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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, MARCH 11, 1872. No. 11.

NEWS OF THE WEEK.

The *Times* says that if the fifth claim for losses by transfer of the United States Commercial Marine to the British Flag be persisted in England will declare a reference to the Geneva Board of Arbitration impossible.

The Queen will leave for Germany on 26th inst. and return on 16th April.

The Commission appointed to investigate the loss of the *Magaera* severely censures the whole Admiralty Administration, a department which the Whig Radicals have completely disorganized and destroyed.

The case for the claimant of theTichborne Estates and title has been withdrawn by his counsel, the claimant himself being arrested and lodged in Newgate on a warrant granted by the Lord Chief Justice for perjury, bail fixed at £50,000 sterling. It is said the Marquis of Bute and his sister, Lady Rivers will become his securities.

The *Court Circular* gives currency to a rumour that the Imperial Government contemplates recalling Sir Edward Thornton from Washington, and sending out another Ambassador.

Affairs in France are still in a critical state: Ponyer Quertier, Minister of Finance has resigned; the portfolio has been offered to Casimer Periere, but he has declined accepting it.

Louis Blanc endeavours to retard the bill of pains and penalties against his friends of the International, and a great uproar was created in the Assembly, because the Provisional Government would give no explanation relative to the cause of the resignation of the Minister of Finance. Another Ministerial crisis is imminent.

The German Ambassador to France has been summond to Berlin for the purpose of reporting to the Government of the Empire his opinions respecting the stability of the Government of France.

It is reported in Berlin that the Kaisers' decision on the San Juan case will be adverse to Great Britain.

A conference of Evangelical and Catholic clergy has been held in Rome on the question of the Papacy of the Apostle St. Peter. In the event of any complications Germany is bound to defend Italy against France.

The Prince of Servia is about to marry a Russian Princess, an event which Slavonic organs declare will be the first in a series having for its object the driving of Turks out of Europe.

Spain has appointed Rear Admiral J. Palode Barnarbe, in command of the South Atlantic Squadon, Ambassador to Washington. This event has created considerable consternation in the United States as the rear admiral is well known to be no particular friend of theYankees, his duties bringing him in direct contact with their intriques and intermeddling in South America. The Cabinet at Washington has been in secret session as to whether they would receive or reject him, if the latter they may be made to feel that Spain will not stand on trifles, and that she has a naval force capable of doing some mischief; she is not likely to be fooled by big talk like John Bull's imbeciles.

The snow blockade on the Pacific Railway has only been raised to give place to disastrous floods washing away the track and doing a large amount of damage.

Investigations are going on before the House of Representatives as to the complicity of Government in the sale of arms and munitions of war to France during the contest of 1870. Mr. Fisk admitted such had been the case but it had been stopped and "that they had no power to prevent their people from selling arms to whom they pleased"— those are the people who howl about neutrality. Judge Barnard, and Mayor Halo, of New York, are on trial for fraud connected with the Tammany ring.

The New Brunswick Legislature was opened on 28th February. The maratime provinces have been visited by heavy snow storms.

Advices from Fort Garry speak of the splendid weather they are enjoying there. Mr. Moberly and party engaged on the Pacific Railway survey had reached Edmonton House on the Saskatchewan in safety.

It is stated that a change has been made in the Executive Government of Manitoba.

The *Canada Gazette* announces a general thanksgiving for 15th April.

Captain Edmund Wilson R. N., has published a pamphlet, entitled, "Our Future Ironclad Feet," which he dedicates, "by the permission," to Admiral Sir Thomas Symonds K. C. B. One of his chief points is that steam power *must always be subservient to sail power*, and he predicts the coming of a time, when any admiral commanding our "*Ocean* ironclad fleet" will feel proud in conducting it, under almost any circumstance, *without expending a pound of coal, unless when engaged in action.* In this view, however. Captain Wilson may expect to find some of the highest scientific naval officers opposed to him, and so far as our own judgment goes, no view can be nore detrimental to the efficiency of the Service and the perfection of our ships than one which bases its claims to attention on the saving of coal. It is a maxim amounting almost to an axiom with those who are acquainted, though ever so little, with machinery, that when you have once adopted it for any purpose whatever it must be carried out in all the perfection of mechanical detail of which it is capable, or it will fail to work either economically or efficiently. At present the authorities engaged in naval construction seem to be of divided mind as to the extent to which the principle of converting our ships into machines of war should be carried, and we already owe the loss of the *Captain* to their lack of scientific insight and determination. If the proprietor of a mill had muddled his time away trying to make a combination of sail power with steam power, he would have ground very little corn, and neither his sails nor his steam would have shown to advantage as a motive force. But the British Admirality is attempting something quite as foolish with our ships of war. The time has come when this state of muddle in the official intellect must give place to something like scientific intelligence and consistency. Either we must go back to the days of our old wooden walls—to the time when it was the pride of the British seamen to man the yards and spread sail with a rapidity of execution which left him without a rival among the navies of the world, or we must part company forever with these pleasant traditions, and make the machinery of the present day as perfect as our forefathers made theirs. We want, if possible, to get rid of the very notion of a ship with all its misleading nomenclature, and substitute for it that of a machine. When this is clearly apprehended we shall hear less about the saving of a few tons of coal by using sail, and a great deal more about the speedy means of converting our seamen into stokers and engineers, and our officers into practical mechanics. We have much more to say on this subject which we must reserve for another opportunity.—*Broad Arrow.*

