assembly of their representatives in the great Council of the Realm. (Hear, hear.) At all events gentlemen this is the feeling uppermost in my own mind on such occasions, and never does it strike me more forcibly than when receiving your salute—given not to me the individual, but to the official representative of our common sovereign, who is at one and the same moment the guest of the Canadian people, the visible link between them and the great Empire with which they are associated, and the local head of the most thoroughly popular and purely Parliamentary Government, that it is to be found on either side of the Atlantic. (Great applause.) Lord Dufferin concluded his speech by proposing the health of Col. Ross and the Governor General's Foot Guards in highly complimentary terms.

Colonel Ross responded, expressing a hope that they would always continue to enjoy hereafter their Excellencies' esteem. (Applause.)

The Paris news papers generally think the new Ministry more of a business one than a representative of any distinct political programme. The Assembly has adjourned until Thursday next to enable the Ministry to arrange the order of business with the Constitutional Committee.

Advices from Port au Prince say that the President of Hayti has resigned and handed over the Government to Domingue, Vice President, who is supported by the army. He demands that the Assembly shall declare him President. There has been no disturbance, but an uneasy feeling prevails.

## WILLIAM AND SUSAN.

A VERY MOURNFUL TEXAS BALLAD.

*(From the Louisville Courier)*

Susan Brown and William Brady,  
Lovers in the Lone Star State,  
One calm night, all snug and shady,  
Side by side in converse sat.  
'Twas an old man Brown's pizaz;  
Stars were brightening all the skies,  
And the moon upon the plaza  
Was just upon the rise.

'Twas the hour for love or liquor—  
Calm, sweet hour in early June;  
Love and wine will ever dicker  
On such a night with such a moon.  
Susan was as fair as Hebe  
Dressed to all her Sunday clothes—  
Fatter than your cousin Phoebe,  
Who is fatter than the rose.

As for William—never willwood  
Suctled more stout or hale  
He was from his very childhood  
What the Texans called a whale.  
There they sat for long hours talking  
Of their hopes and joys and fears;  
Talking of their loves and chalking  
Out their plans for coming years.

Speculating on their marriage,  
What dress she'd wear that day;  
Talked they also of a little crib and carriage  
Which might perchance come into play.  
Thus they sat, her hand in prison,  
Not a prisoner, harsh or stern,  
For 'twas merely locked in his'n,  
As his lips were pressed to her'n

But alas! the course of true love  
Smoothly runs, oh never! never!  
Hearts enlured in old or new love  
Soon or late must sigh and sever.  
O that in the sea of rap ure  
Where the heart most sweetly floats,  
Fate pirate's sure to capture  
Halt our joys and cut our throats!

Hark!—the smell of shot and powder  
Rises like the funeral knell!  
Loud, r, louder, and still louder  
Rambles that heart-rending smell!  
Susan's sybil soul prophetic  
Knew that rattle meant but ill—  
Knew that old man Brown erratic  
Was upon the hunt for Bill!

Bill, the lode star, whom she follows,  
Whither—asking, caring not;  
Now she feels that fifty dollars  
Were poor pay to see him shot.  
Oh, the earnest love of woman!  
Little for herself she seeks;  
It is not a tating uncom-son  
For its flames to last six weeks!

All alone a door is bursted  
Close to where the lovers sit,  
William had got up and dived,  
But it was too late to get.  
Ere he dreamed of flight or fear once,  
Or had time to cut or run,  
Old man Brown in ale his appearance  
With his double barreled gun.

Susan's knees shook fast and faster,  
William's at a shock, 'tis said,  
Till they tumbled down the plaster  
From the ceiling over head.  
Susan screamed, her dark hair flying  
Like a meteor streaming far;  
Springing to her feet and crying  
"Please don't shoot, O cruel par!"

But that was so cold and cruel,  
Swore he'd send Bill to that cell  
Where there's too much fire and tact  
For to have a pleasant time.  
Then he raises his shooting iron,  
Rivling much and swearing more,  
Till the air got blue with fire on,  
To hear how dreadfully he swore.

