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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. VI.

OTTAWA, (CANADA,) MONDAY, AUGUST 5, 1872.

No. 32.

### NEWS OF THE WEEK.

Her Majesty with the Prince and Princess of Wales has visited the United States squadron at Portsmouth.

The Geneva Board of Arbitration are reported to be carrying on their business with rapidity and a thorough concurrence in the mode of dealing with its details.

The winning of the Rajah of Kolapore's Cup by the Canadian detachment has excited a good deal of surprise as well as gratification in England, it proves that with the many disadvantages this country labors under it has organized a first rate military force unshackled by compulsory service.

France is endeavouring with the true national *esprit* to repair her disasters, if it were possible to establish a really strong government, what a splendid country it would be.

The Duc of Guise, son of the Duc d'Aumale eldest son of the late Louis Phillipe, is dead of scarlet fever in England, successor to a splendid historic title, he has been removed from a troublesome and weary world at an early age; at present the titles alone seem to be the only heritage of the Orleans family of Bourbon.

The Kaisers ministers are preparing with quiet and stern earnestness for arming the whole of their military force well knowing the inevitable contest which must come sooner or later.

Prince Bismarck is leaving no stone unturned to Germanize Alsace and Lorraine; German is the language to be used in all diplomatic, political, or legal documents.

Spain is still heaving with the throes of revolution, turbulence and plotting seems to be the characteristics of its people and its monarch must wear an uneasy crown.

Russian influence is said to be extending in Turkey, the old project of connecting the Caspian and Black Seas by a navigable canal is again under consideration. Such a junction if possible, would, doubtless, change the whole aspect of North Western Asia, as well as restore it to its primitive fruitfulness, the Caspian is said to be rapidly

dessicating and its level is sufficiently below the Black Sea to allow the waters of the latter to fill its whole expanse, it would add to civilization a country half as large as Europe.

Italy is busily engaged in national development the contest with the Pope does not seem to effect the prosperity of the kingdom, lessen the respect of the people for their rulers nor make them dissatisfied with their lot. Il Re Galantuomo is as popular and as much believed in as ever.

The Mikado or Emperor of Japan is about to visit Europe.

An Ambassador and attaches from the King of Siam have been presented to Her Majesty Queen Victoria.

In Mexico the revolution still progresses. Who will be the successor of the savage Juarez will be determined by force and numbers.

The so called revolution in Cuba, or rather Brigandage kept alive by Yankee interference is slowly dying out, repressive measures are impossible, when a lot of ruffians with self dubbed titles are allowed to congregate in the chief maritime city of the United States, and plot murder, robbery and treason in open day, hold a semi official existence, and fit out armaments which are only intercepted because their escape would jeopardize the case before the Geneva tribunal.

The general prosperity of the country is not affected by any political squabble just now, and whenever the people are "blue moulded for want of a baeting"—they have Mexico to take the edge off their fighting humour. It is probable the interests of humanity would be furthered by its acquisition by the States as it would tend to absorb the dangerous characters with which its principal cities and chief frontier towns are infested, and make an attempt at social order possible.

In the United States the election contest is still pending, and it is an open question whether the philosopher of Choppaqua, or the peasant incumbent of the White House, will have that privilege of being abused by the people of the United States for the next four years.

### REVIEWS.

*Blackwood* for July has been received, it contains the conclusion of the "Maid of Sker."

The British Tourist in Norway.

A Century of Great Poets.

A True Reformer—Part V.

Old Maids.

A Precarious Existence, and a Biographical notice of the late "Charles James Lever"—"Charley O'Malley," "Cornelius O'Dowd," and a host of aliases derived from his inimitable novels.—Re-published by the LEONARD SCOTT PUBLISHING COMPANY, 140 Fulton street, New York.

The *Phrenological Journal* for August has also been received.

The *New Dominion Monthly* for August has been received.

As also the *American Agriculturist* for Aug.

The Admiralty have decided that it is inadvisable to test one of the 25-ton guns, such as the *Monarch*, *Glutton*, *Hotspur*, &c., are armed with, by firing one hundred rounds from it in one day's practice. It was noticed in the *Glutton*, when firing her 25-ton gun aft, that the unconsumed pellets of powder indented the decks and iron work; and it is supposed that should the guns become heated by continuous fire, a larger consumption of powder would take place, which would give rise to a more violent recoil, and also to the more violent ejection of the projectile. Whether the 25 ton guns would stand this has not been, and, it appears will not be, tried. In view of the probable consequences of rapid continuous fire from these guns in a prolonged naval engagement, captains of ships might do worse than remember that

"He who fights and runs away,  
Lives to fight another day,"

—*Broad Arrow*.

REMITTANCES Received on Subscription to THE VOLUNTEER REVIEW up to Saturday, the 3rd Inst:—

BIRNBROOK, Ont.—Lieut.-Colonel John Brown, \$2  
BACKHEATH.—Capt. James Hoey, \$2.00.  
BELLEVILLE.—Capt. J. A. G. Crozier, \$2.00.  
OTTAWA.—Lieut. J. C. Tache, \$2.00.  
QUEBEC.—Lieut. F. C. Wurtelle, \$3.00.

## THE STORY OF THE SEVEN-INCH GUN.

Admiral Sir Lepold M'Clintock, F. R. S., Superintendent of the Portsmouth Dockyard, presided at a meeting of the officers of the two services at Portsmouth Dockyard, on Friday, 17th instant, when commander William Davison, R. N. told the story of the 7 inch gun. He said:—The ablest artillery authorities are agreed that a new system of rifling must be sought for the heavier guns if they are to throw shells of adequate length and to endure rapid continuous fire, such as they will be subject to in well-contested naval actions or in bombardments. It behooves artillerymen, then, to study the mechanical principles which distinguish the few systems of rifling which have been successfully tested, with a view to observing their relative merits, and to forming intelligent opinions on such schemes as may be presented for adoption. Now, seamen have great opportunities of close observation, and if they will only collect and collate numerous facts, may add greatly to the stores of knowledge, and they may enable artillerymen to deduce from those facts some of the true principles of science. After the expenditure of two and a half millions sterling in five years, the Duke of Somerset confessed in 1863, that the country had no better gun than the 68 pounder; and although the Armstrong projectiles had been tried, there was no prospect of supplying our ironclads with heavy rifled guns, and in despair, the Admiralty insisted on having various heavy smooth-bores. Thus matters stood, when in 1863 a heavy gun competition was determined upon with a view of ascertaining which of five competing systems of firing—viz. the Bashely Britten, Jeffery, Lancaster, Scott and the French or Woolwich—should be preferred. For land service 7-inch guns of 7½ tons were, accordingly rifled on these principles. From various causes the competition dwindled down to a trial between the French and the Scott gun. And of those it was reported that "the shooting qualities of these guns are so nearly alike that the committee feel they may rest their recommendations of the one or the other system upon other and more general considerations, and they have finally determined to record their unanimous opinion in favor of the so-called French system; 1st, because of the simplicity of studding on the projectiles; 2nd, the simplicity of the grooving; and 3rd, from a disposition to admit of the advantage of an increasing over a uniform spiral, which has been strengthened by the present trial. This advantage can best be realised with a short bearing on two points." The French gun itself gave a somewhat different report, for, being examined by the Inspector of Ordnance after the 567th round, the upper grooves was found cracked for eight inches in length, just where the upper foremost stud struck it in starting; dents were found in the lands and grooves, about the same spot; the loading side of the lower groove, for a length of twelve inches just where the lower stud in coming into bearing inflicts a heavy blow on the rifling, was much worn; about the same point, viz. from the bottom of the bore, the bore was enlarged as much as .049 inch; and such other injuries were inflicted by its wobbling projectiles that (the inspector said) "this gun should, in future, be fired "under precaution." Thus, at the 567th round, the gun with the three merits enumerated was added to the "Cemetery of Suicides." On the other hand, the Scott gun which had fired 517 iron ribbed centering projectiles, had its grooves and lands as perfect as when it came out of the factory—the only damages

being those common to both, and due to the conical form of chamber, the destructive qualities of which were not then understood. The Admiralty (advised no doubt by the captain of the *Excellent*, the present Admiral, A. Cooper Key) preferring the report which the projectiles had written in their respective guns to that emanating from the committee, asked to have Scott's gun sent to the *Excellent* for further trial; but the president of the committee, anticipated the application by boring the gun to 30.3 in. bore, by which it was rendered utterly useless for any purpose whatever from that day to this. After describing the "simplicity," of the Scott centering iron bearing projectile, and the peculiarities of its construction Commander Dawson proceeded. The distribution of strain and the perfect centering in the bore fully account for the grooves having been as perfect at the end of the competition as when the gun left the factory. It also explains why the centering shot of the same weight, fired with similar charges, escaped out of its gun so much more readily than the French or Woolwich one, striking a far more heavy blow. Thus, with 110 lb. shot, the Scott gun struck, with a 25lb. charge, a muzzle blow 133 foot tons heavier than its rival; with a 20lb. charge, it struck a blow 121 foot tons heavier; and with a 12 lb. charge, it struck a blow 27 foot tons heavier. No wonder the committee reported that the French gun had decidedly the lowest velocities." Thwarted in their desire to test the Scott gun on board the *Excellent*, the Admiralty next objected in 1865, to the increasing spiral, which had no doubt aided in producing such deplorable results in the French competitive gun; and, "at the request of his Grace the Duke of Somerset who desired to test the relative qualities of increasing and uniform twists," two 7-in. 6½ ton guns were tried with French or Woolwich rifling, but with the two kinds of spirals each ending in one turn in 37 calibres. It was found that by adopting a uniform spiral the velocity or muzzle blow of the French rifled gun, using 115½ lb. shot, and 22lb. charges, might be increased 21.2 feet, or 56 foot tons; and that then "the blow struck by the one shot on leaving the muzzle would be to that struck by the other, as 100 to 103." Even then the muzzle blow of the uniform spiral 7-inch French gun was 196 foot tons less than that given by the Scott gun—albeit, this French gun was one ton lighter. Strange to say, the committee still held to their third merit of the French gun viz., "a disposition to admit of the advantage of an increasing over a uniform spiral." But the Admiralty, backed no doubt by the captain of the *Excellent*, and encouraged by dissentient artillery officers, were obdurate, and would not have what was then regarded as the only heavy broadside gun rifled with an increasing spiral. The War Department though silenced as to the 7-inch gun, was not convinced; "and persisting in "the disposition to admit of the advantage of an increasing over a uniform spiral," ultimately succeeded in having their own way with the heavier guns subsequently introduced. Though the adoption of the uniform spiral in seven inch French rifled guns has prolonged their lives far beyond that of their illustrious ancestor, the disabled competitive gun, it has not wholly counteracted the decay of nature. The grooves of the 7-inch guns of the *Favourite* were found marked by the over riding of studs, when that ship returned from the West Indies. The 7-in. gun of the *Redwing* was found split at the muzzle at the 881st round; another in the *Warrior* had its bore dented by its projectiles; and a fourth in the *Royal Oak*, was