THE ATTACK AND DEFENCE OF FLEETS.

(From the London Army and Navy Gazette.)

There was a larger gathering than usual on Monday, at the Royal United Service Institution, to hear Captain Colomb's second paper on the "Attack and Defence of fleets." This lecturer, after briefly summarizing the bases of naval tactics, as drawn out in detail in his former paper, proceeded to show that all nations has assumed the "end on" position as that in which ships composing fleets must, in future, maintain towards their enemies. That fact, a speed of ten knots, a turning power of some two minutes through eight points of the compass on an arc whose radius was two and a half times the length of the ships, were the limiting conditions of formation and movement of a modern fleet. There were then the three weapons—gun, ram, and torpedo—by which fleets may be attacked and defended and amongst which the choice lay. Speaking of the gun, it was held that, at 1,000 yards, only about one per cent, of shot fired at sea would strike a ship permanently at that distance and broadside on. It was shown that when two fleets were approaching each other end on at ten knots, the range was altering at the rate of 11 yards in ten seconds. "Under such circumstances observed the lecturer, "to fire was to waste powder. Hence he did not think that bow fire—now so much sought after—was useful, except in chase of a retiring foe. Coming to the ram, he considered that while it was the chief weapon of the attack upon a single ship, the end-on position of the ships in a fleet formation was a complete defence against it, and pushed it back in a fleet action to a subordinate office. Of the Harvey torpedo Captain Colomb qualified a more favorable opinion he had formerly expressed. He did not think it an effective fleet weapon at the present moment, and appeared disinclined to speculate on its future, for which, by the way, he was severely handled by Commander Pusey.

In the absence of faith in the ram or torpedo as the chief weapon for a fleet to use, Captain Colomb fell back upon the gun, and held that the main object of fleet strategy was still, as of yore, to bring the fire of your whole fleet on a part of your enemy's. Dividing the possible formations in which fleets might fight into four classes—namely, the extended front and small depth; the narrow front and great depth; equality of front and depth; and the system of isolated attacks by groups or pelotons; he went on to say that, practically, the two first classes included the two last, and then endeavored to show that in his opinion a battle between two formations in extended front would give no decided advantage to either side. The two fleets would pass through each other discharging a point-blank broadside fire at the moment of passing, and re forming at the distance of about a mile for another inter-passage of the same kind. He drew particular attention to his view that no effective ramming could take place in such a battle, and that as only three minutes would elapse between the two fleets getting into range and their shock, there was no time either for manœuvring or for effective bow fire.

On these grounds the lecturer held it false strategy to meet an extended front in the same formations; and, showing the nature of an attack by a narrow front and great depth on an extended front, held that the former was the proper formation to assume. It could advance within 2 000 or 3.000 yards, or within three or four minutes of time upon the extended front without disclosing the nature of the attack. It might then cut through the centre of the enemy's line, or pass close by either flank by a very slight movement to right or left and without any signal. The result would be to bring the whole fleet, ship after ship, fresh, clear of smoke, at intervals of a few seconds, upon one or two of the enemy's, who would be continually involved in smoke, and unable to see how the attack was progressing. Their ships would receive the successive broadsides of the whole attacking force without being able to return more than one or at the most two rounds. Captain Colomb was strongly condemnatory of compromises in formation, such as the equal front and depth, and held that an audacious determination to "win all or lose all" was the best policy. He also condemned the isolated attacks of pelotons, and thought that if a peloton was met by an equal number of ships in line ahead employing the attack described, it would suffer defeat.

In the discussion which followed, Admiral Sir G. Sartorius, spoke on the ram question not so much denying the lecturer's positions as maintaining that the conditions of naval war were even more changed than he admitted. Commander E. Dawson defended the peloton by asserting that its formation would not be maintained in practice, and held that there would be no such clear passage through each other by two fleets as was imagined.