What, oh what was William doing?  
While thus raved the old gabool?  
Seeing plainly what was a-frowling,  
He was likewise on the shoot.  
"Hold, rash par!" cried the daughter,  
All unheeded were her cries,  
As also the sweet salt water  
Streaming from her lovely eyes.

Standing there in all his rigour,  
O! man Brown now aimed his gun,  
Pausing ere he pulled the trigger,  
The King may be but wou't run  
Bill, though, was not of the cottle  
Watch who'll be there dare nor do;  
But, once shaved into a battle,  
He was sure to see Bill through.

Never since the age of fiam  
Was suspense left more profane;  
For one moment more and William  
Had been made to bite the ground.

Quietly drawing his repeater,  
Which he carried two or three;  
Cocking it at shortest meter,  
Drew a bead on O. M. B.

Few things swift as lightning are there!  
Swift thus came the pistol's roar,  
And poor Susan's hapless father  
Lay there weltering in his gore.  
William's sure unerring bullet—  
An infernal slug, no doubt—  
Took O. M. B. in the gullet,  
And he waltzed right up the spout.

And the coroner, flying nigh him,  
Came; but William didn't run,  
Feeling sure they'd justify him  
In the deed that he had done.  
Which they did; for pava's fury,  
Susan, weeping, told it o'er,  
And to William said the jury:  
"Go, my son, and shoot no more."

Here my muse must stop and tarry;  
All she knows is in this lay;  
Whether Sue and Bill will marry,  
She is not prepared to say.  
But as Bill—who is no joker  
With stocked cards, you understand—  
In that game of laden poker  
Played a square and honest hand.

Should he, when there are no traces  
Left of his unerring shot,  
Meet Sue's hand with but four aces,  
He will no doubt take the pot;  
For Sue knows her pu wasable  
And had done it with a rush,  
With his fall to sweep the table,  
Had not William held a flush.

## LECTURE.

(Royal United Service Institution.)

Thursday Evening, February 27th, 1873.

Major General WILLIAM NAPIER, Director of  
Military Education, in the Chair.CHANGES OF TACTICS CONSEQUENT ON THE IM-  
PROVEMENT OF WEAPONS AND OTHER  
CIRCUMSTANCES.By Lieutenant Colonel F. MIDDLETON, Sup-  
erintendent of Garrison Instruction -  
Aldershot.*(Continued from Page 251.)*

Let us now see what was the system of  
tactics at this period, such as was used by  
Marlborough among others. The infantry  
was formed in two lines three or four deep  
on as open ground as could be found. No  
skirmishers. The flanks covered with ca-  
valry, massed. The artillery in front, almost  
immovable. The positions were mostly  
taken up beforehand by both sides exactly  
opposite and parallel to each other, or nearly  
to each other, or nearly so, and often fort-  
lied. In fact, before the fighting commenced  
the field of battle must have looked like the  
picture of one which we see drawn on the  
lid of one of those toy boxes of soldiers for  
children. The troops all moved slowly and  
liberately. Sometimes the infantry remained  
stationary while the cavalry tried to drive  
each other away. No attempt was made to  
combine the three arms for the purposes of  
attack.

The great skill of a General in those days  
were evinced in his choice of a position to  
fight in—one that was suitable to the num-  
bers and composition of his army. Marl-  
borough's *specialité* was discovering a weak  
point in his adversary's disposition, and  
making his attack on that point.

We will now turn to Frederick the Great  
of Prussia, who was the first real reformer of  
tactics in modern times. At his father's  
death, he found ready made to his hand an  
army in the most perfect state of drill and  
discipline—in fact a perfect machine. This  
army consisted of 72,000 men, and beside  
the army, Frederick found a million and a  
half pounds in the treasury to keep it up  
with.

The first reform he undertook after his  
father's funeral, was to break up the cele-  
brated Potsdam regiment of Grenadiers,  
which had cost his father so much time  
and money to get together, but who were  
perfectly useless except for show.

