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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. VII.

OTTAWA, (CANADA,) TUESDAY, APRIL 8, 1873.

No 14

NEWS OF THE WEEK.

Capt. R. H. O'Grady, C.B., 84th Foot, will continue to act as A. D. O. to the Lieutenant General commanding the forces in the Dominion of Canada.

Her Majesty has been pleased to appoint John Pope Hennessy, Esq., C.M.G., to be Governor and Commander-in-Chief of the Bahama Islands.

The honorary degree of L.L.D. has been conferred by the University of Aberdeen on Captain Francis Duncan, Royal Artillery, author of the "History of the Royal Artillery," and other works, and at present superintendent of the Royal Artillery Regimental Records.

On the 2nd inst. Her Majesty was present at an inspection of the new Victoria Park in London, and was loudly and enthusiastically cheered by the crowds of her loving subjects present.

The French Assembly have been debating the Lyon Municipality bill for two days. The discussion closed on the 1st inst. with a remarkable scene. Leroyer, a Radical, described the Committee's report which accompanied the bill as trumpery. The Marquis de Grammont bitterly retorted, and accused the Deputy of impertinence. President Grevy made a dignified speech in which he intimated he should resign, and declare the sitting ended. The House broke up amid intense excitement. The Deputies of all shades, and political opinion waited on President Grevy to-night and begged him to overlook the incident. But it is expected his resignation will be offered to-morrow.

M. Grevy, in consequence of the extraordinary scene of yesterday, did not attend to-day's (2nd inst.) session of the Assembly, and in his absence his resignation of the Presidency of that body was presented and read. The Assembly at once re-elected M. Grevy by a vote of 349 to 251. It is believed he will refuse to again accept the position.

The recurrence of such scenes shew what may be expected in the event of the German evacuation of France.

On the Austrian frontier and in Wallachia a series of local disturbances are occurring,

which do not argue well for the peace of either countries at Bucharist.

A collision between the carmen and military, growing out of the refusal of the former to pay certain taxes, took place at Gernerpe, a town of Wallachia, this morning, several persons being either killed or wounded. The latest despatches report tranquility restored.

The Czar, in order to gratify his friend and ally U. S. Grant. President of the United States, allows the following announcement to be made public :

It is announced that Gertschakoff has, in compliance with a request from Washington, asked the Russian Geographical Society to discuss Topography of Kliiva and Bokhara, at its meetings during the months of April and May.

Carlist operations are undertaken on a large scale in the North of Spain. They captured the town of Berga, set it on fire and burned it, on the 23th ult. They are headed by a priest, the cure of Santa Cruz. On the 16th ult. a detachment of Government troops were attacked under the heights of San Hippolite in Catalonia about fifty miles north of Barcetona, defeated and compelled to make a precipitated retreat leaving many dead and wounded in the Carlists hands. All the custom Houses on the French frontier have been seized and fortified, and the army is expected to pronounce in favor of a Monarchy. but whether Don Carlos or Alphonse will be their choice, it is not yet decided.

A Spanish Vice Consul, charged with embezzling public funds was arrested at Paris and sent to Madrid. The agitation throughout the country is intense, especially in the large towns. Considerable detachments of people from Madrid and other cities have joined the Carlists.

The empire of the Kaiser is not without its troubles, social and political, the greatest whereof is that of the Ultramontane contest and the smaller what follows.

A despatch from Bresden says the printers' strike in that city has terminated.

Italian affairs do not appear to be obstructed or deranged, by the pretensions of the Papacy, beyond the poverty indicated

to a new political combination or organization, the country seems to be generally prosperous and contented. The drawback will be removed as a strong and stable Government develop its resources.

A letter in the *New York World*, dated Portland, Oregon, March 5th, says : "The community of Portland was shocked last evening by hearing that the mail steamer *George S. Wright*, plying between this port and Sitka, had been wrecked and all on board lost. For the last four weeks the most painful suspense has reigned over the city relative to her fate, but it was only yesterday that the news was telegraphed from Victoria, British Columbia, that she was lost and that no traces of her passengers or crew were to be found. The news was brought to the above city by a party of Bella Coola Indians, who found a plank bearing the names of the steamer drifting along the shore. They searched the main land to try and discover some traces of human life, hoping that some persons were saved ; but after continuing their search for five days they relinquished it, having found nothing but a bunch of hair, belonging apparently, to the chignon of a lady. The passengers aboard are not known, nor will they be until the return of the steamer sent north in quest of the lost one. It is estimated that there were twenty-three persons in all on board the ill-fated ship, several of whom occupied high social positions. The most prominent were Major John S. Waker, paymaster on the staff of General Canby, commanding the Department of the Columbia, and his young and lovely bride. Major Walker went to Sitka on the last trip of the steamer to pay the troops in Alaska, and was expected to return on the next; and as his wife was the only lady passenger aboard, it is supposed that the chignon found belonged to her. Their loss is deeply mourned in Portland. George A. Eades, the collector of the port of Sitka, is also supposed to have been aboard."

Jacksonville, Florida, advices report apprehensions of more trouble and further assassination in Columbia county. The refugees are returning to Lake City well armed.

GENERAL ORDERS,
BY HIS ROYAL HIGHNESS,
THE FIELD MARSHALL COMMANDING
IN CHIEF.

1st DECEMBER, 1872.

G.O. 96—DRESS OF OFFICERS.

(Specially Issued, 13th November, 1872.)

Paragraphs 586 to 594 of the Queen's Regulations and Orders for the Army are hereby cancelled, and the following revised rules will be substituted instead:—

I. DRESS OF OFFICERS.

1. Detailed descriptions of the dress, prescribed by Her Majesty for the officers of the army, are contained in the "Dress Regulations," copies of which are furnished, for information and guidance, to general officers commanding, and to commanding officers of corps.
2. Sealed patterns of buttons, lace, embroidery, collars, badges, devices, and horse furniture and appointments are deposited, for reference and guidance, at the Horse Guards, War Office, and commanding officers are strictly forbidden to introduce or sanction any unauthorized embroidery, ornament, or the addition to or increase in the width of lace, or other deviation from the approved patterns. A book containing sealed patterns of officers' lace, collar and forage-cap badges and numbers, is furnished to every Infantry corps in the service, and is to be produced before the general officer at each half-yearly inspection.
3. The rank of officers in the army is indicated by the lace and badges on their cuffs, collars, &c., &c., as laid down in the "Dress Regulations."
4. All regimental badges and devices and other peculiar distinctions which may have been granted under special authority to different corps, as enumerated in the "Dress Regulations," are to be strictly preserved.
5. On all occasions on which the Sovereign is present officers are to appear in full dress uniform with the riband of any order or decoration over the coat. Such riband is not, however, to be worn in undress uniform.
6. Miniature orders and medals, or ribands only, are to be worn by officers in undress uniform.
7. Officers are to wear their prescribed uniform in camp and quarters while on duty; but it is left to the discretion of general officers commanding to permit the use of plain clothes for the purpose of recreation. Officers will appear in full dress uniform when attending public balls or entertainments within the district in which they are quartered.
8. Officers on leave from regiments on foreign service, are always to be in possession of their uniform; otherwise, if detailed for duty in this country, or on the return voyage, they will be required to provide themselves with a fresh outfit.
9. Officers in uniform, when in mourning or attending funerals, are to wear a band of black crepe round the left arm above the elbow, and no other sign of mourning is to be worn at any time by officers in uniform, unless specially ordered.
10. Brevet field officers, doing duty with their regiments as captains, are to wear uniform according to their rank in the army; in the Infantry, however, such officers will

not wear spurs on parade, except when performing duty as field officers

11. Medical officers having the relative rank of field officers are to provide themselves with chargers and horse furniture, and to appear mounted when required to attend parades.

12. The scarlet patrol-jacket is to be worn at drill, and on parade when the men are dressed in frocks.

The blue patrol-jacket may be worn on regimental boards and on fatigue, stable or orderly duties but not on parade. Officers of line regiments are not obliged to provide themselves with blue patrol jackets, but may wear the scarlet patrol jacket on occasions when the blue patrol jacket is authorized to be worn.

13. Pantaloon and high boots are to be worn on all mounted duties by Cavalry and by mounted officers but not in review order by officers of the staff, Artillery, Engineers, and Foot Guards.

14. On dismounted duties generally, trousers are to be worn. Stable-jackets with shoulder belts and swords will be worn in barracks at inspections and on orderly duty.

15. The following general rules are to be observed as to the manner and times of wearing certain articles of uniform, viz:—

- a. The sash is to be worn (over the sword belt with the tunic, and with the scarlet patrol jacket, when the chaco is worn.
- b. The shoulder belt with pouch is to be worn diagonally over the left shoulder, by officers of mounted corps on duty or on parade. The staff will wear it in undress on duty and parade only.
- c. The sword belt will be worn as follows, viz:—

Over the tunic by field marshals, general officers, and colonels of the staff; personal staff of the Sovereign and Royal Family. Officers of all arms (except as below mentioned).
Under the tunic by general staff, personal staff of general officers, and officers of Lancers, Hussars, and of Rifle regiments.

Over the blue frock coat and under all jackets, except the Infantry scarlet patrol jacket when worn with the chaco.

- d. When the sword belt is worn over the tunic or frock coat and the sword is hooked up, the edge must be turned to the rear, and the back of the sword to the front. Swords to be hooked up during parade. Sword knots to be twisted round the hilt.
- e. When officers dismounted draw their swords, the scabbards are to be hooked up by officers who wear the waist belt over the tunic or frock coat as laid down in "c," but carried in the left hand by all other officers.
- f. The sabretache to be worn on mounted duties only, except by Hussars and Horse Artillery, who wear it on all occasions when the sword is worn. In the field the sabretache may be attached to the saddle.
- g. Steel spurs, both fixed and with straps and buckles, are to be worn with the Wellington and high boot respectively by all mounted officers, except those entitled to wear brass scabbard, who will have brass spurs. Dress spurs (of brass) are to be worn by all mounted officers,—except adjutants and musketry instructors of Infantry and

officers of rifle regiments,—at levées and in evening dress.