THE ARMAMENT OF OUR FORTS.

In reviewing Owen's modern artillery in our last number we submitted some reflections upon the necessity for a more thorough and systematic course of artillery instruction, and particularly for the immediate preparation of suitable books of reference. That there will be but little hesitation in bringing about a reform in these respects cannot be doubted. A question of vastly greater importance, however, and one not so easily and timely solved, is that of the armament of our forts. Have we any guns on land or sea that can compete with those which would be brought against us in case of war with a foreign power? The Chief of Ordnance in his last reports cites, as he has done in previous years, the report of the mixed board of 1867, stating that 805 smooth-bore guns (20 inch, 15-inch, and 13 inch), 810 rifle guns (10-inch and 12-inch), and 300 mortars (15-inch and 13-inch), would be required in addition to the guns on hand. The Chief of Ordnance does not intend to convey the impression that the particular guns mentioned were recommended by the board after any adequate investigations into the general question of the armament of our works, for the resolution subsequently adopted by the board, and printed with its proceedings, shows that the action of the board had no such scope.

Of the guns recommended there are on hand two 20-inch (one not mounted) and 320 15-inch guns, but not a single rifled gun. It appears, therefore, that we could have to depend entirely upon the 15-inch guns in case of war. In the face of the results at Fort Fisher with the Parrott guns it is not likely that the Ordnance Department would like to adopt them, but would there be any alternative in case of war? It is instructive to review the question of rifle guns in our seacoast service, but we can touch upon some salient points only. The Ordnance Department has made the 15 inch gun its main reliance, regarding the question of rifled guns as of secondary importance. In the next place it has been a cardinal theory of the Ordnance Department that what rifled guns might be required should be made of cast iron. These points are illustrated by the record, to which we shall refer another week.

Admitting that the 15-inch gun is an admirable gun for special uses, as we have already abundantly argued that it is, and that within its own range it can cope with the heaviest rifle guns sheltered by the most approved modern armor, there remains the fact that vessels of war armed with rifles can knock our forts down about our ears in spite of the 15 inch, by taking up position beyond its effective range. The advice to hold our fire until the vessels get within range, as given by certain Ordnance officers in the *Journal* and elsewhere is very wise; but suppose the vessels are not so obliging? It is trivial to enter into an argument to show what disadvantages the artillerists will be under who are forced to meet with 15-inch guns only a hostile fleet armed with heavy rifles. So far from the truth is it that our main reliance should be upon smooth bores, that by far the largest proportion of guns should be rifles. We do not set our opinion against that of so distinguished an officer as the late General Rodman. We quote the opinion of the great engineer Todleben or rather the committee of which he was the head, appointed by the Emperor of Russia in 1865 to investigate the subject of "The Manufacture of Navy Guns for Fleets and Fortresses."

At the present state of the question in reference to the coast defences against the attack of an iron-clad fleet, it was considered a necessity to arm the coast batteries with guns which will be able to injure or destroy an iron clad fleet, even at a long distance.

To obtain this mark the ordnance must possess two qualities in the very highest degree:

First, to produce the most destructive effect on the plates hit by the shot.

Second, to hit the mark with the greatest accuracy.

These two conditions can only be fulfilled by employing rifled guns of large bore, made of the most suitable metal, viz, cast steel.

Although spherical shot thrown from smooth-bore guns in some cases may act successfully, this effect can only be obtained at small distances. . . . . Even if the distance is not great, smooth-bore guns cannot be compared with rifle guns, unless a much heavier shot is employed, which of course is a great inconvenience for handling the gun, while also a less number of rounds can be fired.

For this reason every fortress exposed to the attack of an iron-clad fleet should be armed with rifle guns of large bore, and coast defences departing from this principle lose the best means of their defence and put themselves wilfully in a critical condition.

We find the quotation in the report of the Engineer board, of which Major-General Barnard was the head, on "Fabrication of Iron for Defensive Purposes." The report is one of great value to the engineer and artillerist, and is pregnant with matter bearing on the subject of which we are treating. In summing up the chapter on artillery it is stated that the smooth-bore gun is almost unknown to the armaments of Europe. Speaking of our 15-inch gun, the Board says "it is quite safe to say that it is a less effective gun for the most essential purposes of a great gun, viz., for inflicting injury upon the most powerful class of iron-clads than the Krupp 11-inch, or the English 12-inch, or even 10-inch gun. In a foot note it is added that "it is maintained in Europe that even 9-inch

rifles, *e. g.*, the Woolwich 12-ton or the Krupp 96-pounder, are for most purposes and at considerable distances superior to the 15-inch."