found similarly injured. A 7 inch 68-pr. of 96-cwt. had the inner part of its grooves enlarged by the action of its studs, in 1871; and in 1870 another similar gun was, by the action of its wriggling projectile burst violently at the first round into 70 pieces which were thrown over an area of 580 yds by 150 yds. Still as compared with the original 7 inch gun with increasing spiral, the endurance may be regarded as very tolerable. But endurance is not the only quality required in a good naval gun. The problem is, "how to evolve the maximum amount of useful work out of a given weight of gun." Now a shell perforated with two rings of holes, each three inch deep, and 1.6 inch diameter, into which gun metal studs are wedged cold, and upon which the whole effort of rotation is concentrated, must have much thicker walls, and consequently much smaller powder capacity, to be equally strong with a shell that has no such weakening holes, but has iron-flanges or strengthening bultrusses cast upon its outside. Again the object of rifling a gun at all is to spin the projectile so perfectly that it shall "sleep," like a boys' peg-top when well spun and not wobble like the same top when badly spun. A well-spun shot flies through the air point foremost, making a sharp whizzing sound peculiar to every rifleman. A sharp "whiz" indicates that the bullet has been centred in the bore, and that the rifling has done its work well. But an intermittent "puffing" noise in the air indicates eccentric gyrations, which have been impressed upon the projectile while still in the gun. A "puffer" in the air is necessary a "wobbler" in the gun; and though the "puffer" reaches its destination in due time, its range is decreased by the expenditure of effort in "dancing" instead of walking the distance. Thus it so happened that when Scott spoiled his iron-ribbed shot by putting on it a soft zinc facing, it gave, with 20lb. charge, eleven feet less initial velocity than the "French" or Woolwich one; but it was so much better rotated that at 5° elevation it reached 97 yards further, showing that the Woolwich studded shot had been expending much of its force in the "giddy dance," whilst the Scott one was sticking to its work with becoming sobriety of demeanor. The original cause of difficulty of escape and of disproportionate range is not far to seek. As the Woolwich projectile sits in its seat in front of the powder charge, it rests upon the two lower studs, no other part of the shot touching the bore. The centre shot is, therefore below the centre of the bore, and there is a considerable space above the shot, the leading side of the two lower studs touching that side of the lower groove. When the charge is ignited a horizontal blow is inflicted on the base of the shot above its centre, and the gases escaping above it strike also a downward blow on the rear. The shot being balanced on two studs has its rear struck downwards and its front tipped upwards by the escaping gases. This originates a vertical hammering action, which shows itself sometimes by flattening the lower rear stud, by spiking the lower grooves about twelve inches forward of the spot over the seat of the fore stud, by scoring the base of the shot, or by flattening in certain cases the seat of the shot. Moreover, the lower studs resting at the bottom of the cutted groove necessarily come into bearing on the driving side before the other studs, which have a less deep hold of the other grooves. Each set of studs comes thus into driving bearing successively, imparting a succession of blows which results in a lateral wriggling motion. Should the lower rear stud have been flat

tened by the vortical blow of the escaping gases, it will come into driving, bearing at a still earlier period than any of its fellows. As the projectile proceeds along the bore, another set of studs occupy the lower position, and as these have not suffered either from the vertical blow of the escaping gases or from the side blow of first coming into bearing, their force is unaltered, and they take the grooving at a less depth, again altering all the bearings of the several stud rows. We have thus a succession of lateral wiggling motions imparted to the projectiles as it turns round in its passage along the bore. When an increasing spiral is superadded to the difficulties placed in the way of the shot escape, it is evident that the puzzle strains must be greatly enhanced, and that the major part of the work of rotation must be borne by the one rear stud in the lower groove. Indeed it has been found, that by cutting away the front studs and several of the rear ones, the wiggling is not so very much worse as when they are all present, showing that the work of rotation is really shared by very few of the studs. As the centre of the French shot does not rise to the centre of the piece, the principal powder action on its rear is above the centre all along the bore in its exit. So that we have in the non centering Woolwich stud system a maximum of lateral wiggling and vortical hammering, and a minimum of rotary power. The natural result is that the projectiles are imperfectly spun, and the sure index that it is so, is the "pulling" noise with which every naval officer is familiar. But bad spinning necessitates a short shell or a short range. The double shell for the 7-inch gun is not four calibres in length, and contains only 12½ lbs. bursting charge. Yet we are officially told that "these shells roll considerably," and that "it is not contemplated to fire it at long ranges, as its flight would be inaccurate." In other words, this shell would go flop (broadside on) against the object only 1,000 yards distant, and would have little or no penetration. The obvious means of remedying this fault would be to increase the angle of spiral in the gun, as Sir Joseph Whitworth has proved that even with a long bearing in each groove, one turn in 35 calibres will, if properly gripped, spin a shot of five diameters. But this expedient cannot be resorted to on stud system, as neither the grooves nor the projectiles will stand so rapid a twist. The highest artillery authorities are alive to this failure of rotation; and the question of long bearing centering projectiles versus the short bearing non centering system, is under consideration. Are naval men, with all their experience, so incompetent to pronounce upon their own weapons, that its decision will be left in the hands of a committee composed of six military men, with one naval officer to preserve appearances?—*Broad Arrow.*

### FLOGGED TO DEATH.

SOMETHING FOR THE WORSHIPPERS OF THE  
FRANCIS ALEXIS.

The Abbe Sierosinski, formerly Superior of the convent at Basilicans of Ovreus, took part in the last Polish revolution. He was sent by the Russian, Czar, to labor in the mines of Siberia, where he plotted with others to escape. For this he was condemned by the Emperor to receive seven thousand lashes. The following is a blood curdling account of the carrying out of the sentence.—In March '67, two battalions were drawn up in the great square of Ormsk, un-

der the orders of Galatejew, the cruel servant of the cruel master. Sierosinski and his companions were brought out, and the judgement was read aloud, the words "with-out mercy," which it contained, being especially emphasized. The culprits were stripped to the waist and their hands tied behind to a bayonet. Each one by turns walked along the whole of one battalion, every soldier administering to him a blow with a rod with its full strength. A thousand blows fell, and then each miserable, torn, bleeding victim was sent back to receive another thousand. On the third journey all fell dead. Sierosinski had been kept till the last, that he might behold the tortures suffered by his friends. A military surgeon tendered him a small phial containing some drops of cordial, which he refused crying, "I want none of your drops. Take my blood and drink it!" He started on his fearful journey singing, "God be merciful!" and his wild accents were gradually lost in the thud of the sticks striking his bare flesh and in the loud words of command of the General shouting, "Strike harder! strike harder!" The last three thousand blows fell on a corpse.

### A NEW MEANS OF PROPELLING SHIPS.

The Liverpool *Albion* reports that a recent number of gentlemen interested in slipping out at Canada Basin to examine a new means of propelling ships, which has been invented and patented by Mr. J. J. Allingham, of Hamilton road, Everton. Mr. Allingham's idea is to make the waves, acting upon the hull, propel the ship; and this he proposes to do by a very novel contrivance. Beneath the keel of the vessel he would fix two oblong steel frames each fitted with two sets of blades to open and shut crosswise. One frame he would secure to the forepart, and the other to the stern. Both the frames would be fixed at an angle. When the vessel rises on the sea the pressure of the water upon the frames would of necessity force her forward, and when she sank, the blades, opening, would from the opposite angle, and the onward angle would be thus continued. The apparatus would also have the effect of steadying her. When she rolled over to the right, the blades on the left side of the frame being shut, the frames would tend to bring her back to the perpendicular, and when she rolled to the left the closing of the blades to the left would have a similar effect. The angle of the frames would have a similar effect. The angle of the blades would have to be increased or lessened according to the state of the weather. To stop the vessel it would be simply necessary to close the blades in the frames. It will be seen that the action of the appliance depends entirely upon the motion of the waves; but at sea it is rarely the case that there is not a sufficient motion in the water to raise a vessel several feet. The inventor believes that the apparatus would be a sufficient propelling power for ships required to travel at a great rate of speed; but would supply ships with a limited amount of rigging as auxiliary power and to provide against accident. The working of the invention was shown up on a model ship seven feet in length. The little vessel held its way against the tide and in comparatively calm water, travelled with considerable speed. The opinion of the spectators seemed to be that the invention is in a somewhat crude state at present, but that it is founded upon a sound principle which, skillfully applied, would be of great value to the merchantile marine.

### AMERICAN WIMBLEDON.

The first attempt in this country to organize a prize rifle shooting meeting was successfully consummated yesterday on the occasion of the visit of the Twenty-second Regiment to Clifton, N. J. Accepting the Wimbledon Rifle Meeting as a model, several members of F Company, more particularly Mr. W. J. Carmichael and Captain J. Clan Randall, have occupied themselves of late in making arrangements for a shooting competition, the system of which should be able to vie with the famous annual gathering on Surrey Common, and through the kindness of a member of the Twenty-second Regiment, a suitable space of ground was obtained for the occasion. Situated a short distance from the Clifton station on the Erie road, it is admirable adapted for rifle shooting, inasmuch as a sudden rise of ground at the further end provides a needful barrier against the speeding of bullets on to the Lackawanna road, which lays just beyond. Three targets had been placed on the ground, two of iron and one of wood. The former had been kindly lent to the Regiment by the Ontario Rifle Association, who evidently took a great interest in the enterprise, and sent on their own targets, in order that the New Yorkers might have similar ones constructed. The present strike, however, of the iron founders interferes with the intention of the committee. A wooden target had therefore to be substituted, but it was found of little use, as after a few minutes firing the boards were completely riddled. The lack of stability in the wooden target caused a hitch, which interfered with the carrying out of the day's programme. General S. W. Johnson, Commissariat-General of the States of New York, provided the men with Remington arms of the latest pattern and also a number of tents, but these latter did not arrive in time to be of any use. Colonel Porter and the other officers of the regiment were on the ground, and the shooting commenced at about ten o'clock. Four events were on the programme, but the breaking down of the wooden target prevented either of the prizes being decided. The men, however, did some excellent shooting at both 200 yards and 400 yards range, Sergeant Failoute and Private Carmichael bringing out the white flag repeatedly. The trials will probably be decided next Saturday.—*New York World*, July 8.