- h. Whenever spurs are worn with trousers, straps are to be worn also.
- i. The sleeves of the tunic and jacket are not to be of excessive width.
- k. Watch-chains and trinkets are not to be worn outside the tunic or jacket.

16. The following orders of dress, for parade and otherwise, are to be observed by officers:—

a. *Review Order*; to be worn when the Sovereign is present, for Royal escorts and guards of honour, at all State ceremonies, and otherwise when specially ordered.

	Officers' Dress.	Horse Furniture for Mounted Officers.
Staff	Full dress; as laid down in the "Dress Regulations of the Army."	Complete equipment; as laid down in the "Dress Regulations of the Army."
Cavalry	do do but with cloaks and capes.	do do (including shabraque) but without valise.
Artillery	do do but with cloaks and capes.	do do but without valise.
Engineers	Full dress; as laid down in the "Dress Regulations."	Complete equipment; R.E. Train same as Cavalry.
Infantry	Full dress; as laid down in the "Dress Regulations."	Complete equipment.

b. *Marching Order*; to be worn on the line of march, at route marching, in the field, and on other occasions when specially ordered.

	Officers' Dress.	Horse Furniture For Mounted Officers.
Staff	Undress: as laid down in the "Dress Regulations" but with cocked hats & shoulder belts	Complete equipment but without saddle-cloth; and for general officers, undress wallets.
Cavalry	Same as in "review order," but with undress belts, sword knot & sabretache. [See also par. 27.]	Complete equipment (including valise) but with undress lamb-skins or tiger-skin. No shabraque.
Artillery	Same as in "review order" but with pantaloons and high boots, undress belts, pouch and sabretache. [See par. 31 c.]	do do
Engineers	Same as in "review order," except sword knot. Pantaloons and boots for mounted officers.	Complete equipment, but without saddle-cloth: R.E. Train same as cavalry.
Infantry	Same as in "review order," but with scarlet patrol jacket instead of tunics.	Complete equipment, but without saddle-cloth

c. Field day Order; to be used generally for summer field days, divisional and brigade drills, by garrison orderlies, mounted patrols, police in camp and garrison, and on other occasions when specially ordered.

	Officers' Dress.	Horse Furniture for Mounted Officers.
Staff.....	same as "Marching Order."	same as "Marching Order."
Cavalry...	same as "Marching Order," but with cloak capes only. [See also para. 27.]	same as "Marching Order," but without valises.
Artillery..	same as "Marching Order," but with cloak capes only. [See para. 31c.]	same as "Marching Order," but without valises.
Engineers.	same as "Marching Order."	same as "Marching Order."
Infantry..	same as "Marching Order."	same as "Marching Order."

d. Drill Order; to be used at ordinary drills and in riding schools.

	Officers' Dress.	Horse Furniture for Mounted Officers.
Staff.....	Blue frock coat and forage-cap with pouch and shoulder-belt.	Saddle and bridle complete, with valises (bear-skin cover for staff and Infantry).
Cavalry...	Undress (stable jacket); as laid down in "Dress Regulations."	do do
Artillery..	do do	do do
Engineers.	Undress (patrol jacket). Shell jacket and pouch-belt for officers of R.E. Train.	do do
Infantry..	Undress (scarlet patrol-jacket).	do do

e. Mess Order; to be worn at mess on all ordinary occasions when not on duty.

	Officers' Dress.
Staff.....	Shell jacket, waistcoat, dress trousers and spurs.
Cavalry...	Stable jacket, waistcoat, dress trousers, and brass spurs.
Artillery..	do do do
Engineers.	do do do
Infantry...	Shell-jacket, waistcoat, and red stripe trousers.

Officers who wear mess waistcoats open in front will wear white collars and black neckties. Officers on duty will wear the jacket hooked or buttoned up at mess, and will wear swords.

Staff.

17. General officers who are colonels of regiments may wear the uniform of their regiments, with General Officers' sash in the Infantry.

18. The Staff, when in full dress, are always to wear trousers with gold lace stripes. Tantalons and high boots are only to be worn by the staff with the blue frock coat.

19. Officers who are no longer on the staff are not entitled to appear in staff uniform, except when temporarily performing staff duty.

20. Brigadiers temporarily appointed may wear the uniform and appointments of the regiment or corps to which they belong, both dress and undress, with the cocked hat, sash and forage cap of a general officer. They are at liberty, however, to wear the uniform and appointments complete, as laid down for a brigadier general.

21. When Garrison appointments are of a temporary nature, the officers holding them are permitted to wear their regimental uniform.

Cavalry.

22. The blue frock coat may be worn at boards, fatigue and stable duties, but not on orderly duty or on parade.

23. Officers of Dragoon Guards, Dragoons and Lancers are permitted to wear plain black leather sabretaches on all parades and duties.

24. Gauntlets are only to be worn on mounted parades, with tunics. (On all dismounted parades, and on barrack guard, short gloves will be worn.)

25. In Lancer regiments, the lappels of the tunic are to be worn buttoned back, except in marching order or in bad weather.

26. Medical Officers of Cavalry regiments, in which the officers have dress and undress belts, are to wear their dress belts on full dress parades when the other officers wear gold belts. On other occasions they will wear undress belts. In regiments in which gold belts only are worn by the officers, medical officers are to wear dress belts at all times.

27. Helmet plumes may be dispensed with by officers of Dragoon Guards and Dragoons on the line of march and at regimental drill; but they are always to be worn at inspections and field days, on which occasions, in Lancer regiments also, the caps are to be uncovered and plumed.

The throat ornaments on officers' bridles in Hussar regiments are always to be worn with the bridles.

28. Officers are to carry valises on all occasions when they are carried by the troops. Acting Staff officers will, however, only carry them when they are required for actual use.

Artillery.

29. Colonels on the staff and regimental colonels in command of field and garrison brigades are to wear cocked hats with undress uniform and dress appointments, when the staff appears in blue frock coats.

30. Other Artillery officers on the staff are to wear the dress prescribed for staff officers generally, except that, if employed on the staff of the Artillery, the colour of the coat is to be blue, with scarlet collar and cuffs. They are also to wear the Artillery dress appointments, with peak to forage cap.

31. The following general rules are also to

be observed by Artillery officers in wearing various articles of dress:—

a. No officer below the rank of regimental colonel to wear a frock coat.

b. In field and garrison brigades the sabretache is worn by mounted officers only.

c. The caps may be worn separately, and when rolled for marching order will be laid on the top of the cloak.

d. Majors of garrison batteries, when dismounted on parade, are not to wear spurs or sabretaches.

e. Busby plumes to be worn as laid down in par. 27.

Engineers.

32. On parades when the staff wears the blue frock coat, all officers will appear in "marching order," except that regimental field officers not doing duty with companies or battalions, will wear the frock coat, with cocked hat. When the staff wears the red tunic, officers will appear in "review order." Leather leggings will be worn as in Infantry.

Infantry.

33. The dress sash, trousers and sword belt are appointed to be worn at levées, drawing rooms, balls, &c., only, and not on any parade, unless specially ordered.

34. An oil-skin cover is permitted to be worn in bad weather, both with the dress cap and the forage cap.

35. Leather leggings are to be worn by dismounted officers of Infantry on all occasions when the men parade in them.

Control Department and Army Service Corps.

The Control Department is to follow the orders of dress for the staff generally. The transport branch of the Army Service Corps is to follow the orders of dress for Artillery, wearing patrol jackets in place of stable jackets; the supply branch, those for Infantry. [See par. 16.]

MODERN WAR.—REMARKS OF ABLE OFFICERS.

SUB-LIEUT. HUBERTUS.

(Continued from Page 149.)

The greater distance that the view is unbroken over the ground, the more numerous will be the patrols which will be required to be sent forward; and in this case they will require a support of their own arm.

The artillery should be accustomed to act in masses, or to take up extended positions according to the ground, and nothing can be less effective, pretty as it is, than a line of Infantry with its batteries all ticked off, gun by gun in line firing right in front. The real power of this mighty arm is most seen in concentration of fire, and in the combination of numerous batteries on a decisive point or two in the field.

If it was wished to open the battle in earnest, no time was lost by the Germans in deploying a strong force of Artillery, which generally took part in a connected line at the distance of from 2,000 to 3,000 paces, endeavoring by its fire to cover the further deployment of the main body and to shake the enemy. The division artillery, and the greatest part of the corps Artillery, of the army corps engaged, were usually employed for this purpose. The Artillery secret had again been discovered, and the arm had become conscious of its strength. The German artillery was employed on the largest scale in this manner at Gravelotte at Sedan.

Long lines of guns kept up a fearful fire upon the French positions, shattered their formations, and silenced their batteries. We see the French Artillery, utterly unmindful of old Napoleonic traditions in general, not bringing forward sufficient force to meet the massive army of German cannon. We observe no particular cohesion in its formations and manoeuvres. They worked generally by single batteries, rarely were they able to form a line of guns equal to the Germans in extent.

The Artillery being the arm which can damage an opponent at a distance, its mass must therefore come into operation before the weight of the infantry is pushed into the fight. The Artillery should never be placed too far back in the column of march, it belongs rather to the front. In the situations in war on a large scale, individual batteries cannot manoeuvre of their own accord, as frequently happens in small detachment exercises. Where 12,000 infantry are striving to attain one object, the Artillery distributed to them should not seek to act on their own account, but on the contrary it should contribute to the attainment of that object with its united power, which is possible only, when the batteries do not act independently, but obey one will.