We are firmly of the conviction that for all our *forts* could do, a single iron-clad with a few modern rifles, could anchor off the Horse Shoe in Hampton Roads and, if her ammunition held out for a day's firing, reduce Fort Monroe to a harmless ruin. Fort Carroll and Fort Deleware—bandboxes of stone—the main defences of Baltimore and Philadelphia, could offer no effectual resistance. Without the heaviest calibre of rifled guns, the defences of New York could not prevent an iron-clad fleet from laying that imperial city under tribute. We speak now without regard to torpedoes as a means to harbor defence, or of the Navy, whose part in the defence of our harbors we have considered in two previous articles.

It is suggested in the report on the fabrition of iron for defensive purposes, previously referred to that our 15 inch gun might be converted into a 11-inch or 12-inch rifle by reaming it out and inserting a tube of wrought iron. We are not aware that any experiments have been made with guns of so large a calibre, and a mechanical difficulty in making the coiled tube for so large a calibre might be experienced at first on account of the lack of the requisite skill or machinery at our shops. In view of the grave importance of this subject we hope immediate steps may be taken to ascertain the exact course pursued in the conversions at Woolwich, and a number of trial guns made here. We hope also that Congress may give the Chief of Ordnance the means to test the invention of Dr. Woodbridge, which we hear commended very highly. This dead-lock between Congress and the Ordnance Department must be terminated in some way or other, or a great disaster may befall us.

No one can read the report on the Fabrications of Iron without coming to the conclusion that breech loading guns of large calibre have not yet lost the field in their contest with muzzle-loaders. That the Krupp gun is a success it is idle to deny. About 9,000 of them have been supplied to Germany, Russia, Austria, Belgium, Spain and other countries. Of the heavy calibres there have been 600 from 6 to 8 inches; 700 from 8 to 9 inches: 400 from 9 to 10 inches; 50 of 10 inches; 150 of 11 inches; 6 of 12 inches; and 2 of 14 inches calibre. Besides these, it is known that Krupp has large orders from Russia for 9, 10, and 11-inch guns. It is very probable, then, that in fixing ultimately the system of rifled guns for our forts we shall be called upon to seriously consider the question of breech-loaders. But our immediate and pressing wants must be met in other ways. We hope something definite and tangible has been decided upon by the engineers with reference to torpedo defence of our harbors. Let us have at least a few trial mortars of large calibre, and one large rifled mortar for experiment. The cost would be comparatively trifling, and the most important and unexpected results might be attained. The subject of vertical fire is yet in its infancy.—*U. S. Army and Navy Journal.*

There are in New Brunswick 388 miles of railway in working order; in course of construction and to be finished within eighteen months, 220; under contract, and at present being located 160 miles. In all, 768 miles which will cost, when finished, $23,785,000; of which the Government of New Brunswick and of the Dominion contribute over $15,000,000 in cash, and 1,729,000 acres of land.

A DYING NATION.

The accounts of the famine in Persia, which continues to arrive in great detail, bid fair to treat the world to a spectacle of a calamity the like of which has not been witnessed, in historic times at least,—the sudden extinction of a nation by want of food. This has really been the fate of the great States which once filled the valley of the Euphrates, and it is a fate which has for centuries been threatening some modern States —Spain, for instance. Man has stript the soil of trees; the absence of trees has brought droughts: droughts have slowly diminished the productive powers of the ground, and finally destroyed them,—the population, in the meantime, dwindling in numbers and vitality. Spain had forty millions of people in the time of the Romans, and flowed with milk and honey; it is now an arid region, only half of it under cultivation, with only sixteen million of inhabitants, and, if modern science had not come to its aid, would probably go the way of Babylon. Persia was one of the most powerful States of antiquity, and even in the fourteenth century was able to support the army of Tamerlane, who marched without commissariat or baggage during a bloody contest. It is now almost a wilderness, with a population of about two millions,—about half of them nomads, which is rapidly perishing from famine brought on by three years' drought. The worst of it is, that owing to the absence of either common roads or railroads, it seems to be impossible for the charity of the rest of the world to reach the sufferers, so that there is really a strong prospect of the total depopulation of the country. The moral of this horrible story is,—look after your trees.—*Nation.*