He soon had an opportunity of testing  
his army, as he engaged in the war in  
Silesia in 1741. This war, luckily for him,  
lasted only two years, and was a successful,  
one. But, though successful, he was not  
satisfied. He saw that, small as his army  
was compared to those of his neighbours, if  
he would hold his own, he must make up  
for his deficiency in numbers by increase  
of mobility and the adoption of a new sys-  
tem of tactics. Accordingly, taking advan-  
tage of its perfection in drill, he accustomed  
his army to march in long open columns  
with the utmost precision, so as to enable  
him by rapidly wheeling them into line to  
place them obliquely across the flank of an  
enemy. He always fought his army in two  
lines three deep, with cavalry on the wings.  
When moving to a flank, each line preserv-  
ed its distance from the other. The one  
nearest the enemy could form line and  
either attack or contain him, the other line  
moving round his flank.

He took away the clumsy fire arm from  
the cavalry and gave them the sabre, mak-  
ing them charge at speed. He made his  
field artillery capable of moving with his  
infantry, and organized horse artillery to  
accompany his cavalry, and, in fact, used  
the three arms in combination for attack.  
He taught his army to adapt itself to the  
ground, instead of trying to adapt the  
ground to itself, thus enabling him to  
force his enemy to engage when and where  
he chose. The long peace which followed  
after the war in Silesia enabled him to  
perfect all these reforms, so that when he  
found himself at war with the three great  
military powers in Europe, he proved him-  
self more than a match for them. This  
gift of seeing their military errors and short-  
comings, and steadily amending them,  
seems to be peculiarly a Prussian one; one  
the Prussians of the present day having  
done very much what Frederick did. In  
both cases the wars in which they gained  
their experience were successful, and they  
were allowed by Europe to make their re-  
forms and improvements without any one  
perceiving them until brought forcibly to  
notice by wonderful victories. Another  
coincidence may be found in the two cases,  
and that is, that in Frederick's first cam-  
paign the Prussian infantry fire-arm had  
nearly as great a superiority over that of  
the enemy as was the case with the Prussian  
infantry arm in the Danish and Austrian  
wars of our own time. This was owing to  
the introduction of steel or iron ramrods in  
the Prussian army, invented in 1741 by the  
Prince of Dessau. The infantry up to this  
time used wooden ramrods, which very soon  
broke in the heat and excitement of load-  
ing quickly. Sometimes the men carried  
an extra one in their belts, but that could  
have only been a temporary relief, and  
must have impeded the man's movements.  
The Austrian and Prussian armies had, I  
believe, a practice of issuing so many iron  
ramrods in two pieces to a few non com-  
missioned officers, but even this would not  
be of much avail. The result of this was  
altogether, that it was usual for infantry to  
cease firing after a few hour's engagement,  
so you may fancy the startling advantage  
the iron ramrods in possession of one side  
only, must have given that side. This but  
the was a remarkable one for other reasons.  
It was Frederick's first battle, and it was

fought with the tactics of the day, such as I have already described to you. He himself tells how, on the morning of the battle, he found the Austrians in cantonments dispersed several miles apart, and, instead of at once attacking them, as he would have done later on in his career, he began to draw up his army, "secundum artem," as it was then considered, and of course gave the Austrians time to do the same.

Leaving Frederick the Great's time, and passing on to the time of the early Republican wars, we find that all the continental armies had adopted more or less Frederick's system of fighting in two great lines of three or four deep.

The French Republican Armies first shattered this system, by adopting a line of tactics which was, as it were, forced upon them. They found themselves called upon to fight with these highly drilled and disciplined armies without being either, themselves, and not having the time to become so, they therefore adopted a system which took less time to learn. They broke their armies into small columns which marched independently to the spot where the line was to be taken up, and as these compact bodies presented good marks for the enemy's artillery, they drew in advance swarms of skirmishers, the smoke of whose firing and the confusion caused thereby, very much concealed and assisted the advance of their columns.

This system which was suitable for the dash and *elan* of the French soldier, enabled the Republican armies to beat their enemies, and gave them time to organize and drill their armies in a more regular and careful manner afterwards.