In war on a large scale, employing the batteries in a mass is the rule; their isolated employment is the exception. This principle must be rather the more maintained, inasmuch as the actuality frequently renders the exception necessary.

In all cases the Artillery of the advanced guard comes first into action and has to keep up its fire for the greatest length of time; and therefore every officer in command would, without doubt, prefer to employ the battery which carried the greatest number of rounds, and that is the 4-pounder battery.

To give a special escort to the Artillery on the line of march is wholly superfluous, since it is in direct communication with the other arms, divisions marching directly in front and in rear of it.

Infantry should not think the protection they get from guns is to be measured by their close proximity, and should not feel they were abandoned when the guns move off to better positions.

Detaching guns from a battery must be considered as altogether exceptional, the rule being to keep the whole together; in open level ground the battery of the advanced guard should always march united.

The German Infantry knows how to adopt itself quickly and safely to all possible positions, because it not only manoeuvres on sound principles, but because it is accustomed to act according to the circumstances and situation of the moment.

To obtain the results of arms of precision, the old order of the German battle was modified in an extreme degree—battalions were formed into smaller units, stiff lines and columns were almost given up, and infantry were trained to break into dense swarms of skirmishers as much as possible, to take any advantage of cover, and to manoeuvre rapidly upon the field; while attention was paid to improve their fire, and to make them steady and self-reliant. Most properly, too, though modern small were known greatly to favor the defence, the vicious principle was carefully eschewed of trusting to a passive defensive; and it was sought to overcome the difficulties of attack by quickness of movement, by sureness of aim, by making use of local accidents of the ground, and by combining in all instances an advance on the flank with advance in

front, so as to harass and perplex the enemy.

The German line, as it advanced to attack, prevented formations of eager skirmishers who made use of every accident of the ground to conceal themselves and close with the foe, and maintained a deadly and continuous fire, though in loose order at a near range; and it always overlapped and outflanked the French, twisting round them in a destructive coil as they vainly endeavored to stop its approach.

The loose order of widespread skirmishing which characterizes the infantry tactics of this day has been compared to "the battles of savages", and it has been supposed that the effects of discipline and of acting in concert would be less important at the present day than in past times. The contrary, however, is the case; experience has shown that long training is required to make use of modern small arms; that the advantage of union and combined practice is just as marked whether men fight in thin formations or in dense masses; and that the difference between raw and disciplined armies is at least as great as it was of old.

The German line of skirmishers approached the enemy by a succession of rushes. This was either done by taking advantage of cover or else they would advance 100 paces at a run, throw themselves down, and then run on again. Much address was displayed in this manoeuvre. Although the Germans were frequently obliged to make front attacks, the principle of the turning movement always asserted itself. So fearful are now the effects of fire that direct attacks present many difficulties, and therefore demand so much attention as to give the adversary leisure to reinforce the threatened part of his line. Thus turning tactics are fully justified.

[To be Concluded in our next]

REVIEWS.

The *Aldine* for April will be eagerly sought after by the lovers of the beautiful in art and literature. The Illustrations are:—

The Strange Dog (Tint); Tower Creek, below the Falls; Death Warrant of Mary Stuart; Hot Springs on Gardiner's River; Yellowstone Lake; Cliff in the Grand Canon; Tower Falls and Colman Mountain; "I Come from the haunts of coot and hern;" A Rare Chance; A Catskill Brook; The Peacock complaining to Juno; Spring Flowers; "O Pray, my Child;" Deserted Church in Volkmanrode.

Contents:—I will if you will; A Gazel of Hafiz; The Yellowstone Region; Malbone the Miniature Painter; The Ball on the Ice; A Rare Chance; Death Warrant of Mary Stuart; Four Seasons; Madame Jeannette's Papers; A Catskill Brook; O Pray, my Child; The Peacock's Complaint; Margret, Duchess of Newcastle; An Old German Tribunal in the Harz Mountains; Music; Art; Literature. Subscription price \$5 00 including Chromos, "Village Bello," and "Crossing the Moor," James Sutton & Co., publishers, 53 Maiden Lane, New York.

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.

Quebec, March 20th, 1873.

DEAR SIR,—The columns of the REVIEW being open to communications from all Volunteers, I gladly avail myself of the valuable privilege and hope you will kindly insert the following as it must certainly meet the views of many that are connected with the force:—

The position for firing at the short ranges, namely, 100, 200, and 300 yards, as laid down in the Regulations, is standing, from the shoulder, with the left arm outstretched so that the little finger will be in advance of the projection of the lockplate, and other minor motions which serve to constrain the body, and deter those accustomed to other positions, from making anything like accurate shooting, of course it looks better on a parade ground where men are going through the platoon exercise, or a holiday discharge of blank cartridge, to have an uniform way of doing so; but when at target practice, or worse, when in the field, why must it be obligatory, for all to keep this practice, when better shooting could be made by those who have been used to other ways, or who would soon adopt one for themselves? Being allowed to do so I have at actual practice tried those different positions and at the regular position, made just 20 per cent less than the two others, the principal feature in these two positions is that of holding the rifle nearer the trigger guard and resting the left arm down to the elbow against the left breast, and these I often see are the favorite positions of old riflemen, though the new volunteer and of course others would again discover other methods, better suited to them, by which they could make just as rapid and a much more effective firing.

It may be argued that these positions are unsuited for reloading quickly, as the rifle has to be held while ejecting the old cartridge case and placing in the new one, by the left hand in rear of the lower band, but this difficulty is one easily overcome by merely slipping the hand along the wood whilst lowering it to the loading position, and should not on account of that and the appearance stand in the way of the more serious difficulty of throwing away the shot altogether.

If this rule of enforcing men to fire all from one position could be done away with, it would be one more point gained in the most important question of making good shooting, and I think the different positions chosen by the crack-shots at the long ranges is pretty conclusive evidence, that at the short ranges also, men would choose positions better suited to them. As it is, long armed men may frequently be seen resting their elbows on the left breast, and still following the technical points of keep-

ing the little finger clear of the lock plate, &c., but a short armed man cannot bone-fit himself in this way without holding the rifle nearer to the guard.

Apologizing for taking up so much of your valuable time and hoping you will see fit to insert this.

I remain yours obediently,
PRIVATE, 8th Batt.

Our correspondent has done good service in noticing this matter, his remarks are quite correct in firing from the shoulder, we always make the best score from the trigger guard.—ED. VOL. REV.

To the Editor of the VOLUNTEER REVIEW.

SIR,—The letter in your last, signed "Shrapnel," has, no doubt, found many attentive readers among the subscribers to your valuable journal, not only in the officers interested; but in all those of the volunteer force, and, I am sure, they are many, who are lovers of fair play.

With your permission, I will call your attention to a few more reasons why the recommendation of the Inspector of Artillery as to the rank of officers commanding Field Batteries, and the establishment of the Batteries should be carried out.

It is not necessary for me to reiterate the remarks of "Shrapnel" as to the difference in the responsibility upon the shoulders of a Commissioned Officer of a Field Battery and of a company of infantry. Suffice it to say, that the one has four sub-divisions, each of which, according to G.O. ranks as a company, so that our own orders acknowledge the Battery as a battalion of four companies, while the other has only his one company of 55 men, their arms, &c., under his charge.

A battalion of four companies under our orders, is entitled to a major in command.

The C.O. of a Battery is required to hold a "first class" certificate in his particular arm. A class which no captain in any other arm is required to hold, and one which qualifies him as a field officer in any other arm, while he is tied down to a captaincy without a hope of a rise for five years, when he will get his brevet of major without any of the advantages of the rank. Moreover, when he gets his brevet, he may, nay will, find that men who entered the service long after him are his seniors, and take command of him, having risen in rank by succession to those who have retired. Of course, such a thing may happen to an officer in any battalion, but then he can rise if he is qualified, and often provisionally if he is not, and a vacancy occurs, while the vacancy never can occur again in the artillery.

Worse than all, if the orders respecting the qualification of officers of artillery are carried out strictly, as I hope for the good of that arm, to which I belong myself, they will be, Commanding Officers of Batteries holding "first class" certificates will find themselves outranked by Majors provis-

ionally appointed and without any of the qualifications required by the act.

Is it not then, fair and proper that those officers should receive the rank which the extent of their command, and their qualifications would entitle them to if in the infantry or cavalry?

In my opinion the officer second in command should have, as he has in the R.A., the rank of captain.

The establishment in N. C. O's. and men is too small as may be seen from the state of a R. A. Field Battery and a V. A. Field Battery, as given in your last, and from the following figures:

Establishment N. C. O's gunners, drivers 74
Staff Sergeants and Trumpeter 4

Leaving to man guns, drive, &c., 70

9 N. C. O's. and gunners per gun 36

5 " drivers " 20

5 " " cart and forge. 5

4 " men on guard, the smallest number 4

65

—

Leaving but five men to do all other necessary duty, and no men coming off guard off parade.

In the artillery every man has his peculiar duties to do, and though it is expedient and necessary to learn to work with reduced numbers, it is not expedient to be obliged to do so at all times, or take men on parade who are entitled to remain off.

The proposed change effects all ranks, and will lighten their work, and the members of the Artillery owe their thanks to their Inspector for having brought the matter before the authorities at first, and now to "Shrapnel" for reviving the subject. One would think that such a report, coming from the source it did, would have been acted upon long ago.

Trusting that you will pardon my asking you for so much space,
I remain,
Yours truly,
V. A.

MONTREAL.

(FROM OUR OWN CORRESPONDENT.)

The following cadets obtained certificates on Saturday last, 29th ult.

1st Class. Joseph L. Rutier and Ozais Rutier Prescott.

2nd Class: Henry Jenkins, Ottawa; Paul P. Demaray, Bertier; Zepharo Jublault, Montreal; Isaac Jeckell, Argenteuil, Capt. John Charles Chamberlain, Hazubazua County, Ottawa; Captain Edward William Mudge, 1st or Prince of Wales Rifles, Montreal.