The fortifications in process of construction by the German engineers at Strasbourg are of the most colossal character. On the side towards France they are making a vast entrenched camp, which will be capable of holding two hundred thousand men. The camp is to be supported by five principal forts and these are so placed that, until their reduction, it would be impossible to again bombard the city. It is calculated that reinforcements and supplies can always be sent by the Rhino—via Kehl—and thus the project is to make Strasbourg a sort of inland Sebastopol. Until, therefore, a great military commander, another Napoleon, shall arise to disregard tradition, and march past fortresses, leaving them contemptuously in his rear, France will apparently have to submit to see what was once one of her greatest strongholds, made greater for the benefit of a foe, and to learn to forget her old dream about the frontier of the Rhine. The routes of commerce are now being straightened in every part of the world. The gain of a few hundred miles is sufficient inducement to tunnel a mountain, run a canal through a desert, or reconstruct a rail road up the steepest hill side.

THE CAMP AT WIMBLEDON.

BRAVO CANADA.

(From the London Daily Telegraph.)

Saturday was a busy day at Wimbledon, a crowded programme bringing to a close the first and busiest half of the meeting. The camp was honored by the presence of Mr. Cardwell and one or two notabilities amongst the numerous visitors who came from the town, but the day was essentially one of solid work, which was got through in a style that has now become characteristic of the executive proceedings of the association. In one contest a more than usual amount of interest centred, for, though few Englishmen doubted that the mother-country would be victorious, all were anxious to see what sort of a fight the representatives of our gallant offspring the Dominion of Canada would make against the picked men of the United Kingdom. For the Raja of Kolapore's Challenge Cup, which is given for competition between one team representing the mother country, one from the Province of India, and one from so many of our colonies as chose to send representatives; there have now been two matches in which teams from the Dominion of Canada have competed against the best men we could produce. There is no doubt that the precedent established will become an annual custom, and that every year British riflemen will have the opportunity of welcoming the delegates of a force of which we have every reason to be proud, and on which the Dominion Government may safely rely for aid to repel any aggression on the national existence which has been so worthily begun. The Volunteers of Canada, or as under the new military organization of the Dominion they are called the active militia, number less than 50,000 men, and in a new country where every man is pretty well occupied with real hard work, there is neither the time nor leisure to be devoted to rifle shooting, which thousands here can afford. It is easy to understand therefore, under what disadvantages the Canadians labour, in coming here to measure their strength against a country which has three times the number of Volunteers to choose from. The attempt indicates an amount of pluck which proves them worthy scions of the old stock, and when on Saturday the first feeling of amazement had subsided at seeing them win the great prize for which they came, after an exhibition of skill, both on the part of the victors and vanquished, altogether unparalleled in the history of military rifle-shooting, there was but one feeling exhibited, that of hearty satisfaction that the Raja's Vase should be going to Canada to add, if possible, to the calm manly spirit in which a gallant people are preparing themselves to fulfill the first great duty of citizenship, and to stimulate the general acquisition of that skill in rifle shooting on which victory in the future will more than ever depend.

Last year the whole team of twenty Canadians competed against twenty picked from the highest scorers of the three international teams of the United Kingdom, the scores averaging 57.76 marks per man for the English team, and 52.70 for the Canadians, seven shots each at the Queen's ranges, 200, 500, and 600 yards. This year the Canadians very judiciously stipulated for a reduction in the number of competitors to a minimum, because it is obvious that out of their team of twenty all may not be in their best shooting force, and they are not able to fall back on a reserve, which so far as we are concerned, is practically unlimited. Eight on each side therefore were fixed on and this enabled the Canadians to pick out the men who have shot best through their matches at Altcar, and during the present meeting at Wimbledon. Captain Field, H. A. C. the captain of the mother country team, chose the best scorers in the three international teams that recently shot off at Edinburgh, what, until Saturday, was an extraordinary match for good shooting, seeing that the English twenty averaged 59.70 per man, and the Scotch 53.55 per man. A good idea of what was achieved on Saturday, may be gathered from the shots of the eight top scorers, in the Edinburgh match, who made 518 marks, or an average of 64.75 marks per man; when it is seen from the subjoined that the winners on Sat., made 532, or 66.5 and the vanquished exactly one mark per man less. Major Worsley, the officer in command of the Canadians, who, as an old captain of the 60th Rifles, naturally takes a deep interest in shooting, brought to the fore eight men who have performed a feat little anticipated, and which will deserve all the lionizing they will no doubt receive on their return. The match was shot in pairs, one of our champions and one of the Canadians shooting alternately at the same target. At 200 yards it was off shoulder, and it was noticed that the Canadians adhered much more closely to the Hyde or military form in position. At the other ranges nearly all the competitors used the prone position. Though the match was begun in the presence of a few friends of the Canadians, only prominent among whom was Sir Peter Tait, towards the close many spectators watched the shooting with ever increasing interest, and amongst them Lady Duncie. The following names and scores speak for themselves, the individual range and aggregate totals being given as a record of a match which will ever be memorable:

CANADA				
	200	500	600	
	yards	yards	yards	
Gunner Shand, Nova Scotia.....	23	25	22	70
Priv. Ferguson, 2nd Batt. G.T. R.	21	21	21	63
Mr. Thomas, 5th Batt. ....	22	25	21	68
Ens. Johnson, New Brunswick.	21	24	20	65
Priv. Bell, 10th R. Toronto. ....	20	25	22	67
Capt. Wall, G. T. R. ....	23	22	20	65
Corp. Larkin, 6th Batt. N. T.	21	21	20	62
Asst.-surg. Alkin, 37th Batt., Ont.	21	20	16	57
Total.....				532

ENGLAND.				
Priv. Cortis, 1st Sussex.....	21	21	20	71
Corp. Caldwell, 1st Renfrew.....	21	21	25	67
Serg. M'Vey, 19th Lanark. ....	22	22	23	67
Priv. Wyatt, 15th Salop.....	20	22	22	64
Priv. Clark, 2nd Edinburgh . . .	22	27	15	64
Cor. Wallace, 2nd Edinburgh	23	21	17	61
Mr. Board, 17th Somerset . . .	21	23	10	54
Ens. Snyth, 10th Lanark.....	21	20	10	51

Total... .. 621

The result was the less anticipated, inasmuch as the Canadians, having had to shoot one of the ranges of the Queen's in the midst of a storm of rain and wind, did not come to the front, though some of their names appear prominently in other competitions; and when towards the end of the 600 yards, it became apparent that the Canadian must win, the astonishment of the crowd of surrounding marksmen at their marvellous shooting, may perhaps best be epitomised by a naive expression of the gallant captain of the English team, who, in his amazement at their practice, said, "Why what manner of men are these? Here is a fellow who gets up after scoring 69, and growls like a bear with a sore head because he has made an outer." However, neither amazement nor a little mortification prevented Captain Field from cordially proposing cheers for the victors, in which the spectators as well as the vanquished, heartily united. Major Worsley in turn said, "Three cheers for the Volunteers of Great Britain, and take your time from me." This invitation, which sounded in its military brevity like a word of command, was so promptly and vigorously obeyed that an admiring spectator could not refrain from remarking, "Well, they have not forgotten how to cheer over there." Then followed a series of congratulations to the victors, the vanquished deriving no small consolation from the fact that in the magnificent score of Private Cortis, the silver medalist, one point was recorded in their favor. Sir Peter Tait who last year gave a hundred guinea cup to the Canadian team to take home for a challenge prize, and got up a series of prizes which were shot for here, has collected subscriptions amongst a few of the merchant princes of London and obtained a beautiful gilt cup, by Burnard and Son, of St. Martin's le-Grand, value 170 guineas, which the team will carry back to Canada as another challenge prize, besides presenting £100 to be shot for at Wimbledon the ensuing week. This handsome gift was formally presented to the Canadian Camp last week by Mr Samuel Morley, M. P., on the part of the subscribers.

The past week at Wimbledon has demonstrated a great and welcome fact. It has proved that our English Volunteers, after ten years of practice, have attained just as perfect mastery of the rifle, as their ances-

tors had over the bow, so that the weapon which must decide the fortune of modern wars more than any other has definitely become "the British weapon." We may remember what our ancient skill in archery did at Crecy and Agincourt, and congratulate ourselves on the shooting at Wimbledon without any *outré* *outré*, "Defence not Defence," the motto of the Volunteers, make it a positive triumph for the peace of the world that our citizen soldiers should exhibit such magnificent marksmanship. It is true that the Home Country team of English, Irish and Scotch has been defeated by the Canadian eight for the important Kolapore Cup. But, in the first place, the splendid score of the colonists is a fact almost as gratifying to us as if we were the victors; in the second, the shooting of the beaten men was so good that better could hardly be asked; and, in the third place, the very highest string of all was achieved by Private Curtis, of the 1st Sussex, who made 74 in his twenty one shots out of a maximum of 84. And when we look at past averages the general improvement is really wonderful. Last year the silver medalist scored 51, and there were only 50 and three 49's. This year there are already three scores of 52, four of 51, and 11 of 49. The highest number attainable has been repeatedly made, in the case of our own Cup and the St. George's Challenge Vase two competitors tied at the maximum. Briefly, the shooting during the week has been unparalleled for precision, and this, it must be remembered not with fancy, but with the Snider Enfield, the actual and established arm of the national forces. We maintain that in view of the extraordinary excellence, which the Volunteers have reached, a new estimate must be made of their value. Here are men by hundreds—we might say by thousands—before whose searching eyes and deadly trigger no advancing enemy could live. As skirmishers, aided by the endless cover of hedges and ditches, such men would form a line of defence which must not be judged by ordinary military standards. A Government would be worse than foolish—it would be criminal—it did not joyfully recognize that the old advantages of English nerve, and muscle, and eyesight were once more being educated for its service, and it did not take care to encourage in every proper way this hereditary skill. Here is a force of 170,000 more or less drilled citizens, of whom a third are better shots than any other army possesses, and a tenth of that third marksmen, whose bullets are sure and sudden death at a quarter of a mile. Such a reserve is most valuable; and while we hope that the season of 1872 will encourage Volunteer corps to practice more and more till they outdo themselves, we invite the attention of that vague personage, "the invader," to the averages which will be finally made up this week.—*London Telegraph.*

## THE ARMY, NAVY, AND AUXILIARY FORCES.

The Duke of Cambridge presided at the Female Orphan Asylum on Wednesday evening last. In proposing the Army, &c., His Royal Highness said—I have now to propose to you the "health of the Army, Navy and Reserve Forces," or the Auxiliary Forces, as I believe they are now termed. As regards the navy, I can say but little; though of one thing I am certain, that the men in our fleets are as gallant as ever. Although we have been most unfortunate lately, and have had a melancholy accident in the loss of some of the men in the *Aradne*, the gallantry of the crew of the ship in trying to save life was most praiseworthy, and I have no doubt that the old spirit which animated our seamen in days gone by will still distinguish our sailors. As regards the army and the reserve forces, so much has been said that I am sure the subject has become almost tiresome to everybody but I would observe that, with all the changes which are going on, it is extremely difficult to judge of the future. I believe that the character of our army, will be what it has always been, that the officers of the future will be equal to those who have held commissions up to the present time, and that there will be no cause for anxiety. But to attempt to predict what will be the result of long or short service whether the men who enlist but for a short time will take the same interest in their profession as those who used to join the army for a long period or not, is simply absurd. With respect to the auxiliary forces, I believe that they will be of the greatest possible use so long as they understand their exact place in the defensive system of the nation. But if they fancy that they can supersede the regular army, if they forget that it is only as a supplementary force they can effectively act, they will be utterly mistaken. I venture to say that nothing more unfortunate can happen than that the belief should arise that the reserve forces can entirely supersede the regular army. The idea of defending the country with the auxiliary forces alone, is simply preposterous. There is no doubt that, as supplementary forces, they would be of the greatest assistance to the regular army. The toast was duly honoured.