ENGLISH SEA FORTS.—The London *Times* of a recent date has an account of the first of the iron sea-forts, to be erected at Spitehead as a protection to Portsmouth. This fort, the skeleton of which has, after being put together in the manufacturer's yard for examination has been taken to pieces again packed off by rail to Spitehead. It will cost a million pounds sterling; the shell alone costing £450,000. The skeleton weighs about 2,400 tons. It is to be fitted up with fifteen inch plates, costing $1,000 each. This fort, and the others which are to be constructed like it, will be each 700 feet in circumference and 230 in height, and will be armed with two tiers of guns, one tier comprising 24, 600 pounders and the other 25, 460 pounders. The two principal forts, commanding the only deep channel leading from the area into Portsmouth harbor, will be about two thousand yards apart. Their guns, it is calculated will pierce twelve inch armor, at two thousand yards distance, while no gun yet invented is credited with power enough to injure the plates of the fort, however near the fort it may be brought. The English Government congratulates itself that these forts render Portsmouth virtually impregnable, and the "Thunderer" devotes more than a column of editorial to an estimate of their efficiency in case of what it significantly calls a "not wholly improbable war."

REVOLUTION IN GUNS.—The "battle of the guns" having been brought to a conclusion, at least for a time, we learn that the new muzzle-loader is taking the place of the breech loader in our Royal Artillery batteries. The gun with which Sir W. Armstrong astonished the world soon after the close of the Crimean war has now given place to a more powerful weapon, with which our artillerists expect to be able to hold their own against the best breech-loaders of Krupp It is incidentally mentioned in the "Naval and Military Intelligence" of the *Times* that "the whole of the guns on the Armstrong principle are being withdrawn from service." Along with this announcement should be read a passage from a report of a committee of the House of Commons, who declared in 1863 that even at that moment there was no practical evidence "that any other system of constructing rifled ordnance exists which could be compared to that of Sir W. Armstrong." The guns which have been made on his principle must be numbered by thousands.—*Volunteer News.*

COAST FORTIFICATIONS.—Preparations are being completed for mounting a large number of the 64 pounder rifled muzzle-loading guns (old smooth-bore cast-iron 32-pounder guns, bored out and fitted with a rifled steel tube, on Major Palliser's plan) in the Portsdown forts, the Hilsea lines at the entrance to Portsea Island from the mainland, and other parts of fortifications defending the Ports mouth other than on the sea face of the defences. These latter will be armed with as large rifled guns as room can be found within the works to mount them, and the maximum size of gun that can be mounted under the circumstances will be found to be the 10 inch one of 18 tons.—*Broad Arrow.*

CANADIAN SILVER COIN.—Mr. W. Wier of Montreal announces that by arrangement with the Government, he is prepared to distribute the new silver coin to the public at par in such sums as are wanted, from one dollar upwards. Mr. Wier also states that arrangements are in progress for the distribution of the coin in places which, owing to the want of bank agencies, have hitherto had considerable difficulty in obtaining a supply. The receipts of silver coin last week amounted to $50,000, and each succeeding steamer is expected to bring a further supply until the demand for the coin has been freely met. Care will be taken at the same time against an over issue of the new coin. Last week's receipts consisted of halves and quarters only, an accident to the machinery at the mint having delayed the coinage of the smaller pieces, a quantity of which however, is expected by the next steamer.

The London *Telegraph*, commenting on the establishment of a book printing house at Rouse's Point by Mr. John Lovell, of Montreal, says Mr. Lovell not only imports his books into the Dominion, but also Yankee notions of "smartness." It lays the whole blame, however, on the Canadian tariff, and says "the proper remedy is, either the imposition on American reprints of a duty so high that the supply of pirated editions would be unprofitable, or that all imports of such literature should be prohibited."

The Havana papers publish some curious statistics regarding the importation into the Island of Cuba, of the arms intended for the use of the army and volunteers. Since November 1, 1868, there have been introduced, Remington rifles, 40,280; Peabody, 5,551; Peabody carbines, 1,874; counting also the arms consigned to Spain, the total result is 92,266, at a cost of $1,450,000 gold.

A new cable, four thousand miles in length, is being manufactured in London for the "European and South American Telegraph Company."

CORRESPONDENCE.

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

FROM MONTREAL.

(BY OUR OWN CORRESPONDENT.

The tenth annual meeting of the Frontier Rifle Association was held at Franklin Centre a short while ago. Col. Fletcher acted as chairman, reports were read and submitted, and a handsome balance on hand was shown by the Treasurer. The following were elected office bearers for the ensuing year.

President—Lieut. Col. Fletcher.

Vice Presidents—Lieuts.-Colonel Rogers, Reid and Macdonald; Majors McNaughton, Lucas and McFee; Captains Johnson and Breadner.

Secretary-Treasurer—Lieut.-Col. McEachern.

Council—The President, Vice Presidents, Secretary-Treasurer, and Captains of companies.