Lieutenant Elliott of No. 2 G.T.R. Brigade, has been presented, on the occasion of his retirement from the corps, with a handsome

gold watch-chain; the joint offering of the officers, non-commissioned officers, and men.

The Prince of Wales Rifles is a highly efficient and respectable corps. Their organization is as complete as that of any regiment we have got, and their Colonel, Bond, is a meritorious and painstaking officer, and no one will deny but that he is a true gentleman. Unfortunately, Major Robinson and the gallant colonel do not pull well together and the Major has had other than mere hints that his resignation would be acceptable, but the Major declines to be forced out, and the consequence is there is open war.

Some time ago Major Robinson was up before a Court of Enquiry, relative to commissariat matters during last camp, and after due deliberation was acquitted, the Major's honor remained unimpeachable. However, it savours much of a spirit of vindictiveness to learn that the Major is again to be brought up to answer to a charge of conduct unbecoming in an officer during the camp of last year. If the Major was guilty of such at the time stated, why was it not ventilated before? It is a bad precedent to establish, and if an officer can be hauled up on charges overlooked for a year, or years, why where is it going to end? We have all done something in our lives that we are ashamed of, is it to be brought up at any time to gratify malice or spite? are we to exist on suffrage with the sword of Damocles hanging over our heads? If the Prince of Wales' Rifles have dirty linen to wash, let it be done at home, and not parade their disagreements before the eyes of the unsympathising public. It is evident the Major is in a bad place, and if he can vindicate himself, and stick there, then the colonel and he had better shake hands and be friends for the future.

Snow disappearing rapidly. B.

Her Majesty held her first Drawing-room this season at Buckingham Palace on the 14th March. The bodyguard of the corps of Gentlemen-at-Arms was on duty in the State saloons. The royal bodyguard of the Yeomen of the Guard was also on duty under the command of the Duke of St. Albans. The household troops, with their State bands, were mounted in the plateau, and played a selection of music during the afternoon. Her Majesty was accompanied by their Royal Highnesses Prince and Princess of Wales, Princess Beatrice, Princess Louise, Princess Christian, the Duchess of Teck, Duchess of Cambridge, Duke of Edinburgh, Duke of Cambridge, and other members of the royal family.

A waterspout burst near Bakersfield, California, on Sunday, and formed a chasm sixty feet across and fifteen feet deep. A party of men narrowly escaped the falling water completely drenching them.

Threatening letters are said to have been received by the English and French ministers at Madrid from the internationalists.

A Panama despatch says the practicability of ship canals through Nicaragua has been settled by the labors of the present United States surveying party.

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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, APRIL 8, 1873.

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

The report of the meeting of the Dominion Rifle Association on the 27th ult. reached us too late for any comment on its proceedings. It was greatly to be regretted that Major Worsley’s report, relative to the doings of the Wimbledon Team was not laid before the Association, and it is a most serious cause of regret that the decision of sending no more teams of *Canadian Militia* to Wimbledon has been arrived at.

Lieut. Colonel Gzowski, the President of the Dominion Rifle Association deserves the thanks of the country for his steady support

of that institution; but we must differ in opinion with him and the majority of the Council by whose votes the Report was adopted as to what ought to be the ultimate object for which it was established. If its efforts are solely directed to send to England a team of amateur riflemen, young gentlemen with plenty of leisure time and a desire to see the world, the Institution will not be of any particular value to Canada. As it is of far more consequence to train soldiers, men who will, and must serve in case of necessity, than to furnish pleasure excursions to clever tourists.

The experience gained by the first team was so conclusive that in order to prevent the irregularities committed on that occasion, Lieut. Col. Gzowski proposed to send home a detachment of Canadian soldiers to represent the Riflemen of the Dominion. Under a careful and experienced officer this experiment was a decided and splendid success. It did more to raise the prestige of Canada in England than a dozen industrial exhibitions, and we may well ask now the reason why an arrangement so fraught with good to every interest of the country should be so hastily abandoned. We looked forward to the meeting of the Dominion Rifle Association, and the report of its Council, as to the period when a large and liberal policy should be developed. That a recommendation to send at least fifty five of the best marksmen of the Dominion (those who had been on either of the two expeditions excepted) to Wimbledon this year, and we expected that when such a gathering of officers met the advisability of sending home a brigade to take part in the Autumn Manœuvres, would be considered. Instead of all this, we have the expressed desire of the Association to put itself outside the authority of military discipline, and carry on its future efforts by encouraging mere amateur rifle practice alone. The course followed is decidedly impolitic, because it deprives the Canadian Army of what would, under the energetic management of the Association, have been the best and most effective incentive to exertion.

In our issue of the 1st inst. there is a correspondence having reference to a team to compete at the Rifle Match of the New York National Rifle Association, which is to come off in May. Even in this case a detachment of Canadian soldiers as such, should be sent there; and it should not be left to the enterprise of individuals to organize those teams, as the end will be that it will have a tendency to loosen the bonds of discipline, by engendering a total disregard for authority.

If an officer in the service will be compelled to undertake the task of organizing a team for one of those matches, he will feel that he owes authority nothing. That he can dispense with it, and is not responsible for any little irregularity which may occur,

nor need he give any satisfaction about it, if it is of such a complexion as to affect his own character, or the honor of the country, and this is the most dangerous of all feelings that can be established in the mind of a soldier. It is of the utmost importance to the interests of Canada that she should appear to advantage, especially as regards her military organization, to her neighbors. It is not necessary to point out how little likely that is to be the case if irregularities are permitted in the composition of detachments for what is after all foreign service.

We fear the Council of the Dominion Rifle Association has committed a greivous mistake in relinquishing the great advantages of military Control over the detachment it sends out, and that it will be found to impede, instead of advance the interests proposed to be conserved, the reasons on which the resolution arrived at was founded would be of great interest to the people of Canada, and it is to be hoped the Council will publish them.

The *battle of the guns* is still undecided. *Broad Arrow* of the 15th March has the following on *rotating projectiles*. As we have pointed out, the *theory of pressure* in the force that gives initial velocity to the shot has misled the designers of the monster artillery—the velocity is communicated by a blow directly or nearly so, in the line of the horizontal axis of the shot, the change to rotation being due not to the impact, but to the friction of the spiral grooves; and this brings up the whole question of the mechanical application of surfaces of hard metal which we pointed out as the real difficulty to be overcome.

One of the advocates of the rifled theory, illustrates the motion sought to be imparted to the shot in the groove by the *blow* on its greatest diameter, by the familiar operation of setting a boy’s whipping top in motion, but in this case the initial force is applied specially at the sides, and when they can effect that with elongated bolts in modern artillery the whole problem will be solved. The illustration however is singularly good.

Captain Noble, F. R. S. (late Royal Artillery), has a very clever mathematical paper in the current number of the *Philosophical Magazine*, on “The Pressure required to give Rotation to Rifled Projectiles,” in which he demonstrates this force to be “only a small fraction of that required to give translation.” He shows too that the increase of bursting force of gaseous pressure due to rifling is “quite insignificant. He endeavors to prove that, in the case of studs acting in uniform spirals, this “small fraction” amounts to about 2½ per cent. of the pressure required to give translation to the shot, whilst in the increasing spiral the fraction is about half this quantity. Similarly, having demonstrated that the increment of powder pressure due to any rifling is “quite insignificant,” he shows that this insignificance is most mark-

ed on the part of the increasing spiral, as that spiral gives $\cdot 12$ of a ton per square inch less pressure in an 18 ton gun, with 400lb. shot and 85lb. P. charge, than a uniform spiral when the bursting pressure is 19.7 tons per square inch. These results are so charming that we are reluctant to disturb them. But truth requires that we should point out against this mathematical decrement of $\cdot 12$ of a ton powder pressure, an increment of nearly 40 tons per square inch due exclusively to oscillations of the shot around the stud. Thus the Committee on Explosives report that 87½ lbs. P. charge in this same 10-inch 18-ton gun varied in pressure from 25 tons to 63.4 tons on the square inch, and Captain Noble quotes 19.7 tons as the pressure registered with 85 lbs. P. whilst 60 lbs. R. L. G. gave, in the same gun, 36½ tons to 57.8 tons pressure on the square inch. And in both cases the greater explosive force resulted in the smaller velocity of the 400lb. shot. As this is solely due to the stud, Captain Noble should place this loss against the $\cdot 12$ of a ton gain.

Again, Captain Noble speaks of the "pressure" required to give rotation. The force so-called originates in a blow and not in a mechanical pressure at all. The lower rear stud, when in its seat touches the "loading" side of the groove, and as the shot moves outwards the stud is brought into contact with the "driving" side. The distance through which the shot has moved before the stud makes contact on the "driving" side, is the measure of the blow. Now this distance is, on the stud system, about six to eight inches in the increasing spiral, and about one inch in the uniform twist. In other words, the shot attains one-third of its velocity before the increasing spiral brings the stud into "driving" contact. To prove that the shock is not "a small fraction," we would refer to the diagram of the interior of the late "Woolwich Infant" recently published in *Iron*. This violent blow is concentrated upon one inch in the groove, and always occurs near the same spot. The blow in the uniform spiral arises from a velocity about one-seventeenth the maximum speed of the shot with P charges. Moreover, by substituting a long bearing in the groove, as can be done, for the stud, the shock from this one seventeenth of the velocity can be distributed over a distance coinciding with the whole cylindrical length of the shot, preventing a very serious local action. With the stud, other shocks occur along the bore which we need not now notice.

Much as we admire Captain Noble's very neat mathematical formulas, we cannot but regret that they are, in the present instance, based on such mechanical errors as vitiate their conclusions in every point. If he would study the mechanical force actually in operation within an actual gun, and would then apply his great mathematical knowledge to deciphering existing forces, Captain Noble is quite capable of conferring great advantages on the country and great honor upon himself.