Napoleon is credited with having said that "to retain a superiority over the enemy in battle, it is necessary to change the system of tactics every 10 years," and yet he was not a tactician, and did not attempt to meddle much with tactics, but accepted those he found in use in the Republican armies, and which may be designated "the column with skirmishers." He made, however, several great changes in organization. He made the *coups d'armée* (the idea of which he took from Moreau) which was a small army complete in itself in everything. He also massed his cavalry and artillery, and did great things with them on many occasions.

His defeat of the Prussians at Jena and Auerstadt, gave the final blow to the prestige of Frederick's system of tactics, and the French system became more or less the model for the armies of Europe. From what has been said, you will observe, that two of the greatest changes in tactics in modern times have resulted from other circumstances than actual improvement in arms.

The English alone adhered to the line formation and used two ranks instead of three. This has been accounted for by saying that all our battles were fought on the defensive, for which the line is more suitable. Now, it is true, that most of our battles in the Peninsula were defensive ones owing to our inferiority in numbers, but certainly they were not all defensive, and yet in those, our line formation did not fail us, nor did it at Alma. The line formation gave a great advantage in its extended line of fire, and the probable reason that other nations gave it up, was that they could not, as we could, trust their soldiers to receive the attack of a column in line. Moreover, the column formation gave con-

fidenco to the men, much more so than that of the line formation.

A great improvement took place in the infantry weapon, by the introduction of the percussion lock, about 1823, but no change in tactics resulted from it. At the siege of Sepastopol no change took place. The Minié rifle was, however, first used there, and though our men were unskilled in its use, the Russians suffered greatly from its fire at a range which astonished them.

We next come to the campaign in Italy, in 1859. Here we find a greater use made of skirmishers and a looser style of attack, and for the first time the skirmishers instead of only covering the attack, actually attacking. In this campaign also rifled cannon was first used, and one of its effects was, that owing to its range, its fire reached the Austrian reserves, who were posted at what was then considered the usual distance for reserves to be posted at, so as to be out of range of the enemy's artillery. But altogether there was no very great change in the existing tactics to be observed. The War in Denmark seems to have afforded no information to anyone but the one Power in Europe, who had been quietly for nearly half a century, preparing itself to again surprise the world if not to "witch it, with its noble feats of arms."

Having tried their prentice hand on the Danes, the Prussians turned and grappled Austria by the throat, and it was then and not till then, as Colonel Chesney remarks in his admirable lecture, on "the Study of Military Science in time of Peace," that we found "there had been changes made by Prussia during peaceful years, in organization, in administration, in tactics, in armament, and in strategy, such as the world never saw before." All Europe was in amazement, some nations in alarm. The breechloader, which had hitherto been opposed, was declared to have been the sole cause of the Prussian success, and to speak metaphorically, Europe resounded with the din of armourers making breechloaders. But it soon became evident that the new arm required new tactics, and every one began to enquire into the tactics of the conquerors.

Shortly after the needle gun had been issued to the Prussians, their Generals had an idea that fewer skirmishers would be required than before, owing to the superiority of fire induced by the loading at the breech; but a little experience showed them that the contrary was the case. Their actual tactics in 1865 consisted of moving in columns; of narrow front, either half battalion columns or company columns; each of these columns throwing out clouds of skirmishers, with supports, which gradually pressed forward and reinforced the skirmishers, thus lengthening and thinning the line as they naturally inclined towards the flanks; the small columns sometimes pressing forward and firing volleys, on which at the time the Prussians placed great confidence. This system of attack was by no means what had been laid down by the Prussians in their drill-books, but the circumstances of the case forced it on them, and luckily their men and officers had intellect and confidence enough in one another to adopt it even after the campaign had begun. Thus the normal order of battle for a Prussian infantry battalion was in a double column of divisions (half companies) formed on the

two centre divisions; yet most of the fighting in 1866 was done with their now celebrated company column.

It may perhaps be as well here to see how this company column is formed.