NAVAL AND MILITARY INTELLIGENCE:—The long looked for Royal Warrants relative to promotion and retirement in the Royal Artillery and Royal Engineers have been issued. The Warrants, two in number are signed as "given at our court at Aldershot" on the 5th of July, and the first directs that it is expedient that a battery of artillery be commanded by an officer having the rank of Major, all first captains shall be promoted to the regimental rank of Major, and that Second Captains being second in command of Batteries, shall in future be styled cap-

tains. A new scale of pay is laid down, and it is provided that a major actually in command of a battery shall receive 1s. 6d. per day command pay in addition. The half pay of a Major is to be 10s. per day, and an unattached general officer, or regimental Colonel of the Royal Artillery, not subject to Indian retiring regulations, may retire on £600 a year after 40 years service. Any officer not subject to Indian regulations may after 30 years service, retire upon the full pay of his rank, such full pay being reckoned, in the case of a regimental Lieut.-Col. at £1 a day. All officers retiring under these provisions will, relinquish the prospect of succeeding to the command of a brigade. The new scheme does not apply to the coast Brigade, cases of retirement from which will be specially dealt with. Any retired pay in excess of 1 6s per day, shall not be taken from the amount of £42,400 already fixed as the limit of the sum to be annually expended for the retired full pay of the Royal Artillery. The second warrant deals with the Royal Engineers, and prescribes that after the completion of the Batteries now being formed, the establishment of general officers in that Corps on the British list shall be three Generals, six Lieutenant Generals, and nine Major Generals. All Captains as in the artillery are to be promoted to the rank of Major, and the second Captains to Captains; a corresponding scale of pay and retiring allowances being fixed, with the stipulation that the sum expended in retired full pay be not more than £21,500 a year. The appearance of these warrants has given great satisfaction to the officers of the Royal Artillery and Royal Engineers, many of whom, it is expected will avail themselves of the conditions respecting retirement, by which an active promotion will no doubt, be set up throughout all ranks,

The municipal returns of Ontario for 1869 and 1870 have been published. The total number of acres assessed in the Province was 10,763,325. The total number of ratepayers was 315,763, of who 41,662 were ratepayers in separate towns and cities. The total value of assessed real estate, including the towns and cities, was \$276,933,259, showing an increased value of the confederation amounting to \$31,824,936, showing an increase of \$1,761,875 since confederation. The total assessed value of real estate and personal property in this Province for the years 1869 and 1870 was \$322,817,354. This shows a very fair amount of assets. On the other hand the liabilities were then as follows: Corporation Debentures, \$11,084,035, principal amount due the Municipal Loan Fund, \$4,761,487, interest overdue \$1,066,701; other liabilities, \$917,758; total, \$17,829,976. The total assets being \$322,817,354, leaves a balance clear of \$304,987,378. The property of the country must have largely increased since that time, so that if more recent statistics were available, a still more flattering exhibit could be made. As it is, it gives \$230.25 to each man woman and child in the Province, or about \$966 to each ratepayer.

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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, MONDAY, AUGUST 5, 1872.

LIEUT.-COLONEL WAINSWRIGHT GRIFFITHS, at present on a tour through British Columbia, has kindly consented to act as the Agent for the VOLUNTEER REVIEW in that Province.

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.

In those days of progressive social science when the basis on which society has existed for centuries is in process of subversion, when time-honored institutions are weighed in the scale of the political economist and their usefulness decided by the standard of their market value, the question naturally arises as to what duty or duties an individual owes the State? The answer is—obedience to the laws—and military service in its defence.

As both duties are imperative and arise out of the actual need of society, and as the latter is necessary to enforce respect for the former, the idea of compulsory military service in a free State, carries with it a principle repugnant to true liberty or social order.

It is evidently the true interests of the State to provide inducements to the military instincts of its people to enable them to render their natural duty in a voluntary manner, and the more closely this subject is studied the more apparent the truth becomes that a *Volunteer force* must in future be the basis of that armed nationality the idea of which has already given the death blow to the old system of a *national army*.

We have been led into those reflections by articles in the *Broad Arrow* of 6th July, in one of which, entitled *Bad Bargains*, the writer tries to shield Mr. CARDWELL from the effects of the criminal blunder made during his first year of office for the sake of showing a *sham* saving of £2,000,000 sterling, he disbanded 20,000 trained soldiers, whose places he tried to fill at a cost of £4,000,000 within two months, by less than 15,000 Transports of the greatest raff the British army has seen in its ranks (including boys of 16 and 17 years of age and very few able bodied men in the number).

Our contemporary states that the cost of the military prisons ranged from sixty to eighty thousand pounds sterling per annum, the whole force not reaching 70,000 men of all arms.

Such is the state of the boasted British Army under the Whig-Radical management; but that is not all, it is officered by *selection*. The winner of most marks at a competitive examination carries off a commission! One of the very first examples of this mode of doing business is a certain Lieutenant TRIBE sent red hot from the competition armed with the examiners' certificates as A. on joining his regiment, the 9th Lancers, his manners were so objectionable that the other officers of the corps refused to associate with him; courts or commissions of inquiry were held, and the upshot is told in the words of a contemporary:

"We learn that when Colonel FIENNES, of the 9th Lancers, returned from leave and resumed command, the adjutant-general proceeded to the regiment and intimated that, if the officers did not treat Lieutenant TRIBE with cordiality, it was possible they might be treated as those of the 10th Hussars were some fifty-seven years back—viz., distributed among other regiments. Colonel FIENNES, we hear, however, stated that every officer was prepared to send in his resignation sooner than associate with Lieutenant TRIBE. In consequence of this reply, the idea of breaking up the regiment has, we believe, been abandoned."

So that the result of the Whig-Radical reorganization of the British Army, to effect which they set constitutional law at defiance, has been to fill its ranks with all the ticket of leave men in the country and make a precedent for insubordination amongst its officers.

It is true our lively contemporary in his admiration of lay interference with military affairs tells his readers what Mr. CARDWELL ment to do. There is no occasion to question that gentleman's intentions, but what is now before the British Empire are the facts which his actions have adduced.

In the number of our contemporary referred to is also to be found a very clever article on *American Fire Brigades*, in which those peculiar institutions are prettily and accurately described and a desire expressed to have their blessings extended to English towns and villages. There is nothing now under the sun, and we may live to see the day when the English Mosos and Syskoy's will run *tail ter merchine* through London, Bristol or Liverpool, but we think the idea that they should supersede the *volunteers* as a defensive element, is about the wildest our respected contemporary has yet broached.

The picture drawn of the *morale* of English Volunteer corps is not a very cheering one, but the fault lies with those who are endeavoring to throw every obstacle in the way of the organization of a *defensive force* and that party is headed by the present responsible adviser of Her Majesty.

It is a well known fact that they refuse to furnish the chiefs of the Volunteer force with the reports of the officers of the regular service sent to inspect them, under the pitiful plea that those officers would be deterred from the proper execution of their duty by having their professional opinions made public. It is very certain that this pitiable feeling, if it at all exists, is to be found alone in the British service, and as the Whig-Radicals in their aspirations after freedom have found out the best way to foster it is by *confidential reports* on purely professional matters, they have established a system of espionage in the regular service as disreputable as the old French Police system, and CARDWELL may take rank as the modern *FORCUE*!

Our contemporary asserts that the English Volunteer system is in a moribund state, and that the *coup de grace* will be given by the compulsory militia system. We see no reason to believe the latter will be in any better condition than the regular army, or that its efficiency, if the country should need its services, will be different from the Volunteer service.

Imbued with purely *professional ideas*, as our contemporary appears to be, the value of the Volunteer system is entirely lost sight of, and its applicability to the very purpose for which England requires a military force in the British Isles completely ignored.

With her vast Empire and varied interests in all quarters of the Globe, Great Britain requires a *standing army* for foreign service of at least 100,000 effective men of all arms. As this force is destined to protect her foreign possessions, they must be paid in proportion to the service rendered, and matters should be so ordered that the service would be sought after by the middle class of society and not by its discouraging.

As the English people are beyond the age of aggressive warfare for territorial or other aggrandizement the force required for home service would be purely for defensive purposes, and we tell the *Broad Arrow* that object will never be attained by a ballotted militia, in which individuals will be compelled to serve against their inclinations and aptitude, but it is quite possible by a proper Volunteer organization.

In this connection our contemporary has been so kind as to notice the "Canadian Militia"—in its issue of 13th July, in the usual felicitous manner, but with a vague sense of expression and ideas which is certainly to be wondered at seeing that the fact of the Dominion having within the last six years concentrated on four different occasions ten to sixteen thousand well drilled and equipped soldiers to repel invasion from those dear friends of the Whig Radicals the people of the United States, is a matter of history quite as notorious as the celebrated Royal Warrant business—and infinitely more honorable.

We would also refer our contemporary to a very well written history of the War of 1812-15, to shew that Canada with small aid indeed from Great Britain successfully foiled all attempts of the Yankees to obtain a footing on her soil.