An article from the *London Engineer* on the Reports of the Navy Department of the United States will be found on another page, and it will describe the exact position that country occupies as a rival power, as well as the treachery and imbecility that permitted Great Britain to be bullied into such a disgraceful political blunder, as the Treaty of Washington and its consequences, as well

as the precedents for future complications which it has established.

How Englishmen with such official records before them, can be deluded into the belief that in any complications which may arise the United States could either injure or assist Great Britain or exert the slightest influences on the issues of the contest except to interfere diplomatically, is beyond the comprehension of men outside the influence of JOHN BRIGG'S vigorous Saxon harangues, or the witchery of GLADSTONE'S rhetoric, as both have combined to rob the English people of £3,200,000 sterling, to buy the forbearance of the dreaded Yankees, and defraud this country of its just rights and compensation for the same laudable purpose. We reprint the article from the *Engineer* for the purpose of drawing the attention of our readers to the amount of knowledge which is deemed sufficient to govern the British Empire, and how every principle of right, truth, and honor is sacrificed by the Whig-Radicals at the bidding of the manufacturing monopolists of England.

The main maritime defence of that country of which GLADSTONE and his colleagues are so much afraid is based on the *Torpedo*, and its value as an offensive or defensive weapon has been fully discussed in the pages of the *Volunteer Review*. Its latest phase however, can be seen by the following extract from the *United States Army and Navy Journal* of the 22nd March, as follows:—

"After the *Journal* of last week had gone to press we received a report in regard to the trial of the Lay torpedo at Newport on the 8th of March, which will show how accurate we were in the interpretation put upon the disingenuous report of the trial which was telegraphed to the *New York Times*. Our correspondent says: 'The trial referred to in the *Journal* of March 3 failed on account of the steering gear. The boat did not answer her port helm, and was stopped and towed back. On the 8th inst. another trial took place. The boat ran a mile and one fourth. After passing the turning boat it ran ashore, failing to answer the port helm as in the previous trial. This defect will be remedied, and I have no doubt that she will perform all that is required of her.' A *Newport* paper from which we have an extract, says of the torpedo on this trial:

"When launched it moved off in a beautiful manner, obeying at will its 'starboard' and 'port' as directed by the operator on shore. The trial however was not without its customary accident, but which was no fault of Mr. Lay or of the torpedo. The weather was very hazy, and it was impossible for the operator on shore to see her, and consequently she ran aground, and it is supposed that her cable was broken in coming in contact with the rocks. However the distance run was satisfactory, and had not this unavoidable accident happened, the Government would have been satisfied, and it would have accomplished what is claimed by Mr. Lay, viz., the running of two and one half miles and return. As it was she made the remarkable quick time of 12 minutes and 21 seconds as timed by Professor MOSES G. FARMER, the instructor of electricity at Goat Island. Lieutenant BRADFORD one of the board

had never entertained a doubt but that the torpedo was all and even more than was claimed for it by its inventor, and that he had not the least idea but that it would be accepted by the Government. He also said it is stated, when asked in relation to the many mishaps to the torpedo, that it was no fault of the torpedo, but it was owing to mismanagement on the part of Mr. Lay's agents while he was absent. A new cable will be immediately made, when another trial will occur."

In discussing the value of the *Torpedo* our readers will recollect that we stated one of our objections to be that most obvious of all, the danger to the connecting cables by its slack catching rocks, or being drawn so taut as to part in running out, and this is the very thing which has happened.

It would occupy more time than what we are inclined to waste on so profitless a subject, to calculate the value of a vessel whose motive power is only able to propel her at the rate of 8.45 feet per second, as an offensive engine against any modern war vessel whose average steam power is capable of propelling her at over double that rate; or to put the case more clearly an ironclad is opposite the *Torpedo Station* a mile off shore it will take the *Torpedo* ten minutes to accomplish that distance, the ironclad being able to accomplish two miles in the same time. The grave and knotty problem of the snail climbing up the Maypole in the day, and descending at night would furnish a key to the solution of the equally difficult one as to the time the *Torpedo* would catch the ship. And yet it is of people who seriously prepare to defend their coasts and maritime interests with such tools that the Manchester philosophers are afraid.

We have to thank Capt. and Adj. DAVID, of the 6th Battalion, for a copy of the prospectus of "The Rifle Association of New York, a plan of their Rifle Range at Creedmoor, Long Island, and a copy of the By-Laws of the Amateur Rifle Club of New York."

In our next issue we propose to publish the Prospectus of the National Rifle Association, deeming its expedient to give the soldiers of the Canadian Army every information connected with such an interesting subject, the more especially because one distinguished member of our force, Lieut.-Col. SCOBLES has been largely consulted, and all his suggestions and plans adopted by the New York Rifle Association.

The plan of the range is beautifully lithographed on a scale of 300 feet to the inch, showing twenty targets, and firing points from 100 to 1000 yards. The markers buttes are one half on SCOBLES plan—sunken—and one half on HILLS—raised. A pool target, and what will prove an object of great attraction, a *running man*. There appears to be ample camping ground, and the area including ranges, is 70 acres.

It appears that the object the Association

principally aims at is the improvement and training of the Militia or National Guard, as well as the soldiers of the army of the United States to the use of the rifle. Such a course, being highly commendable, as it is on the militia of the different states that the country must depend for its defence.

There can be no doubt but the promoters of this Association are engaged in a highly patriotic, useful, and laudable work. Arms of precision are worthless without the necessary skill to use them, nor will great proficiency in science and mechanical skill be available to supply the want of expert marksmen in the hour of trial. It is to be hoped that the Dominion Rifle Association will organize a team to contest at the coming matches in May. There can be no doubt of the value of those friendly military contests and expeditions. But it must be evident to any one who will take the trouble to think over the matter, that their distinctive military character must be preserved, and we trust that whether the Canadian team at the New York Wimbledon be organised by "The Dominion Rifle Association" or as far as appearances indicate by individual patriotism and exertion, it is to be hoped that this principle will be kept steadily in view and that no person should be allowed to join it without entering into a written agreement to submit to strict military control and discipline; in fact, to live and act like soldiers during the period they will be engaged, in those friendly trials of skill.

Our correspondent inquired as to the price of hotel living while in the States. We cannot answer the query satisfactorily, but in order to place it within the means of all, the better plan would be to organize the teams to live in camp during the whole time, and to proceed to Long Island as well as return by sea.

The details necessary to render an expedition of this kind pleasant and amusing to the parties engaged therein, must be left to the leaders, who will, if careful, make a great success reflect honor and credit upon themselves, and be of great advantage to this country, because men that know how to handle their arms will be always respected.

The tents, blankets, and camp equipage should be supplied by the Militia Department, and we have no doubt that on proper application even greater advantages would be accorded. The design of a Canadian team, and it should be numerically strong, commends itself as a move in the right direction, and should receive every encouragement as well as support.

The canal system of the United States affords facilities for the conveyance of the heavier articles of production in a country where only one-third of the population is engaged in manual industry. In the State of New York those outlets of commerce assume gigantic

proportions, and are thus described by the *New York Times*:

"Of the number of men and women who are engaged upon the State canals, and otherwise employed in connection with the trade carried over them, the general reader has only a faint conception. Even those who are familiar with the statistics of canal boat building, with the number in use during the season of canal navigation, and the number of persons required for the management and care of single craft, have but incomplete information of the whole number who depend upon the commerce of the canals for support. Nor is the aggregate length of the canals known to many even among those who are employed upon single lines. In the aggregate, the canals in the state of New York are eight hundred and thirty-four miles in length. The Erie extends from Buffalo to Albany, three hundred and fifty miles; the Chenango, from Binghamton to Utica, ninety-seven miles; the Genesee Valley, from Orleans to Rochester, 95 miles; a branch of the same from Genesee to Danville, twenty miles; the Black River, from Rome to Carthage, including a distance of forty-two miles by river, seventy-seven miles; the Chemung, from Elmira to Montezuma, including a distance of thirty-five miles through Seneca Lake, eighty miles; The St. Paul's, branch of the Erie, from Montezuma to Seneca Falls, thirty miles; and the Delaware and Hudson, from Honesdale, Penn., to a point on the Hudson River opposite Rhinebeck, about eighty-five miles of which are in the State of New York. These, in the season, are navigated by nearly 7,000 different boats, or on an average of eight boats to each mile of the canal. Of these boats the largest have each a carrying capacity for 225 tons of assorted cargo, or 2,000 barrels of flour, or 8,000 bushels of grain. The smaller boats have a carrying capacity of 125 tons, in proportion as indicated above. The average cost for the construction of the boats used is, for the larger, \$5,000, and for the smaller, about \$2,000. The average monthly cost of running, including tolls and towing, is about \$800 per boat, which, it will be seen, involves a very large capital for simply the running expenses of a season. The men nearly all complain of the manner in which the canals have been managed by the State authorities, and express the hope earnestly that the next Legislature will inaugurate a reform. They charge the great falling off in the canal trade upon the failures to keep the canals in proper order and the heavy tolls, by which, they declare, a vast business which now seeks railway and other conveyances has been driven away. They are anxious that the "West" should be induced to return to the canals with all its proper work, and they insist upon it that a proper system of repairs and charges would secure a return and large additional profit to the State. Soon after the opening of the Legislature attention will be called to the canal question and many reforms asked, by the adoption of which a large increase of trade will, it is supposed, be the result."

The following article from the *New York Sun* of the 22nd March, depicts so accurately the feelings of the great mass of the Canadian people on the question of a close political alliance with the United States, and describes so well the political institutions of the Model Republic, that we reproduce it for the benefit of our English readers. It is quite possible the *Times* and its masters may not insist to know the facts, but they exist nevertheless.