The company is in peace time 200, and in war time, 250 strong. When in line, it consists of two divisions of three ranks each. When in column, it consists of three divisions in column each of two ranks, with an interval of six paces between each, the rear division being formed from the skirmishers who constitute the third and when the company is in line. Six ranks are presented to the enemy's fire, or four ranks when the skirmishers are out, in which case, by the two front ranks kneeling, the whole four can deliver their fire.

Before the Franco-Prussian war, great stress was laid from the supports, by the Prussians, but they had not then fought against breech loaders. Now they confess that the breechloader has so increased the employment of skirmishers in action, that volleys can rarely be used. Attacking with heavy columns is now a thing of the past, as Boguslawski says in his excellent work, "The Campaign, 1870-1," "The real secret of infantry fighting, speaking in general terms, now consists in so regulating and controlling the independent action of the individual soldier, and of the leaders of a tactical unit as to facilitate, as far as may be, the direction of the fight without losing the advantages of that same independent self reliance."

Great clouds of skirmishers and small tactical units, that is the form for infantry."

The French did make some alteration in their tactics after the introduction of their breechloader, but we now know that they did not appreciate the real tactical powers of the weapon, and they trusted too much to the superiority of range and rapidity of fire of the Chasspôt.

During the war of 1870-71 this superiority of range was a positive drawback to the French, as it tempted them to fire at impossible distances, and to throw away their ammunition.

The Prussians were taught a few lessons also during the campaign. One was that front attack against breechloaders under cover was madness; another was to show any column within rifle range was equally madness; another was the unadvisability of volley firing in most cases, and the necessity of preparing all infantry attacks by a tremendous fire of artillery; another, that it is destruction for infantry to retire in the open under the fire of an enemy armed with breechloaders.

Let us now try and realize a battle field of the present day. Enormous clouds of skirmishers, advancing firing, now halted, now disappearing, now rushing forward in little clumps. Supports and reserves crossing to the front, and merging themselves in the front line, which lengthens itself out on both flanks, no large columns of troops visible, perhaps lines deployed at open order. Guns massed in position. Cavalry seen in small bodies hovering about out of range. In fact, save for the smoke and din of fire arms and artillery, one might fancy one was gazing on one of the *mêlée* fights of the middle ages. But how different in reality. There is order in all that disorder, every individual engaged being more or less in hand and in the highest state of discipline and training. This description of a modern battle field, imperfect as it is, may

\* See Journal of the Institute, Vol. XV, page 129.—Ed.

yet give you some idea of the extraordinary alterations in tactics caused by the introduction of the breechloader—a more radical change than has ever yet been made.

As to our own changes of tactics, we are making them slowly but surely; not slavishly following those of Prussia but adapting them to the constitution of our army and our national characteristics; at the same time taking full advantage of the greater war experience of our neighbour, and which it would be folly to ignore.

Our tactical unit is to be the half battalion column instead of the company column.

For marching, a battalion having been told off in double companies thus—(First and second company—first double company; third and fourth company—second double company, &c.) when not otherwise ordered, it will form columns of double companies in rear of one of the flank companies, so that one half battalion will always be in front and one in rear.

For the attack, a battalion acting singly will be formed either in line or half battalion company quarter column, at deploying intervals, covered by the first company of each half battalion skirmishing, with the second company of each in support, or one half battalion will extend two companies skirmishing and two in support. The other half battalion following in such formation as may suit the ground or circumstances.

These half battalions are commended by the Majors, who are to understand that it is their duty to profit by any opening which may occur without waiting for orders. This formation, in reality, differs very little from the Prussian company columns, save that we have more officers, which is a great advantage in these days of skirmishing.

Another alteration in our system is that of allowing the supports to move with open files, that is to say, with an interval of two paces between each file.

Another alteration is that, if the enemy's fire is heavy, and there is no cover, the line may advance with files opened out to one pace from each other. If the fire is very severe, it may come up by a succession of rushes.