It has been well said that people should go abroad to hear news of themselves, and our contemporary certainly furnishes us with a rare dish of it; he says first, that there is no reliable information of the force and efficiency of the Canadian army to be obtained in England. Secondly, that service in our Volunteer force is compulsory. Thirdly, in our annual drill the men labour under great disadvantage for want of a sufficient number of instructors, and from the great heat of the season, this with the extreme cold are great obstacles in the way of progress. Fourthly, we are told that "appearances too are not in favour of the service—too much has been attempted to secure practical benefit. Not only is their infantry fifty or sixty regiments of the line, and an artillery proportionately strong—each service uniformed and equipped in precisely the same way as the Regular Army—but there are several Cavalry corps—navies amongst the rest—Musars, Rifle-men, Engineers, and even Highlanders." A little further on we are told a piece of news decidedly:—"Indeed the uniform of the *Carbineers* is quite a drug in the market, and as Colonial life leads to broader views of military matters, it is not unusual for a *Linesman* to substitute a straw hat for his forage cap, and an Engineer officer will perhaps replace the regulation black silk neckerchief by a light blue satin stock."

We copy this for the benefit of our readers that they may be enabled to have a clear view of the aspect the organization of the Canadian army bears in old England.

Fifthly, "The Canadian militia labour under the disadvantage of having no Perma-

nent Staff, such an institution was found to be too expensive a luxury to be indulged in, and the arms and stores are consequently left in a very precarious condition for fifty weeks of the year. A few old pensioners are employed to look after them; but if ever those men succeed in keeping the articles confided to their charge in proper order, as their defenders, they are of course useless, and it would not be very difficult for an invading army by means of an advanced guard of a few dozen ordinary burglars to rob the Canadians of both stores and arms.

We have no doubt that the latter feat could be accomplished if the whole Canadian people would sleep for a couple of weeks, and if the expert burglars were reinforced by a detachment of Mr. CARDWELL's latest addition to the British army.

However, his Excellency EARL DUFFERIN is expected from the great experience acquired at the British War Department to bring order out of this chaos, and as no doubt the re-organized British army will be the model on which the renovated Canadian army must be formed, we shall be relieved from the fear of the burglars by having them to watch instead of stealing our stores or arms.

It is evident that the severities of our climate renders successful invasion a very doubtful problem—that our own warfare will be defensive and also that we have acquired and trained a force equal to all its conditions and contingencies.

The Canadian soldier takes pride in a uniform which reminds him that he is serving his Queen and country, and that his fathers won an Empire for Great Britain in the same costume—he does not serve by compulsion, but voluntarily—in fact he is a *volunteer* in the strictest sense of the term—and he yields military service because he has a farm and homestead to defend, and he will hold by the sword what he has won from the forest by the axe.

We would remind our contemporary of an old aphorism which used to be illustrated by the story of a tiger and a little boy—the moral being *appearances often deceive*—and in the case of the uniform and organization of the Canadian army he has been most woefully "sat upon"—most probably by one of the selections by competitive examination.

It is a matter of history that within the last six years we have had from fifteen to twenty thousand soldiers concentrated on the few exposed points of a frontier over 1000 miles in length to resist invasion from the citizens of the United States, and that such concentration was effected in forty eight hours.

We have recognized the evil of *lay interference* in military affairs, the Hon. Sir G. E. CARTER, although the author of our Militia Bill, is not like Mr. CARDWELL, a Field Marshal in broadcloth, nor will he attend scientific experiments like Mr. GOSCHEN and catch the faulty shot in *flagrante delicto*—the discipline and military administration of the

Canadian army is left to the proper party its commander-in-chief the Adjutant-General; and the *Broad Arrow* must show us some more cheering effect of lay interference before we will consent to any experiment with our force—based on the model of the British army as reorganized by the Whig-Radicals. When they have effected a satisfactory organization it will be time enough to consider us.

Our contemporary's want of information on the state of the Canadian militia is a matter of surprise to us, all affairs connected therewith have had the widest publicity—our people do not believe in *Confidential Reports*—facts are stated as they exist the consequences being a matter of small concern, and the Adjutant-General's Reports on "the State of the Canadian militia" are as much matters of historical fact as the celebrated Royal Warrant of unconstitutional notoriety.

*Broad Arrow* of the 13th July, in an article on "the Canadian Militia," leaves us to infer that a very erroneous idea of the organization of our military force prevails in professional circles in England, and that its discipline is below the standard of the regular army as well as the uniforms adopted are of the most bizarre and unsuitable patterns, and that too much altogether has been sacrificed to mere show.

The admirable Reports of the Adjutant General and the publicity given to every thing connected with the Canadian army, led us to expect that English military journals would have mastered all its details ere this, especially as we are aware those Reports have been sent to the Editors, and they have also been reproduced in the columns of the *VOLUNTEER REVIEW* for the benefit of the rank and file of the Volunteer force.

We shall endeavor to give a history of the organization of the Canadian army, a synopsis of the Militia law and an account of the present state of the force it has called into existence.

In 1855 a force of about 5000 Volunteers were organized in independent companies of Rifle-men and Field batteries of Artillery in the then Provinces of Upper and Lower Canada—a very comprehensive militia law had been in existence for many years previously, but the Canadians had been living like the Sidonians of old in peace and security, and beyond the form of a muster on the Queen's birth-day, or the occasional Gazette of officers, little was known and less cared about the organization.

The internecine contest in the United States commencing in 1861, made it evident that a crisis was approaching which would render a more effective organization necessary, and with the aid of Colonel (now Major General) LYSON, a very effective bill was prepared for that purpose; its provisions, however, were too stringent for our social condition, and it had other faults of detail of which the principle was compulsory service. It



failed in securing either the concurrence of Parliament or the favor of the people, and was laid aside.

The *Trent* difficulty showed at once the necessity for a better organization than the country possessed, although the crisis brought out over 200,000 men, who answered to the call of officers themselves unskilled in drill or discipline, but who under the idea that they would be called upon to defend their country rapidly acquired a knowledge of both—as our neighbors over the lines understand a great deal better than the people of England the danger of having a hostile force on their flank and rear. The attitude assumed by the people of Canada had no small share in the peaceable solution of that difficulty. It led to a revision and amendment of the Militia law—a great extension of the *Active* force and the establishment of Military schools in which it was necessary for all candidates for commissions to obtain a certificate of qualification.

This state of affairs continued till the first Fenian Raid in 1866, and although a force of 10,000 men were under arms in forty eight hours, it was at once apparent that a better organization than any hitherto possessed by the country should be effected.

Up to this period each company was an independent organization, drill and instruction was local, and, with the exception of the Adjutant General, our highest staff officers were Brigade Majors.

Immediately after this crisis the distribution of the Active force into Provisional battalions was effected, a greater stringency in drill enforced, and the first attempt made at establishing District Camps of Instruction—and other reforms carried out.

In 1868 the present Militia law effected the complete organization of the force, it is the work of the Hon. Sir G. E. CARTIER, Bart., Minister of Militia and Defence; its basis is the old French Militia system which enabled Canada, then a dependency of the French Crown, with a population of 80,000 all told, of which probably 25,000 were capable of bearing arms, to keep at bay for five years the whole power of Great Britain and her Colonies, who had at one time as many soldiers in arms against her as the whole population amounted to—and in this contest the Drapeau blanc and golden lilies was lowered on this Continent amidst a blaze of glory and honor which no previous or subsequent success of the French arms has been able to eclipse.

By this Militia law Her Majesty the Queen is commander-in chief of the Land and Naval Militia of Canada—a Department of Militia and Defence is created—the Minister being responsible for all expenditure and the civil administration of the force—he is assisted by a Deputy and other civil officers.

The Militia is composed of all the male inhabitants capable of bearing arms between the ages of eighteen and sixty years—with trifling exceptions.

It is divided into four classes, the first—being all those between the ages of eighteen and thirty unmarried or widowers without children.

The second class—from the age of thirty to forty five years who are unmarried or widowers without children.

The third class—from the age of eighteen to forty-five who are married or widowers with children.

The fourth class—those between the ages of forty-five and sixty.

The militia shall be divided into *Active* and *Reserve*.

The *Active* militia shall consist of the *Volunteer*, the *Regular* and *Marine* militia.

The Volunteers to be composed of corps raised by voluntary enlistment.

The *Regular* militia will be composed of *ballotted* men.

The *Marine* militia may be either volunteers or ballotted.

The *Reserve* militia—and this is the basis of the system similar to the old French Canadian militia—consists of the whole of the men not serving in the *Active* militia.

By this law Canada is divided into *eleven* military districts, nine under the original law, and two since Manitoba and British Columbia was admitted into the confederation.

Each military district is divided into *Brigade* and *Regimental* divisions, the latter being divided into company divisions.

Each military district is commanded by a *Deputy Adjutant General* with the rank of *Lieutenant Colonel*, the great majority are or have been officers of the *Regular* army, assisted by one or two *Brigade Majors* according to the size of the district, and this with *Storekeepers*, *Paymasters*, &c, forms the permanent staff.

Each regimental division is commanded by a *Lieutenant Colonel* of *Reserve* militia, two *Majors*, as many *Captains*, *Lieutenants* and *Ensigns* as there are companies—as each division generally embraces a county—and as the population varies the number of company divisions is also variable.

Those officers furnish accurate yearly returns of all the militia liable to serve in their respective districts, and in case of necessity would furnish the ballotted men—for service according to their classes—that provision being reserved not so much to enforce service as to regulate it.

The *General Staff* consists of an *Adjutant General* with the rank of *Colonel*, a *Deputy Adjutant General* with the rank of *Lieutenant Colonel*, an *assistant Adjutant General* with the same rank, a *Director of Stores* also a *Lieutenant Colonel*, and the usual staff of clerks, &c.

The *Active* force which numbers altogether 45,000 men in round numbers is raised wholly by volunteering. Any one desirous of raising a company gets the signatures of 55 men capable of serving to a service roll binding themselves to serve for a period of three years or till discharged—in this he is

generally but not always assisted by his *Lieutenant* and *Ensign*—the list when completed is transmitted to the *Brigade Major*—who is always thoroughly acquainted with the aspirant's antecedents and through the *District officer* reaches the *Adjutant General* who accepts or rejects as the case may be—if accepted the corps is at once supplied with arms and uniforms for which the *Captain* is accountable, put under the hands of a *drill instructor* and attached to the next local battalion of the *Active* force.

A clause in the *Militia* law allows the *Volunteer* the privilege in time of peace of retiring from the service after giving notice of his intention to his commanding officer six months previously.