"Probably these political leaders at Washington and elsewhere who make a business of getting rich by means of their public positions, care very little about the effect which their corruption may produce upon the reputation of the United States in foreign countries, just as no pickpocket or burglar cares very little about the effect of his crimes upon his standing among the honest men of the community where he lives. And yet the good name of the country abroad is of some consequence.

A correspondent of the *Cincinnati Commercial*, who has recently been in Northern Minnesota, saw there a number of Canadian citizens from Manitoba, and asked one of them what he thought about annexation, and how he and his people would like to belong to the United States. "I don't want any of it in my time," he said abruptly. "Is that the general feeling?" "Yes; you cannot find one Canadian in twenty who would consent to annexation. If ever we join the United States, it will be at the point of the bayonet. Why, now we are freer than you are, and have not so much taxes to pay. You are taxed to death in your rotten Republic, and don't know it. Your Congressmen and officials at Washington steal more than what it takes to run our whole Government in Canada. Do you suppose that we outside people, knowing these things as well as we do, want to put our destinies under such a government? The theory of yours is good enough, I know; but corruption and imbecility have corroded it, until what you call the best Government the world ever saw has become the worst one.

"Not the least evil of the dishonesty, fraud, and contemp for principles which have taken possession of our rulers, is the well nigh fatal check given thereby to the progress of republican ideas and institutions of self government in other parts of the world. America, once the guiding star of humanity, is fast being made its warning and its abomination."

We publish this week General Orders of the British Army, of 1st December, 1872, referring to dress regulations, for the benefit of our military readers, and in order to show when the uniform can be worn with propriety. It is not often Canadian officers offend by sporting full dress on out of the way occasions. Indeed as a rule they are very chary of exhibiting their distinctive costume at all—but there is a breach of etiquette and propriety, in the negation of the rules in this case as well as in the abuse thereof. Both can be avoided by adopting the regulations pointed out in the General Orders.

In reply to numerous inquiries made by Volunteer officers respecting their uniforms the best answer that we can give is a reference to the Regulations regarding the subject. By the 215th article of the Regulations and orders for the Active Militia of the Dominion of Canada, adopted by the Governor General in Council, 4th March, 1870, under the authority of the 96th section of the 31st Vic. Chap. 40, (Militia Act,) published in the *Official Gazette*, 12th March, 1870, and subsequently submitted to Parliament within the first 30 days of the next session thereof, it is provided that "the uniform of the Militia is similar to that worn by the Regular Army, with the exception that in the Infantry, silver lace is substituted for gold—and the facings of Infantry corps clothed in scarlet are blue, those of Rifle corps, scarlet."

We are not aware of any further regulations having reference to the uniform of the officers of any Infantry Corps.

DOMINION OF CANADA.



MILITIA GENERAL ORDERS.

HEAD QUARTERS,

Ottawa, 4th April, 1873.

GENERAL ORDERS (7).

No. 1.

MILITIA STAFF.

Errata.—In G. O. (6), 28th March, 1873, read "Charles Frederick Houghton" instead of "George Frederick Houghton."

ACTIVE MILITA.

PROVINCE OF ONTARIO.

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

MEMO.—A short course of Instruction will commence at the School of Gunnery, Kingston, on 20th April, 1873. Officers, non-commissioned Officers or Gunners, desirous of joining for a three months' course of Instruction will forward their applications through the usual channels to the Commandant of the school.

There will be vacancies for three Officers and fourteen non commissioned Officers or Gunners.

Transport requisitions from Battery Head Quarters to the School of Gunnery, Kingston, will be furnished by District Staff Officers.

15th Battalion or "Argyle Light Infantry," Belleville.

No. 5 Company.

To be Lieutenant, provisionally:

Wesley Bullen, Gentleman, vice James H. Lister, left limits.

36th "Peel" Battalion of Infantry.

Major Arthur Nesbitt is hereby permitted to retire retaining rank.

47th Frontenac Battalion of Infantry.

To be Lieutenant-Colonels:

Major and Brevet Lieutenant Colonel Geo. Airey Kirkpatrick, M.S., vice Herchmer Hamilton, who is hereby permitted to retire, retaining rank.

77th "Wentworth" Battalion of Infantry.

No. 1 Company, Dundas.

To be Captain:

Lieutenant William Ogg, V. B., vice Wm. Allen Foley, who is hereby permitted to retire with the rank of Lieutenant.

LEAVE OF ABSENCE.

Captain Thomas R. Jackson, No. 5 Troop, 1st Regiment of Cavalry, for three months, from 15th March last, to proceed to England on private affairs.

Captain Richard W. Barrow, 14th Battalion, for two months from 26th March last, to proceed to England on private affairs.

PROVINCE OF QUEBEC.

Montreal Brigade of Garrison Artillery.

To be Captain:

2nd Lieutenant William Hamilton Taylor, G. C., vice Robert Austruther Ramsay, who is hereby permitted to retire retaining rank.

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

1st Lieutenant James Alfred Devine, 1st Montreal Engineer Company, having completed his "short course" of Instruction is hereby authorized for the "Long Course" from 18th March, 1873.

8th Battalion "Stadicona Rifles," Quebec.

No. 3 Company.

The resignation of Ensign John David Gilmour is hereby accepted.

Wakefield Infantry Company.

To be Lieutenant, provisionally:

Sergeant John Reid, vice Gates, promoted.

To be Ensign, provisionally:

Private George B. Johnston, vice Thomas Kirkup, whose resignation is hereby accepted.

PROVINCE OF NOVA SCOTIA.

1st Halifax Brigade of Garrison Artillery

To be Captain:

1st Lieutenant George Anley Sanford, V. B. vice Captain and Brevet Major Edward Lockhart Coleman, who is hereby permitted to retire with the rank of Captain.

To be 1st Lieutenant:

2nd Lieutenant James E. Curren, M. S. vice Sanford, promoted.

By Command of His Excellency the Governor General.

P. ROBERTSON-ROSS, Colonel,

Commanding the Militia of the Dominion

and Adjutant General.

The *Revue Coloniale et Maritime* gives the annexed particulars of an experiment made at Wankolm, near Stockholm, in August last to determine the effects of ships' fire against masonry of unarmored forts. The cuirassed gunboat *Hilder* and the monitor *Jan Ericsson* were directed to practice against a fort of this description, having a scarp wall 2m. 13c. (7ft. nearly) in thickness. This wall was faced with blocks of dressed granite about 25c. (16 3/4 in.) thick; the rear fort was formed of brickwork 61c. (32 1/2 in.) though the intermediate space being filled up with rubble masonry formed of fragments of granite bedded in mortar. Three rounds were fired at the same point on the front of the wall, with a rifle-cannon of 205mm. (6-15in.) calibre, carrying a projectile weighing 340 Swedish pounds, and with a charge of 50 Swedish pounds of Belgian powder (the Swedish pound is about 1 41/20z, avoirdupois). The first shot struck a joint between stones, fractured the stones, penetrated 40c. (4 1/2 ft.) into the wall, and lodged there. The opening thus formed was 0m. 22c. (8in.) across externally. The second shot struck close to the first, hitting it, and falling back to the foot of the wall. At the back of the wall the brickwork was bulged over a space of about half a square metre, and the bricks cracked. At the third round, the shot entered the same opening, passing right through the wall, and through two other small brick walls in rear, before it touched the ground. All the projectiles were found in a perfect state, with their points wholly uninjured. A shot was then fired from a smooth-bore gun of 360mm. (10 1/2 in.) calibre, with a 460lb. shot, and a charge of 53lbs. of powder. The shot penetrated the wall, breaking two stones, but was found to be broken itself.

"A Teacher of Skirmishing" says: "The increased range of the modern fire-arms merely as a logical sequence some increase of visual power in those directing its operation in action. Scientific skirmishing as emphatically demands it. Every sailor officer has his telescope. It is time every soldier officer had his fieldglass. Time has written a good many wrinkles on earth's swarthy brow. To discover at a thousand yards, by means of the crystal eye, that one of these shelters a hostile line is clearly preferable to having the fact first announced by a volley at four hundred. As tactics are believed to stand at present, every man in an ideal army should be provided with this adjunct to the single one of five wits by which he works and governs his conduct. But every officer unquestionably should be thus equipped. On outpost duty in an any-ways open country a good glass is a day patrol in itself; while as an aid to rapid correction of errors of distance it is invaluable. I cannot but express a conviction that field-glasses will both preserve and destroy many lives in a further campaign."

REMITTANCES Received on Subscription to THE VOLUNTEER REVIEW up to Saturday the 5th Inst.—

BRANTFORD, Ont.—Captain David Spence....\$3.00
 GODERICH, Ont.—Lieutenant Joseph Beck. 2.00
 GUELPH, Ont.—Mr. John J. Hazelton..... 4.00
 Capt. A. H. Macdonald.... 4.00
 RICHMOND, Ont.—Capt. Thos. Good, Jr..... 1.00
 TORONTO, Ont.—Lt. Jos. Litton Gabbett... 2.00

F-A I T H.

"*Faith is the substance of things hoped for, the evidence of things not seen.*"

Give it to me,—that in my hours of darkness,
When every golden tint is lost to view,
I still may feel that in my Father's fastness
I have a rest enduring, strong, and true;
Though clouds my perfect vision screen,
Give me the solace of a power unseen.

Give it to me,—that in my days of sadness,
When tears are all the heritage I own,
Hopes that are born of grief not gladness,
Be garner'd fruit that Thou unseen has sown;
Though long the trial, slow the rip'ning be,
Grant the full harvest, may ascend to thee.

Give it to me that in my hour of weakness,
The heart with many struggles interlined,
I yet may see that thy divine completeness
In loving mercy gives me strength to find
A foothold where alone upon the strand,
In perfect trust I grasp my father's hand.