One thing is very clear, we must pay greater attention to the individual teaching of the soldier, and especially must he be taught to take advantage of cover; and it is marvellous how slight a rise or hollow, or even bend in the ground will cover a man lying down. The best skirmishers I ever saw were the Maories in New Zealand, and with them, scars of wounds received in action, instead of being honourable, were considered disgraceful as showing them to have been unskilful warriors. The question of "shelter-trenching" has not yet been fully faced. There is no doubt that skilfully and properly placed trenches would be invaluable and necessary in some cases, but the soldier must be made fully to understand that he is not to remain in them, and that they are to be no obstacle to his advance. Another fact should be carefully impressed on every infantry soldier, and that is, not to fear a cavalry soldier. We have already laid down that it is not always necessary to form square for cavalry, and we are the first army who have done so; but sufficient trouble has not yet been taken to show the infantry man how completely the breechloader has made him superior to the cavalry soldier. Those practical Prussians have a paragraph in their drill regulations to this effect. "The

shooter must be fully persuaded in his own mind that, where in the plain, he is superior to the single trooper; also he need not shun the fight against several, if he retains composure and presence of mind, and loads his rifle after firing a shot, without taking his eye off his opponents. At close quarters, it is important that he should gain the left side of the horsemen (with lancers, the right side, and then make use of his bayonet."

In fact, the late Prusso Franco war showed distinctly that the cavalry soldier could do little against an infantry soldier. The ubiquitous Uhlan disappeared as soon as the Franc-tireurs made their appearance. During the siege of Paris the Prussians sent out what they called divisions of cavalry, to scour the district, but they soon found that they could do very little—the Franc-tireurs took to a wood or a village, neither of which could the cavalry enter. They then, I believe, sent a battalion, or half battalion of Jägers with each division, and as the cavalry found that kept them back, they used to put them into carts. This want, at certain times, of infantry, seems to be likely now to cause us to return to the dragoon proper, of whom I have already spoken to you, and it is evident something of the sort is required. But we must be careful not to split on the rock our predecessors did. They must be made to act as what they should be "mounted infantry," and not bastard cavalry. Light carts have been proposed as a substitute, and there is something to be said in their favour too; however, I will not go further into this subject, as you will have it ably discussed hereafter by a brother officer, who has gone into the subject with care.

With regard to the attack and defence with the breechloader. It would seem that the power of the defence is much increased by its introduction, and certainly, good infantry entrenched, ought to hold their own against great odds; and if their flanks are safe, and they have plenty of ammunition, they ought to be impregnable. Even after the terrible cannonade at St. Privat, which prepared the way for the attack of the Prussian Guards though the French were only behind low walls, we knew that the attack failed; and even when the flank attack took place, had the French not been out of ammunition, it is doubtful whether the Prussians would have succeeded as they did.

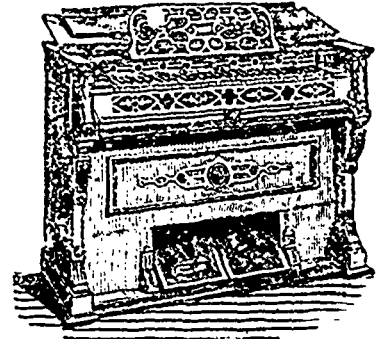
Owing to the din and noise of an action with breechloaders, it is impossible for the men to hear the bugle sounds, and it seems likely that we shall have to give the whistle to all the Officers.

And now in conclusion, let me recommend you all, Gentlemen, to pay the greatest attention to skirmishing, and learn the true tactical use of your weapon, for, without that knowledge, correct shooting will stand you in little stead, and you who are Officers, remember that perfect knowledge of your men's as well as your own duties will alone give them that confidence in your leadership which is now more than ever necessary in the field. You have amongst you the making of the finest skirmishers in the world, all you want is practice; but bear well in mind, that no infantry can in future perform its rôle in the field unless it is in the highest state of training and discipline.

Several skirmishes between the Republicans and Carlists occurred on the 20th in the neighbourhood of Bilbao. The Carlists attacked them and were repulsed with heavy loss. Thirty Carlists were captured. The Republicans lost 100 killed and wounded.

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