If the Officers have not previously qualified in a military school they are only provisionally gazetted, not commissioned, and are allowed three months to obtain the necessary certificate, if they fail to do so they are superseded, so that throughout all Canada it would be rather a rare case to find an officer who could not drill his company at company drill, or manœuvre it at battalion drill, and a large proportion could take part in brigade movements.

As nearly as possible the force consists of—

27 Troops of Cavalry numbering officers and men.....	1,666
10 Field batteries of Artillery (of 42 guns 441 horses) officers and men	750
70 Batteries garrison Artillery officers and men.....	4,108
4 Companies Engineers officers and men.....	232
623 Companies of Infantry and Rifles making 85 battalions—strength about.....	37,500
8 Companies on service in the North West, say.....	400
<b>Total.....</b>	<b>44,656</b>

As new corps are being continually gazetted the average number will be rather above that given—but last year over 36,000 men of the force were under canvas for a period of sixteen day's drill.

There have also been organized within the last year two schools of Gunnery—one at Quebec under Lieut. Colonel T. B. STRANGE, a distinguished scientist of the Royal Artillery; another at Kingston under Lieut. Colonel FRENCH of the same corps.

In both those schools to each of which are attached a permanent battery of garrison Artillery, a technical education is given to the officers of the Canadian artillery.

Thus with the exception of properly organized Engineer corps the force is complete in all its arms, and it is uniformed in all cases like the regular service, and we would defy any one to find out a difference except in favor of the physique and better clothing of the Canadian soldier. The arms are the Snider-Enfield rifle, and we have sent a sample to Wimbledon which have already showed what is known of its use.

Our English friends must understand once for all that whatever the trained soldier in the Regular army may know of the science of warfare and its practical application in the fields of Europe or the East, there is a very different state of matters to be encountered on this Continent, and it would be as well to recollect that the Regular troops suffered their most serious as well as disgraceful defeats at the hands of a Militia not half as effective as the Canadian army.

In judging our force, therefore, by the standard of the Regular army the *Broad Arrow* is endeavoring to make a comparison without a parallel case—the same conditions do not exist, nor is there any probability they ever will—our geographical position, climate, and the topography of the country renders invasion almost an impossibility—on a frontier of over 1000 miles continuous with our neighbours, and for one-third of the distance with scarce a mile of navigable water between, we could only be assailed at four points, and failure at any one would be destruction to the assailant—while actual success would not paralyze defence.

We have proved the Volunteer system to be that best adapted to our purpose, our soldiers are rapidly acquiring the knowledge of veterans, and our friends may rest assured the Canadian militia will be no discredit to the uniform they take pride in.

It would be doing the Canadian army a great service if leading Military journals like the *Broad Arrow* would give more attention to its organization, and we cannot help thinking from the description given of the chaotic state of the reorganized British army with its cumbersome devices and provisions that an analysis of our system might be profitable, and what has so admirably succeeded with the Englishman in the back-woods of Canada might be applicable to the Englishman in the fields of Surrey and Kent.

If Great Britain is anxious to know the state of our military force, the Canadian people are equally interested in the prosperity of the Regular and Reserve forces of their Sovereign.

Our readers will be pleased to learn the great success attending the efforts of the representatives of the Canadian army at Wimbledon. The articles from the *London Telegraph* copied in other columns are not only highly complimentary to our people, but honorable as well.

It will give the people of Great Britain an idea of what a *Volunteer army* properly organized really is, and will show them the necessity of bringing military science and practice to their own firesides if they mean to have a national army "worth the paper on which the Estimates for its support is written."

To those of our readers who have not been in England the value of the feat performed by the force under Major Worsley will not

be properly appreciated—inasmuch as they know that the Canadian army can produce marksmen of equal prowess—and a contest at the *bull's*, is so much a matter of course that the winning of a prize from over 2,500 individuals of the crack shots in Great Britain would be looked on as no extraordinary event.

Still the value of the achievement will be very much enhanced when it is known that the climate is much more variable than in Canada, and that the latter part of the match was shot under very unfavorable circumstances.

The description given by the *Telegraph* shows that the Canadians have achieved indeed a great victory.

The *Broad Arrow* has given its readers a very unfavorable impression of the morale of the rank and file of the British army, it does not appear that all the experiments which have been tried, tends in the slightest degree to improve the character of the private soldier.

In another column will be found an article from the United States *Army and Navy Journal*, giving a description of the regular army of that power, as bad if not worse than that given of the British army.

It would appear to be an evil inherent in standing armies that service in their ranks should be abandoned to the worst characters in society, nor will it be remedied till the pay of the soldier is assimilated to his earnings as a civilian, and till military service is entwined in the minds of the people as the first duty to society.

The annual match of the Ontario Rifle Association is to take place at Toronto on 16th September and following days. Sir PERCY TALLEY'S celebrated cup valued at 100 guineas, is to be shot for and prizes embracing in the aggregate over \$1500.

The Hastings Rifle Association will hold their fourth annual Rifle Match at Belleville, on Tuesday, August 6th. The list of prizes contains money and valuables for \$500. We trust our readers will patronize both matches largely as this is the sort of sport our people should engage in.

"We were greatly shocked yesterday morning at receiving a telegram informing us of the death of John Bolton, Esq., the Representative of Charlotte in the Canadian Commons. Mr. Bolton had just recovered from a severe attack of pleurisy and sciatica, during which he was afraid that his lungs might be seriously affected, but he thought all danger past, and a few days ago he wrote to us to say that he was almost quite well and that he hoped to be able this week to commence his canvass of the County. On Sunday he went to church, and no doubt thought that his health was fully re-established. On Monday morning he was dead.

It is said that the immediate cause of his death was disease of the heart. Mr. Bolton who was about 48 years of age, we believe, a native of England, and received his education in that country. He was partner in the firm of Chipman & Bolton, ship-builders and ship owners, and general merchants, of St. Stephen, for many years, during which he maintained a high character. In 1867 he first entered political life. He had been a Confederate, and it was generally supposed by those who knew little of that he would be a tame follower of the Government, but he soon gave evidence of the independence of spirit and the sterling honesty of purpose which actuated him throughout his whole Parliamentary career, and in the very first Session of the Dominion Parliament he won by his ability and integrity a high place in the esteem of all parties. There were few more able men than Mr. Bolton in the Canadian Commons: there was probably not one more esteemed and respected. He was ever listened to attentively, and his words, earnest, sincere frank and thoughtful, seldom failed to produce the effect he desired. His death is a loss not only to Charlotte, which was honored in having such a man as its Representative, but to the whole Dominion, in which, unfortunately, the number of honest, intelligent, independent men, willing to take part in public life is not as great as could be desired."

The above extract from the *Freeman*, St. John, N.B., is one of many testimonies to the memory of the late member of the House of Commons for Charlotte in that Province. As he was well known in Ottawa his family have the sympathy of the community.

The German Emperor signed an order a few days ago giving the whole of the German field artillery the same organization as that which now exists in the Bavarian artillery. Each corps d'armee will consequently contain two sections of 4 foot-batteries each; the second will consist of six foot-batteries and two horse-batteries, the latter of which will be attached to the cavalry division. There will be as many regiments of field artillery in the German army as there are divisions, i.e. two attached to the guards corps and fifty-three to the line corps. In order to complete the artillery establishment in accordance with this scheme, a new battery will be attached to the 1st, 6th, 9th, and 10th corps of the guard, and two batteries to the 7th, 8th, and 11th corps.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—The very agreeable character of this preparation has rendered it a general favorite. The *Civil Service Gazette* remarks:—"The singular success which Mr. Epps attained by his homoeopathic preparation of cocoa has never been surpassed by any experimentalist. By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills." Made simply with boiling water or milk. Sold by the Trade only in 1lb., 1lb., and 1lb tin-lined packets, labelled—JAMES EPPS & Co., Homoeopathic Chemists, London, England.

## GOOD AS GOLD.

Who shall judge him from his manners  
Who shall know him by his dress?  
Princes may be fit for princes,  
Princes fit for something less,  
Crumbled shirt and dirty jacket  
May beclothe the golden ore,  
Or the deepest thoughts and feelings,  
Sutta vest can do no more,

There are streams of golden nectar,  
Ever flowing out of stone;  
There are purple beds and golden,  
Hidden crushed and overthrown,  
God who counts by souls not dress,  
Loves and prospers you and me,  
While he values thrones the highest,  
But as pebbles in the sea.

Man upraised above his fellows,  
Oft forgets his fellows then,  
Masters, rulers, lords remember,  
That your meanest kinsmen are men,  
Men of thought and men of fame,  
Claiming rights to golden sunshine  
In a man's ennobling name.

There are foam-embroidered oceans,  
There are little wood-clad hills;  
There are feeble larch high saplings,  
There are cedar on the hills.  
God, who counts by souls, not stations,  
Loves and prospers you and me,  
For to him all vain distinctions  
Are as pebbles in the sea.

Tolling hands alone are builders  
Of a nation's wealth and fame;  
Titled laziness is pensioned,  
Fed and fattened on the same,  
By the sweat of other foreheads,  
Living only to rejoice,  
While the poor man's outraged freedom,  
Vainly lifts its feeble voice.

Truth and justice are eternal.  
Born with loveliness and light,  
Secret wrongs shall never prosper  
While there is a sunny right;  
God, whose world-wide voice is ringing  
Boundless love to you and me,  
Heeds oppression, with its titles,  
But as pebbles in the sea.

## THE ARMY OF THE UNITED STATES.

(From the U.S. Army and Navy Journal.)

In comparing our own with foreign armies, it is easy to be misunderstood; and I will here say that I believe no men are braver, more patriotic, self-sacrificing and enduring of hardships and privations of all kinds than American soldiers. There are none susceptible of better discipline than they; although, from having led more independent lives than foreign troops, they do not so readily yield to it, and none can stand up more squarely and honestly in hard battle. No man should more readily, or can more heartily say this than myself, for I served through our entire war in command of a body of troops which bore a conspicuous part in nearly all the great battles of the West, and I never had occasion to complain of the conduct in battle of any regiment or company.

I say not a word in disparagement of our men, but I do most fervently maintain that we lost incalculably by not employing the means in our hands for bringing our commands to their highest efficiency. This resulted principally from having men at the head of military affairs, who, not being soldiers themselves, did not appreciate the necessity of discipline and instruction, nor understand the steps necessary to secure them. This was, in the main, true of our leading staff officers who had much to do in regulating affairs, and on whose advice the civilians mainly rested. They had been office men so long, entirely separated from troops, that they had lost the spirit and character of soldiers.