Give it to me,—beyond these chilling vapors,
I would behold that purer light of thine,
And see afar those radiant, holy tapers,
Lit by a faith exalted and divine;
Earth lights will fall, these rays grow dim at last,
Then hide me till the storm is over-past.

THE EMPLOYMENT OF MITRAILLEURS DURING THE RECENT WAR, AND THEIR USE IN FUTURE WARS.

By Lieutenant Colonel H. C. Fletcher, Scots Fusilier Guards.

(Concluded from Page. 155.)

Most if not all, the great Powers of Europe have provisionally adopted some description of mitrailleurs. The French retain those they employed during the war. The Prussians possess large numbers, which were captured from the enemy. The Austrians are manufacturing machine guns, on Messrs. Paget and Broadwell's principle, and are attaching them to the regiments of Hungarian militia. The Russians are making large numbers of Gatlings, on (I believe) Colonel Gorleff's principle, and it is said that 400 or 500 guns are ready, or are nearly completed. The rapidity of fire is stated to have been increased up to the almost incredible number of 1,000 shots per minute, which rapidly can, however, be regulated and checked by a simple adjustment of the feeding apparatus. The gun has been lightened, and the spreading motion of its fire improved. The Turks have ordered a large supply similar in pattern to that selected by Austria. With regard to America, although it appears that there has been no formal adoption of the mitrailleuse, their utility has been reported favourably on by American officers, and the manufactory with which Mr. Gatling is connected has every means of turning them out rapidly in the event of war. They are employed in arming the forts in the Far West against the attack of Indians; and (as I have been to-day informed by Captain Selwyn, R.N.) a certain number are in readiness at Salt Lake City, in the event of any trouble with the Mormons.

At present no Government has given orders respecting their tactical employment, and it is on this point that I would venture to direct your opinion, trusting that a discussion by able Officers of all branches of the two services, may tend to elucidate a question which at present presents many complications, and is attended with considerable difficulty.

COMPARISONS IN THE EQUIPMENT OF 9 POUNDER FIELD GUN AND GATLING BATTERIES.

In order to assist in forming conclusions I am enabled to offer an estimate, prepared by Colonel Wray, of the comparative number of horses, men, and waggons, which are required for a battery of six 9 pounder field guns, and for a battery of twelve Gatlings.

Comparative equipment of a 9 pounder Field Battery of 6 guns, and of a battery of 12 Gatling Guns.

- 9 Pounder Field Battery. 6 Guns.
- 1 Captain.
- 1 Second Captain.
- 3 Lieutenants.
- 1 Assistant surgeon.
- 6
- 1 Sergeant major.
- 1 Quartermaster-sergeant.
- 6 Sergeants.
- 6 Corporals.
- 6 Bombardiers.
- 85 Gunners.
- 81 Drivers
- 2 Trumpeters
- 1 Farrier.
- 4 Shoeing Smiths.
- 2 Collar makers.
- 2 Wheelers.

197

- 6 Guns.
- 12 Waggons
- 1 Store waggon
- 1 Forge waggon
- 1 General service waggon.
- 1 Store cart.
- 214 Rounds per gun.

Riding Horses.

- 12 Officers.
- 2 Staff Sergeants'
- 12 Non-commissioned Officers'.
- 2 Trumpeters'.
- 1 Farrier's.
- 1 Shoeing smith's.
- 4 Spare.

34

Draught Horses.

- 48 Guns.
- 72 Ammunition waggons.
- 6 Store waggons.
- 6 Forge.
- 4 General service.
- 2 Store cart.
- 12 Spare.

150

184 Total Horses.

Gatling Bat.ery. 12 Guns, 45 calibre.

- 1 Captain.
- 1 Second Captain.
- 3 Lieutenants.
- 1 Assistant-surgeon.

6

- 1 Sergeant-major.
- 1 Quartermaster-sergeant.
- 6 Sergeants.
- 6 Corporals,

60 Gunners.

- 20 Drivers.
- 2 Trumpeters.
- 1 Farrier.
- 2 Shoeing smiths.
- 1 Collar maker.
- 1 Wheeler.

101

- 12 Gatling Guns.
- 6 Small arm ammunition carts.
- 1 Store waggon.

1 } Forage and General Service waggon combined.

2,208 Cartridges carried with each gun..... 26,496

9,000 Cartridges in each S.A.A. cart..... 54,000

12,804

Cartridges per gun..... 6,708

Riding Horses.

- 12 Officers'.
- 2 Staff-sergeants'.
- 12 Non-commissioned Officers'.
- 2 Trumpeters'.
- 1 Farrier's.
- 1 Shoeing smith's.
- 4 Spare.

34

Draught Horses.

- 24 Gun.
- 12 Small arm ammunition cart.
- 6 Store waggon
- 6 } Forage and General Service waggon combined.

8 Spare.

56

90 Total horses.

The total weight of draught of the Gatling is as follows:—

	cwts.	qrs.	lbs.
Gun carriage when complete.....	7	0	7½
Limber ditto	5	0	25
Six drums filled	3	2	0
Total.....	15	3	4½

Supposing a shield to be introduced for protection against the fire of infantry, an advantage which I scarcely think counterbalance the additional incumbrance, 3 qrs. 25 lb. would require to be added to this weight, making a total of 18 cwt. 19 qrs. 25 lbs.

There is another important question bearing on this portion of the subject which should be considered, especially as the opponents of the Gatling gun found their chief objection to its supplementing artillery on the increased impediments thereby raising on the line of march. That a battery of twelve Gatlings must cover a considerable length of road is of course a fact that cannot be controverted, but comparing the space occupied with that covered by a battery of six 9-pounders, the advantage will tell considerably in favour of the Gatling, as is shown by the following table, also prepared by Colonel Wray:—

Space occupied by a battery of six 9 pounder field guns, as compared with that occupied by a battery of 12 Gatlings:—

9 pounder Field Battery.		Length in yards.	Total.
6 guns, 8 horses	.....	19	114
12 waggons, 6 horses	.....	15	180
1 store waggon, 6 horses	....	15	15
1 forge, 6 horses	.....	15	15
1 General Service waggon } 4 horses	.....	11	11
1 store cart, 2 horses	.....	8	8
Total in yards		.....	353
Battery of 12 Gatlings.		yards.	Total
12 guns, 2 horses	.....	7	84
6 carts, 2 horses	.....	7	42
1 store waggon, 6 horses	....	15	15
1 Gen'l Service wagon and } forge combined, 6 horses	.....	15	15
Total in yards		.....	156

Should it be required to divide the battery, either on the march, or when about to come into action, the two captains would each take a half battery of 6 guns, or if subdivided, the three subalterns would command divisions of 4 guns, in place of 2, as in a field battery.

If you accept these calculations as correct, you will, doubtless, in the comparison between the Gatling and field artillery, give due weight to the comparatively small number of men and horses required for the former, as opposed to those necessary for the service of a battery of field artillery and will balance these advantages against the greater power and range of the field guns. There can, also, be little doubt but that Gatlings will, from their lightness, be able to move over ground impassible for artillery, and that, although their range may be less, their effect at distances under 1,200 yards will certainly be found to be more deadly.

In the Duke of Wurtemberg's pamphlet it is stated that the Prussian artillery usually open fire at distances varying from 1,400 to 1,600 paces, whilst Col. Reilly corroborates this statement in his evidence given before Colonel Wray's Committee, by saying that at an action at which he was present near Orleans, their horse artillery fired at 1,200 yards, or within the effective range of the small Gatling.

The traversing arrangement for spreading the shot during the time of firing, adapted to the Gatling gun, removes the objection raised against the French mitrailleurs, that they carried so close as to put several bullets into the same men, whilst the absence of recoil enables the fire to be steady as well as continuous, the rapidity being regulated at the discretion of the firer.

The questions before this meeting are, first whether the mitrailleuse or Gatling is

adapted for modern warfare under any circumstances. If so much be conceded, it remains to be settled whether it should be attached to infantry, or cavalry, or should form part of the artillery of an army.

On this point the balance of the evidence examined before the Committee inclined, with one exception, to make Gatlings a supplementary part of the artillery force.

Not that they should be attached to artillery batteries, but that they should be treated tactically in a manner similar to that arm of the service. Great independence has by a recent regulation been given to Officers commanding batteries of field artillery. They are now required to support the operations of the other branches of the service, without hampering their action by conforming too precisely to their movements. So with Gatlings. Officers in command of Gatling batteries will require an especial tactical training, and will have to learn their proper employment in the field. If for purposes of organisation these batteries should be composed of twelve guns it should be clearly understood that their division and subdivision for tactical employment would not only be probable, but would be almost certain, as I can conceive no situation where any large number of Gatlings could with profit be employed together. Their province would usually be to remain concealed behind some hastily raised breastwork, until the opportunity should arise of pouring forth their stream of deadly fire. To show themselves to artillery at the longer ranges in open country would be to court destruction; but to profit by their comparative insignificant size, and to bide their time until the enemy's infantry should advance, seems to be the rôle laid out for them in field operations. Now and then they might be called to the front, especially in enclosed country, but defensive rather than offensive tactics appear best suited for the full development of their powers.

As has been already stated, the Hungarian Government is reported to be in favour of attaching mitrailleurs to regiments of Militia, hoping by this means to give moral and material support to raw troops. To this opinion I would venture to dissent on the following grounds:— Infantry ought, under the present conditions of warfare, to be rapid in movement. Preceded by clouds of skirmishers, and pressing onwards in successive waves, they must, when once engaged sweep forward, availing themselves of all undulations of the ground for shelter from the enemy's fire. To wait for Gatlings, to rely upon them for support during their advance, or for cover when repulsed, would be to lose their elasticity, and would tend to lead men to depend upon extraneous help rather than on their own rifles and bayonets. The very ground that infantry would select for action would be unsuitable for wheeled transport. Regimental Gatlings would either hamper the action of the troops to which they might be attached, or would be left uselessly in rear, vainly endeavouring to follow, and seeking fruitlessly for opportunities for coming into action. The reason against attaching field guns to infantry: would apply, only in a lesser degree, to uniting Gatlings with infantry. The action of artillery and of Gatling batteries should be separated from that of the infantry; each has its proper duty to perform, but these duties are distinct, and should consequently be kept separate.