It was decided to hold the next annual matches at Havelock, at a time not to interfere with the annual camp drill. A list of matches and prizes were then drawn up. The munificient gratuity of $25.00 was voted to Mr. McCarroll who had the misfortune to injure his sight at the last match.

The association is worthy of every support as it has done so much to improve the efficiency of the border volunteers, and with such an energetic president its success and and results are not doubtful.

The Government has agreed to the establishment of a post-office for the benefit of the colony of ex Papal Zouaves located at Lake Megantic. It will be called Piopolos in honor of His Holiness the Pope.

A warrant has been issued for the arrest of another Captain for the non-payment to his men of money paid to him for the purpose some time ago; such cases are becoming too frequent I regret to say.

The volunteers who turned out in June last to aid the civil power have not been paid yet, in spite of the favourable recommendation of the city council. some quibble having arisen, whereby the deserving lads are again put off and snubbed. Surely for a few hundred dollars, and well spent too, it would be policy to silence the murmurings and stop the discontent that is prevailing. The question at law is not shall they be paid or not, but as to whether the city or the unauthorized parties who called them out, shall bear the expense?

This is a good opportunity for the government to step in and do justice to itself and the men. They promptly obeyed orders and turned out without questioning the why and wherefore, and if there be any defect in the Militia Law, the Government ought in justice to the force to pay the men and test the matter by continuing the suit instituted by the commanding officers for the recovery of the same. B.

THE ROYAL MILITARY ACADEMY, WOOLWICH.

The following are the successful candidates in the recent competition for admission to the Royal Military Academy:—

No. in Order of Merit.	No. in Examination.	Names.	Total No. of Marks
1 ..	198..	M.H.P. Riall Sankey	8,807
2 ..	196..	Hon. M. G. Talbot..	7,678
3 ..	112..	E. V. Hughes.....	7,619
4 ..	194..	E. L. Hall.....	6,747
5 ..	6..	A. L. Mein.....	6,532
6 ..	4..	G. E. Shute.....	6,437
7 ..	31.	G. C. P. Onslow....	6,340
8 .	75..	C. Maxwell.....	6,329
9 ..	92..	H. L. Mulholland...	6,303
10 ..	76..	T. S. Lett.....	6,032
11 ..	107..	R. A. Wahab.....	5,935
12 ..	93..	W. F. H. Stafford...	5,875
13 .	122..	A. Burton.....	5,831
14 ..	132..	E. S E. Childers....	5,743
15 ..	98..	W. Coles.....	5,720
16 ..	230..	T. S. Baldock.....	5,687
17 ..	32..	E. G. Newcome.....	5,651
18 ..	86..	J. G. Day.....	5,647
19 ..	61..	H. R. Ross.....	5,641
20 ..	136..	F. N. Maude.....	5,625
21 ..	172..	B. O. Cochrane.....	6,619
22 ..	48..	E. G. Edwards. ...	5.502
23 ..	155..	E. Gunner	5,399
24 ..	124..	E. A. Waller	5,396
25 ..	119..	E. U. Blackett ...	5,387
26 .	215..	E. Hardy.....	5,345
27 ..	185..	W. F. Cleeve. ...	5,335
28 ..	209 ..	C. V. W. Stratford .	5,332
29 ..	123..	E. J. Ottley.....	5,304
30 ..	42 ..	G. M. Porter.....	5,286
31 ..	182..	St. J. St.G. Ord .	5.278
32 ..	214..	F. C. Farmer	5,252
33 ..	162	J. A. Grieve	5,110
34 ..	89..	C. D M. Gall.....	5,099
35 ..	53..	W. A. E. St. Clair..	5,087
36 ..	91..	A. M. Carden.....	5.040
37 ..	13..	P. Waldron	5,027
38 ..	175..	H. J. W. Jerome ...	5,004
39 ..	184..	W. R. M. Daunt....	4,954
40 ..	197..	A. H. Kenny.....	4,896

Civil Service Commission, Feb. 5.

N. B.—In the above list, of the four successful candidates from Ireland three were exclusively prepared and passed on first trial by Mr. Edgar Wilson, 19, Lower Leeson street, in this city. The names of the young gentlemen are:—(1) Mr. Thomas Stack house Lett,* son of the late Dr. Lett, Fellow and Tutor, Trinity College, Dublin, 10th place, being ahead of all Irish competitors, (2) Mr. Edward John Ottley, son of the late W. Ottley, Esq, C. E., 27th place; (3) Mr. Francis Wilson, son of Laurence Waldron, Esq., D. L., 38, Rutland-square, West. It is also specially worthy of notice that at the recent examination for the Woods and Forest Department of India, Mr. J. H. Oliver obtained first place from the United Kingdom, on brilliant answering.