The morale of the rank and file of our regular army is exceedingly unsatisfactory; and to no one is this discouraging condition so apparent as to officers serving with troops.

There is no remedy for desertion, and one sees his authority quietly set aside, and a third of his force abandon the colors every year, without the power to prevent it, and without any apparent notice being taken of it, or any adequate remedy provided for it by those in authority. If we stop desertion, other matters will soon correct themselves. To stop this we must simply enlist good men. We must require proof of identity and character. There will be no trouble in obtaining this, as any men worthy to be enlisted can easily furnish such proof. I have applied this rule for the past year to my own regiment with perfect success.

Our present system requires only physical qualifications for enlistment, and ignores moral character. The result is, that common thieves, discharged convicts, deserters, and vagabonds find an easy entrance in our army. A party of five New York thieves within the past year enlisted, and were assigned to one of the companies now forming my garrison. They have all, at different times since, "made their raise," and deserted; the last one but a few days since garrotted a discharged soldier and robbed him of some \$300.

The plan here proposed is perfectly feasible; for as about one third of our men would re-enlist at the end of their term, we should need but about four thousand recruits a year, or three hundred and fifty a month, and it is absurd to say that a nation of forty million people will not yield this number of good men for its army. But our system has never sought them. This change may require more than ten minutes' daily time usually devoted to his duties by an officer on recruiting service, and a few more branch rendezvous; but there will be no difficulty if it is intelligently made. The prevention of desertion will then be the fear of disgrace, and almost certain detection and rendition; the present trouble being that, in nine cases out of ten, when a man deserts, his name on the roll is an alias, and his residence fictitious.

A thorough application of this plan would save the government a million dollars annually now lost by desertion, and besides secure an incalculable advantage in the moral character, respectability, and efficiency of our army. It is absurd to reject a thoroughly well tried, good man because he has lost an eye, or tooth, or an ear, perhaps in battle, and to receive a recruit who, for all that is known of him, may not possess an attribute that makes him better than a beast.

A peculiarity of German military organization is the plan by which the fighting army is made paramount, and every thing else required to minister to it, so that a general always knows his exact force; while with us every thing necessary for the administration of the army is drawn back out of the fighting material in the most objectionable way, by selecting the best officers and men, thereby doubly weakening it, instead of constantly drawing up to it elements of strength. In our war the administrative and the fighting organizations were blended, so as to continually deceive the commander and the government as to the force available for active operations, while victories were expected corresponding to the strength of both.

The German staff and administration are models of efficiency and economy. The former contains one hundred and fifteen officers, headed by General Von Moltke, is composed of the very best men of the army, selected with the utmost care, after every possible trial by service with the troops, and courses of training at the best schools. The officers are purely soldiers, and have noth-

ing to do with administration, except in the highest military sense as chiefs of staff. The administration which pays, feeds, clothes, and supplies the army, is made up of men who have risen from the ranks, and shown special fitness for that mercantile style of work.

Our army is thirty thousand strong, being one or two thousand under the strength of a Prussian army corps in time of war. We find the troops of one of their army corps, commanded by seven general officers, one for the corps, two for the divisions, and four for the brigades. This does not materially differ from the number of general officers allowed for the line of our army, when the present incumbents have passed out of the positions that expire with their rotiracy.

The Prussians have fourteen staff officers in all at the seven headquarters, from a 2d lieutenant, who is adjutant of a brigade to a colonel, who is chief of staff of the corps; six field officers, who are quartermasters and commissariats, who are captains and lieutenants with the train, twenty-four paymasters, who are second lieutenants with battalions; three officers with the telegraph division; one with the bakery; eighteen with the battalion of engineers, which is armed and drilled like infantry; and eighty-one medical officers, none above the rank of captain; in all, 143.

We have in the line of our army sixteen hundred officers; and in the staff, including acting assistant surgeons, six hundred. If to these we add the persons who numbering about six hundred, are employed by the staff as their assistants and receive about as much pay as officers—say one hundred dollars monthly—we have twelve hundred with including the officers of the line detailed as quartermaster and commissaries. If these are added it will be found that we employ with our present system as quartermaster and commissaries. If these are added it will be found that we employ with our present system as many officers, or their equivalents, to administer the army as we have fighting officers in it. This fact is its own commentary, and shows how much is required to administer the administration. This works injuriously to the public service in many ways. It is true that our engineer corps performs many duties done in the Prussian service by civilians, and that our extended domain and great number of separate posts require a larger force of medical officers, and add also to the labor and difficulty of administration, while our ordnance corps perform excellently a work which the Prussian artillery regiments do equally well in addition to their other duties. But a glance shows that we have an immense preponderance of "staff" both in numbers, and, more especially, in rank. The high rank of the staff gives them extravagant pay, with which their service is not commensurate, and unfit them for the petty duties incident to a small establishment. They, for a like reason, habitually seek to exalt their duties and stations, and call for increased establishments of officers, clerks, superintendents, masters, storekeepers, and chief men, who do no labor, but rate on the pay-roll with lieutenants.

By their numbers and rank, and the fact that the chief of each branch, with several his higher officers, is always stationed in Washington, they become a strong social power, and are enabled largely to influence legislation and executive action in their own favor for and against the line.

As the staff have charge of the army archives and records, Congress is largely dependent upon them for information, while

social relations and settled lives in Washington add to their influence. Their duties group them about the general officers of the army, with whom close relations of friendship spring up, gaining them the favor and influence of these high officers in all questions affecting their status.

The staff officers, also, from their rank, numbers, and nearness to the executive, habitually and by almost insensible degrees, arrogate to themselves powers and privileges which belong only to the commander in chief. Until the heads of staff departments have nearly all gained independence of army control, and bear the same relation to the Secretary of War as the commander-in-chief himself—becoming, in fact, independent commanders of their own branches. This is destructive of military organization, and fatal to the harmonious & economical administration of military affairs. The staff departments are now substantially independent bodies, instead of connected links of a great chain of military administration.

With so many sources of power, there can be no unity of action, and this leads to waste and extravagance. As one of many examples of this, I will mention that at Fort Gibson, which had been without a suitable hospital since the war, one was constructed in the spring of 1871 by order of the surgeon general of the army, at an expense of about \$12,000, when the commander knew that the post would be broken up, as it was a few months later.

A major-general commanding a department may at any time find a second lieutenant of ordnance or engineers at his own post holding correlative power with himself, flying his own flag, and controlling his own resources. The commander of the department in which New York is situated, finds within his command no less than a dozen military establishments, controlling perhaps all the sinews and appliances of war, over which he has no authority. Such a system fosters insubordination, and is rapidly destroying that kindness, respect and fraternity so essential to an army, and for which ours has been distinguished.

The members of the engineer corps of our army are in no sense soldiers, being separated entirely from troops, performing no military duties, but holding military rank, and wearing the uniform of the army; and the same can be said of the ordnance, whose sympathy with the army springs mainly from the associations of a common Alma Mater. Our system virtually deprives the army; of our most talented men, by placing them in these branches of the service which are not in the least military. This separated administration of each branch tends to magnify its importance in the eyes of its own officers, who expand and amplify their methods and systems, without commensurate good to the service, and sometimes to its positive detriment. Since the war the United States have been divided, for purposes of military administration, into military divisions, departments, districts, and posts. The posts each have a quartermaster—generally an officer of the regiment stationed there—who does the actual work of the department, and usually with enlisted men. Then at each separate district department, and military division headquarters is a quartermaster of the regular establishment, almost always of a high rank, with a small army of clerks and other civilian employees about him at high pay, who do an amount of compiling reports and writing letters beyond all calculation. These officers require from the post quartermasters a great number of reports upon all possible subjects; and as the post quartermasters are

usually allowed only one, and often no clerk, most of their time is occupied in this kind of work, greatly to the detriment of their proper duties. These officers at higher headquarters always surrounded themselves with a large administrative establishment, and a great part of the funds appropriated for the department is thus consumed in keeping up its own cumbersome machinery.

The advantage of all this is not obvious, as these intermediate officers have no power whatever to do any final act. The only purpose of all this machinery seems to be to make places for a superabundance of officers, with so much rank as to unfit them for their legitimate duties.

The general efficiency of the system itself is open to grave question, and experience of the world has been that these centralized organizations, have failed in great emergencies. Ours may be said to have done so in our late war, as such success as we had in this direction was won only by lavish expenditure. The quality of nearly every thing which the centralized departments pretended to furnish excepting food, arms and ammunition, was several grades below the standard, and lower than was paid for, the blankets and stationery being detestable cheats, and the clothing the vilest quality of swindling "shoddy." The Prussian Government has open accounts only with the colonel of a regiment, who is made responsible for the funds by which it is maintained, and supplied with food, clothing, arms and all other requisite articles, while we open in Washington a book account with every man from the colonel to the last recruit. The Germans have also with the army a corps of auditors, officers of the treasury, who close these accounts on the spot.

What has been said of our Quartermaster's Department is in a measure true of the rest, and in nothing more than in the papering they all treat us to. By a little calculation it can be proven that, unless the system is corrected, there will in a short time, be too few public buildings in Washington to contain the army archives. For instance, every colonel is made superintendent of the recruiting service for his regiment. To report at the end of the month that he has recruited one man requires five feet square of the best folio-post paper, and the same if he has recruited no one. At the end of each quarter, for a post-commander to satisfy the Ordnance Department as to the disposition of a few cartridges, requires three duodecimo books of thirty six pages each. These absurdities are all avoided in the German system.

At the close of our war an effort was made by officers of the line, who realized the evils of a system of exclusive sutlers, to have abolished it altogether. The practice of the sutlers has been to bribe the officer and rob the soldier, by selling at cost to the former and making it up by overcharging the latter. This system was finally abolished, and a law passed making it the duty of the Subsistence Department to furnish the articles formerly sold by the sutler to both officers and men, at cost. This was very advantageous to the line, but the law was disliked by the Subsistence Department, because it added to their duties, and was considered by many degrading. A deliberate intention not to execute the law was soon manifested. The first excuse for not carrying it out was that Congress had made no special appropriation, and the adjutant-general published an order excusing the Subsistence Department from compliance with the law, although the general appropriation for that department was so large that none was asked for during

the following year. This was the entering wedge to kill the law.