None of the evidence was in favour of using Gatling batteries in place of horse artillery. The inferiority of their range to that of field guns would probably lead to their des-

traction if opposed to horse artillery on open ground suitable for cavalry operations. It is, however, fair to say that no practical experience has elucidated this question, and that some Officers hold contrary opinions to that which I have ventured to suggest. That they will be found most useful for flank defence of ditches, for sweeping the approaches in front of field works, for playing on the head of a sap, and for employment in the trenches and approaches of a besieging force, engineer Officers will, I think, allow; their lightness, handiness of movement, the absence of recoil, and the continuity of their fire, seem peculiarly to fit them for such uses. The necessity and yet the difficulty of bringing field guns into the advanced trenches to check sorties was felt during the siege of Sebastopol. The greater mobility of the Gatling, and its acknowledged superiority in deadliness of fire at short ranges to the 9-pounder field gun point to its employment in future sieges. How best to entrench it is also a question to be decided by Engineer Officers. To restrict its action within the limits of an embrasure would unduly diminish its powers, and prevent the development of the sweeping fire caused by the lateral movement of the barrels as they successively discharged their shots. For the defence of defiles and of bridges Gatlings are well suited, although, on the other hand, for attack against entrenchments or barricades they appear to be almost valueless. For naval purposes, such as have already been indicated, the Officers whom I have had the privilege of consulting agree that they will be found very valuable, and to this opinion I have as yet heard no dissent.

In a paper written by Captain Rogers, which appeared in the January number of "Once a Week," it was suggested that Gatlings might be usefully employed in some of our colonies, when small numbers of Europeans may be engaged against savage tribes. They are easier to work than artillery, and consequently would be better adapted for comparatively untrained men, such as colonial Volunteers must, from the circumstances which surround them, frequently be. They are readily moved through districts when the roads would scarcely admit of the passage of field guns.

On all these points, and doubtless on others which have escaped my observation, I would direct your attention, and trusting that the evidence I have been able to collect may prove of use in enabling you to form conclusions on the important question involved in the employment or rejection of this description of weapon, I leave the matter in your hands, availing myself of this opportunity of thanking Colonel Wray, Captain Beaumont, the officers of this Institution and others, for the information they have afforded me on several technical matters relating to the subject.

The Mechanism of the Gun.—On the mechanical construction of the gun I have purposely refrained from touching, the subject of the lecture being the employment of the mitrailleuse in war. A description of its several parts will be found in Mr. Gatling's paper published in this Journal, whilst the gun itself is present for inspection.

On two points only do I wish to make remarks. The feeding apparatus by means of a drum containing 336 cartridges has replaced the hopper previously used. Thus the rapidity of fire has been greatly increased, and the risk of the jamming of the cartridges removed. The diameter of the bore has been made similar to that of the new Army rifle, the Martini-Henry; The

ammunition is not, I regret to say, interchangeable, as the bottle-necked form of the Martini-Henry cartridge is unsuited to the mechanical method of loading the Gatling, from its not passing smoothly down the drum into the chamber. Possibly this defect, not in the gun or its cartridge, but in the uniformity of the armament of the Gatlings and of the infantry, may be remedied; but even if the former require a separate ammunition, I do not conceive that in convenience in storage or in issue will be found to arise.

In conclusion I have only one observation to offer. History shows, with no doubtful indications, that it is not merely to the improvement of arms that nations have owed their success in war. To take the most recent instance. The French infantry were incomparably better armed than their opponents. They were taught to rely on their chassepôts and on their mitrailleurs, but they were not sufficiently instructed in the method of employing them. They were wanting in the steadiness and discipline which rapidly firing arms require, and as their confidence in the new weapons had been unduly exalted, so when results failed to fulfil their anticipations their morale became impaired. By all means furnish soldiers with the best arms that can be procured, but at the same time teach them that battles are not won by arms alone, but by a combination of courage, discipline, and skill which pertains to vigorous nations and to well-trained troops.

THE UNITED STATES NAVY.

(From the London Engineer.)

We have before us the detailed reports for 1871 of the United States Navy Department, and although these documents do not contain and elaborate criticisms on the naval policy of foreign Powers, nor any revolutionary theories of marine engineering or naval construction, as has generally been the case in former years, still they present many points likely to be of interest to our readers. One of the most important facts that we learn from them is that the United States have definitively decided to abandon any pretensions that they might previously have entertained of ranking as a first-class naval power. This policy, although only indistinctly indicated in the report of the Secretary of the Navy, is expounded clearly enough in the document furnished by the Chiefs of the Bureaux of Steam Engineering and Naval Construction. The latter of these gentlemen assumes that it is not likely the United States will ever in future engage a foreign foe in line of battle, and that consequently it will not be to the interest of the Government to follow too closely the policy of other nations in building a large and costly iron-clad fleet. Neither does he consider it advisable to copy the form of unarmored vessels already built in Europe until their superior qualities are duly proved. He points out that the geographical position of the United States is such that a large and powerful iron clad navy is not required as a bulwark of defence, that the abundance of their internal resources enables them in time of war to live within their own means and without foreign products, and that consequently they would not be much affected by their commercial intercourse with either countries being cut off; adding that while England is spending enormous sums of money in constructing costly iron clad vessels for the purpose of maintaining the supremacy of the seas, the United States have not so much as collected the materials for building one, and that, until circum-

stances compel, they can allow other nations to experiment extensively in that class of vessels, and by a thorough investigation determine whether armor or ordnance has the advantage. He moreover maintains that it cannot be supposed the United States have acted unwisely in delaying to build iron clads, however the question may be decided, but that the loss will be to those nations possessing a number of armored vessels of obsolete types, unable to withstand the effects of modern artillery.

It is needless to point out the fallacies contained in these arguments. No great commercial country like the United States can afford to sink into the position of a third rate naval power. Vast as their natural resources undoubtedly are, they nevertheless do not possess the necessary elements for producing a large iron clad fleet at a short notice, and in the event of a war with a maritime nation of any importance their seaboard would be ravaged and every vestige of their commerce swept away before one of the vessels in which they are at present so deficient could be launched. It is, besides, a very difficult thing now-a-days for a civilized country to exist solely upon its own internal resources. When war is raging with all its fury the soil remains untilled, manufactories are closed, trade is at a standstill, and famine close at hand. The Confederate States, by no means the least productive parts of the Union, at all events learned this terrible truth by experience.

The indifference displayed by the United States Government with regard to the construction of iron clad ships of war is, however, in some measure counterbalanced by the unmistakable attention that is being devoted to torpedoes. The fact of the United States holding themselves aloof from the complications of European politics has produced in the country, as the Secretary of the Navy justly observes, a feeling of security which has caused the Navy to be neglected; at the same time he considers that the want of vessels of war to resist an attack which can only come from the sea may in a great measure be met by a well-devised system of torpedoes. It is, as he remarks, beyond a doubt, that there is no iron clad afloat, no matter how powerfully constructed, that can withstand the explosion of a skillfully applied torpedo. Thus, while these terrible engines of destruction are the cheapest of naval weapons, and within the means of the poorest nations, the strongest and best prepared are unable to resist their attacks. Torpedo warfare is still in its infancy, but it is the infancy of a most powerful development, and it is especially the policy of the United States to foster its growth. The Secretary admits, however, that it would be a grave error, while advocating the importance of torpedoes as one means of attack and defence, to forget that they alone will not suffice for naval purposes; and agreeing as we do with the last observation, we cannot refrain from expressing our surprise that he should content himself with simply recommending to his Government the construction of a few small unarmored cruisers, useful enough no doubt in times of peace, but of no good whatever during war, unless supported by an iron clad fleet.

We now proceed to points which, although of less national importance, are, perhaps, of greater interest to our readers than those we have already touched upon. As all practical men in this country had long foreseen would be the case, the Americans have at length discovered the unsuitability of wool as a material for the construction

of an iron clad fleet. The Secretary of the Navy states that early in the past year his attention was called to the fact that many of the iron clads needed extensive repairs to render them fit for efficient service. Several of them, and those the most powerful, were built of wood, while the beams and many of the frames of those with iron hulls were of the same material, and this woodwork was found upon inspection to have decayed so much that it was absolutely necessary to replace it immediately with iron.

The same official (Chief Engineer King) expresses an opinion strongly in favor of the employment of compound engines, principally on the ground of their having been adapted by various steamship companies; but he certainly brings forward no arguments of his own in their favor, and, indeed, informs us that so much doubt, exists as to their value that a board of engineers has been appointed to inquire into the subject.

Another point of interest to which he refers is the substitution of two bladed for four bladed screws in the vessel of the American Navy, with a view of increasing their efficiency under sail. The result of this change appears to be that while the speed is not materially altered in smooth water and light winds, it is very seriously reduced when head seas and winds are encountered, and that the screws cannot keep steady way on the ships against moderate gales when accompanied by heavy seas. The question of the best form of screw propeller seems to have caused considerable difficulty to the department, for we find that during the past year several experiments have taken place for the purpose of testing the point. Of only one of these are we given any details, and that is with a Hirsch screw, which by the way, appears to have afforded anything but good results.

The boilers of American ships of war have suffered equally with our own by the introduction of the surface condensers, and Mr. King estimates that their duration has been decreased nearly one-half. He states that a thin coating of saline scale is found to be the best preservative. All the new vessels, it appears, are being supplied with cylindrical boilers with their shells of increased thickness.

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