*Thomas Stackhouse Lett is a cousin of Capt. W. P. Lett, City Clerk, of this City.

The great electro-magnet recently made for the Stevens's Institute, at Hoboken, is the largest in the world. The length of wire in the coils is 4,488. The iron cores are over three feet long and weigh 183 pounds each. The lifting force is estimated at between 30 and 40 tons.

Very handsome wall baskets may be made from old hoop skirts by forming them into loops and rings, then arranging into a basket, which may afterward be painted, varnished and ornamented with gilt paper.

A MARINE NOVELTY.

The *North British Mail* gives an account of the new iron steam vessel built in Renfrew, Scotland, for the Canadian Government, which has been launched and will sail almost immediately for this country. This new steamer will be of great service, and its construction will be regarded by the commercial men of Canada as an evidence of a desire on the part of the Dominion Government to promote their interest in every possible way. The *Mail* says:

A new iron steam vessel, of peculiar design and model arrangement, constructed by Messrs. W. Simmons & Co., was on Saturday launched from the London Works, Renfrew. It is named *Canada* and is the property of the Canadian Government, and is the first vessel of this description ever launched. It combines in itself the respective properties of a powerful dredge, a steam hopper barge, and a screw tug steamer. It is intended to keep the harbors and rivers of North America clear of sitting and obstructions at a moderate expense, as it has in one bottom all the properties of the more expensive dredge fleets usual in extensive operations, and by its use ordinary rivers and harbors can be deepened and improved at much less expense than is customary with dredges, barges, and tug-steamers, with their crews and necessary equipment. The mode of working is as follows:—The vessel propels itself to the place requiring dredging; it is then moored by the steam winches to the guide buoys at both bows and quarters; the dredging girder is then lowered to the bottom by steam; the machinery connected therewith is then set in motion and drives a range of steel mounted buckets, which cuts, lifts, and deposits into the vessel's own hopper cavity about 200 tons of spoil. The vessel being now loaded the girder is then raised flush with the deck the moorings are disconnected from the buoys, and the vessel assumes the properties of a screw steamer. Another connection of the machinery is then put into gear, driving the propellor. The pilot then takes his station at the rudder, the Captain takes his station on the bridge, the dredging crew convert themselves into sailors, and the vessel steams away to deep sea water say from 10 to 20 miles, at the rate of eight knots per hour, where, by another arrangement of the steam machinery, the bottom hopper doors open and the 200 tons cargo is in a moment dropped in thirty or forty fathoms depth of water. The bottom doors are then closed, and the steamer returns for another cargo and becomes again a dredger, the process being repeated. This vessel is consequently well suited for exposed localities, and is capable of lifting, conveying, and depositing 500 to 1000 tons of spoil per day; and by its use, in limited operations, the cost of dredging is greatly reduced. There are many rising commercial seaports and rivers which can be deepened by this system, whose trade and prospects would not warrant the heavy expenditure of an entire dredging fleet.

The following officers have been permitted to commute their retiring allowance:—Captain H. F. Saunders, retired full pay, 3rd West India Regiment, with honorary rank of Lieutenant-Colonel; Lieutenant J. R. J. Bramly, late Royal Artillery, retired on an annuity; Lieutenant J. A. Campbell, late Royal Artillery, retired on an annuity; Quartermaster G. Howard, half pay, late British Italian Legion.

DOMINION OF CANADA.

MILITIA GENERAL ORDERS.

HEAD QUARTERS,

Ottawa, 8th March, 1872.

GENERAL ORDERS (6).

No. 1.

ACTIVE MILITIA.

Precedence of Inspectors of Artillery.

1. Adverting to No. 1 of General Orders (19) 1st September 1871, which is hereby cancelled, it is to be understood that to en able officers of the Royal Artillery, who are lent by the Imperial Government to the Dominion Government as Artillery Inspectors and Instructors, to carry out properly the inspection and superintend the training of Artillery and Engineer Corps, such directions and orders as these officers may find it necessary to give from time to time on matters affecting Engineer and Artillery Drill, care of stores, "Material" &c., in possession of corps, are to be considered as emanating from the Adjutant General and obeyed accordingly. The officers above alluded to take rank, precedence and command in the Militia according to their dates of commissions.

Command of "A" and "B" Batteries.