Then the adjutant-gen. authorized department commanders to appoint as many traders at posts as should desire to trade, only requiring evidence of fitness. This was an admirable arrangement, as it gave troops the advantage of competition; but the law was still evaded by the Subsistence Department, as these traders keep all articles that the troops wanted. Not content to let matters rest here, a clause was incorporated in a new law of 1870, at the instance of some special interest, providing that the Secretary of War might appoint one trader at each post for the benefit of the travelling public. This was ingeniously worded, but the practical result is to provide one sutler whose schedule of prices is not supervised as before, but who is free to make his own terms, while the commanding officer must protect him in his exclusive trade rights, and the post council has no voice in his nomination or right to assess for the benefit of the post. Besides, the sutlers could not formerly farm out their privileges as they now do. I have reliable information of one trader who pays \$12,000, and of another who pays \$5,000 per annum for his monopoly. These sums must, of course be made up from extra charges to troops. These are some of the evils which result to the line of the army from the failure of the Subsistence Department.

I cite these examples that it may be seen how our system fosters special interests. Whenever questions arise between line and staff, as is frequently the case they are referred to the chief of that branch of the staff which they affect and, his decision is usually final. In other words, a party to the question is made a final umpire, and he is invariably of the staff.

The funds appropriated for the general benefit of the army are not so expended as to be equally beneficial to staff and line. At a department headquarters, as far from Washington as staff officers ever get, is found every luxury in quarters, grounds, and appliances of living, while distant posts go year after year without even comforts. Fort Leavenworth and the posts of the same department are examples of this. I have known distant posts denied the authority to employ a blacksmith or carpenter, who was almost indispensably necessary, "as the number of civilian employees authorized would not allow it," while the chief of the department, who made this decision, was then employing a dozen civilians to sod his grounds.

This is but one instance of what takes place constantly.

The demand for iron ships in Great Britain accompanied by a revival of commerce, has led to some results worthy of notice. Pig iron has risen \$7 to \$10 a ton and rails and sheet iron have advanced \$15 to \$20 per ton. The wages of the iron workers have risen ten per cent., while their hours for work has come down from ten to nine. These changes, it is noticed are equivalent to a rise of 20 per cent. in the cost of labor. In consequence of these important changes we learn from the English reports that the cost of constructing an improved propeller has risen within a year from \$135 to \$155 a ton, and is still rising. The Clyde builders have been compelled to open mines in Spain and Norway. These facts go far to reduce the discrimination against builders in the United States, and if Congress would remit the duties on ship building materials and other taxes now imposed, the shipbuilders would have an opportunity to carry on their business on a more extended scale than ever.

## THE CANADIAN PACIFIC RAILWAY.

The London *Spectator*, in the course of a hostile criticism of the Canadian guaranteed negotiations, which we do not here discuss, makes an estimate of the probable value and importance of our projected Pacific Railway, compared with which some of the sanguine anticipations formed on this side of the Atlantic appear cautious and hesitating. The Canadian Pacific Railway, the *Spectator* believes, is "an undertaking so important to the Empire and so valuable to mankind as to deserve not only a guarantee, but a direct and large subvention. Joining the two great oceans by a road through the most fertile of our American territories, the glorious valley of the Saskatchewan, which may one day maintain twenty millions of English speaking men, the Railroad will be the highway of the world, the alternative line between Europe and Asia, the base from which we may at will attack China or rescue India. From Southampton to Calcutta we shall travel by steam, and never pass through a foot of territory outside our Dominion. The only drawback to the project is that when completed the road will be so inconceivably valuable that we shall not be able to bear to give it up even to a Canadian kingdom or republic. The most enthusiastic of our Pacific Railroad advocates here can scarcely utter words of eloquence more effective for persuasion than the quiet suggestions of the *Spectator*, which are put in a matter-of-course way, as if a second opinion on the subject were out of the question. Should the *Spectator's* idea as to the road being inconceivably valuable to the Empire once fairly take possession of the public mind "at home," the anti colonial or separation party there will find the realization of its policy indefinitely postponed, as far as Canada is concerned.

## ARE WE THREATENED WITH A NATIONAL WATER FAMINE?

The intelligence which reaches us from various parts of the world seems to invest this question with present and paramount importance. In a recent article we commented on the exceptional and phenomenal cold of the past Winter, and showed that it might, perhaps, be attributable to the periodic return of what eminent meteorologists have called "the cold wave" through which our planet is supposed to pass in every ten or fifteen years. The Astronomer Royal of Scotland, in common with other able and cautious physicists predicted last year such an event, and sought to explain it on broad cosmical principles. The diminution of our annual heat supply derived from solar radiation, it is easy to see, will be marked by a diminution in the amount of water evaporated from the billows of the ocean and delivered to the winds to be transported over the great continental masses of the globe for their irrigation and refreshment. The rain fall statistics and returns for the present year, so far as received, appear to bear out the natural inference from the above facts, and give us timely warning to be prepared for great scarcity of water during the coming summer. The rains of the season have fallen short of their usual abundance this spring in the United States. The returns of England, carefully collected by Mr. Glaisher, give a general average only twenty two inches for the past year, while the proper mean rainfall of England is thirty inches. In the tropics where the atmospheric machinery takes up the greatest amount of moisture from the sea for terrestrial distribution we

find similar results. From the returns of the Windward West Indies the official figures for last December show a deficiency greater than has been known in twenty four years preceding; and the average of the year 1871 was twenty eight per cent or more than one fourth below that of the preceding twenty four years. For the month of January, 1871, the returns are still more discouraging, the average falling short of that for the same month of the twenty-five preceding years by thirty five per cent, or more than one third. We see good reason for calling the attention of the whole country to the most frugal husbanding of the precious water supply distilled from the clouds. It may not now be too late to warn agriculturists to prepare for any emergency by the construction of ponds and reservoirs for the irrigation of the soil. But the warning is certainly opportune and of vital importance in all the cities and towns of the land to economize the water, that in case of blighting droughts and epidemic disease the terror of water famine may not have to be endured.

## THE DISCOVERY OF LIVINGSTONE.

The story of the discovery of Dr Livingstone, as related by the New York *Herald* Commissioner, is proof enough either that there is no Mr. STANLEY in Africa at all, or, if there is, that he is one of the most accomplished of the many talented romancers who have lost their regard for truth in endeavoring to discover the true source of the Nile. The first and perhaps most striking feature in the narrative is the "time" made, for Mr. STANLEY is as particular in recording his rate of speed as is Bosses with Dexter. On the 23rd September he left a place with an unpronounceable name for another place similarly afflicted, distant 400 miles. On the way he captured two vil-lages, fought three battles, was prostrated with high fever for eleven days, spent four days on an oasis which drained on the weary traveller like Delmonico's on a thirsty loafer, and yet reached the end of his journey on the 16th October! Four hundred miles in four days across a trackless desert unpolluted by railroads and unblessed with hotels, is equal to the best efforts of Weston or Capt. Barclay, and far ahead of the famous gallop from Atlanta to the sea. A discovery was made during this lightning passage which seems to have escaped the lynx-eyed Mongo Park. At a terrible moment when the intrepid STANLEY was alternately shaking asunder with ague and baking the earth with the heat of his fever, when his followers all save six, had struck work either from sympathy with the eight hour movement or from a conviction that payment of their wages was problematical, when hordes of hostile Ujjians threatened front and rear, "the *Herald* Commissioner hoisted the American flag, and the trembling savages fled in disorder." Sacred among their primitive traditions, towering over their ancient legends like the green cyclomen over the plains of old Babylon, over all the virgin plains on which they pitched their kraals and enjoyed one another's society with a knife and fork, the recollection of the claims for Indirect Damages demanded from their friend LIVINGSTONE'S Government must have reigned supreme; and lest they too should be dragged before the Geneva Tribunal and libelled by the Associated Press, they made a direct bee line for the Great Sahara on the elevation of the Star Spangled Banner! It was a stupendous victory of coloured calico over brute force; but the strangest feature of it all is that this reverence of the Ujjians for the American flag, should never have been discovered by the Roman Generals dur-

ing the Punic wars. In the meeting of STANLEY and LIVINGSTONE there was nothing very romantic, but the incident was beautifully pathetic, and has thus been immortalized by an American poet:—

From the shore of Tanganyika,  
From the Lebala waters,  
From Wajawa and Mirambo,  
Wanyambeli and Ujiji,  
Abo Uanyembe,  
And the mighty Thingumbani,  
Come the sounds of bitter sighing,  
Come a voice of utter sadness,  
And "O dear-ing," and "Omy-ing,"  
But nary note of gladness,  
For they've gone and went and parted,  
Separated, broken hearted,  
And they'll never meet no more.  
This side of fair Jordan's shore,  
For those happy days are o'er,  
And ament their sad adieu,  
Breaks the natives' wild "Hoo-hoo!  
Hoo-hoo Hoo-hoo!"

LIVINGSTONE steadfastly refused to be led out of the wilderness; and expressed his determination to remain two years longer with the Ujjians, from which it may be inferred that STANLEY, in a rash moment, either informed him of the existence of the Boston Jubilee or solicited a professional interview."—*Mail*.

The working of the German railways in war time cannot be the mechanical marvel it is sometimes supposed to be, if the following description is correct:

In no country of the world do we meet with such theorizing relative to the construction of rolling stock as in Germany; for every kind of goods to be conveyed a particular carriage has been designed, excellent in its especial domain, but of little or no use for any other purpose. The continual passing and repassing of empty waggons, with useless wear and tear of the lines and great complication of construction, is the consequence. These technicalities have greatly hampered German railways; even the most explicit order for waggons is a puzzle to the officer appointed over rolling stock, as well as to the railway officials when the waggons are required for special purposes. The above is Baron Von Weber's "Training of Railways for War, in time of peace." He likes the German stations no better, and says.—"Connected with the English system we find a greater number of platforms, in each of which the gross amount of landing capability for beasts and war material is less; but it is manifest that, with a number of short platforms, from which access to any rail is open, much more can be accomplished in this respect than would be the case if the sum of the lengths of the short stages were united into a few large ones, to which access was only possible by the shunting aside of large trains. As to signals the Germans are in the greatest confusion. The number of ideas conveyed by signals which a German railway company considers necessary to the carrying on of the service amounts to fifty eight, three times as many as are used in France and England for the same purpose, and the number of objects made use of for signalling, such as optical telegraphs, dics, flags, arrows, cages, etc., amounts to forty-eight. Add to this the fact that some of the fifty-eight ideas are conveyed in twenty different forms, and we find that the total number of signals on German lines amounts to nearly a thousand! Our western neighbors on both sides of the Channel, of whose railroad institutions we have not yet taken sufficient notice, are contented with a fourth of the ideas expressed, and a tenth part of the signal forms, and that without in the least degree infringing upon the safety and punctuality of the service; for uniformity and simplicity are of such importance in signalling, that the expression of several possible ideas required, but occasionally should be sacrificed to them.