2. No. 18 of General Orders (24) 20th October, 1871, is hereby cancelled. The Schools of Gunnery at Kingston and Quebec (A and B Batteries) which form part of the Active Militia, will be under the command of the officers commanding the respective Military districts in which those batteries are stationed, in all matters relating to military command, discipline, supply, clothing, &c., and in accordance with paragraphs 117 and 382 of the Regulations and Orders for the Active Militia, 1870. The Brigade Major being the proper channel of communication and medium, for conveying orders between officers commanding Districts, and commanders of Corps, adherence to this rule is to be as strictly observed by the commandants of A and B Batteries, as by those of other corps.

Notification of Vacancies.

3. The Commandants of A and B Batteries will notify through the respective Brigade Majors and commanding Officers of Districts, for the information of the Adjutant General, whenever there are vacancies in the respective Batteries for the admission of officers, non-commissioned officers and Gunners of Artillery Corps, for purposes of duty and instruction, and they will transmit through the same channel such periodical States and Returns as may from time to time be required.

Inspections.

4. The Commandants of A and B Batteries will however in their capacity as Inspectors of Artillery when required to make periodical inspections of Artillery and Engineer corps continue to report on the result of such inspections direct to the Adjutant General, and whenever it is desirable to make such inspection due notification will be transmitted by the Adjutant General to the Inspectors of Artillery detailing the corps, time, and place of Inspection,

Corps on duty.

5. It is notified for general information that the officers, non-commissioned officers and men belonging or attached to the Schools of Gunnery at Kingston and Quebec (A and B Batteries) as well as those belonging to the Provisional Battalion of Riflemen now on duty in the Province of Manitoba, are under the same general system relative to command, discipline, supply and supervision applicable to all corps of the Active Militia when placed on duty, as defined in the Militia Act and Orders and Regulations of the Active Militia—and all officers, non commissioned officers and men belonging to the above named corps are reminded that so long as they are retained on Military duty they are for purposes of discipline under the Queen's Regulations and Articles of War—(This paragraph No. 5 to be read on three successive *full parades* of A and B Batteries of Artillery and the Provisional Battalion of Riflemen now on duty in the Province of Manitoba.

National anthem.

6. Paragraph 12 of the Regulations and Orders for the Active Militia, &c., 1870, is hereby amended by substituting for the words "first part of a slow march" on fifth line, the words "the first part of the National anthem (6 bars)."

No. 2.

PROVINCE OF ONTARIO.

49th "Hastings" Battalion of Rifles.

To be Lieutenant:

Ensign Edward Harrison, M. S., vice Hutchison Carruthers, who is hereby permitted to retire retaining rank.

BREVET.

To be Major:

Captain George Dunn Rowe, V. B., No. 4 Company, 49th Battalion, from 30th November, 1871.

PROVINCE OF NOVA SCOTIA.

66th "Halifax" Battalion of Infantry.

The resignation of Lieutenant William L. Hetherington is hereby accepted.

BREVET.

To be Majors:

Captain Edward Lockhart Coleman, Q. F. O., 1st "Halifax" Brigade G. B., from 24th December, 1871.

Captain Henry J. Parker, Q. F. O., 1st "Halifax" Brigade of Artillery, from 4th January, 1872.

By Command of His Excellency the Governor General.

P. ROBERTSON-ROSS, Colonel,
Adjutant-General of Militia,
Canada

THE TREATY OF WASHINGTON

LETTER FROM MR. GLADSTONE.

NEW YORK, March 1 —The following is the letter of Mr. Gladstone to the London correspondent of the *World*, to which allusion was made by the cable on the 15th of February:—

No. 10 DOWNING STREET,
Whitehall, Feb. 11.

SIR,—I am much obliged by your courteous letter. Permit me to assure you that it is an entire mistake to suppose I have ever said that every rational mind must see but one meaning to the Treaty of Washington. Nothing would have induced me to use such an expression. The limit of my assertions stated briefly was, and is as follows—"I believe the meaning of the Treaty to be clear and unambiguous, according to any legitimate test whatever which can be applied to it. This proposition I am, of course, ready to sustain in argument, but every other person is equally entitled to think, if he see cause that what I hope to be clear and unambiguous, is dark or doubtful or that it is clear and unambiguous in a sense contrary to mine. What I trust is that others when in close examination will not see cause to think any such thing. This point a little time and patience cannot fail thoroughly to elucidate, setting aside the statement which I did not use, and which I think open to severe animadversion. I have always understood and still understand, that any man is at liberty to hold and to state with the utmost confidence, an opinion as to the meaning of the document, and this I have done without being open to the charge of what I conceive to be a gross offence, namely his presuming to restrain for others liberty which he claims himself. Indeed, speaking accordingly to the usages and habits of the English public life, I feel as if the utterance of such propositions were not so much of truth as a truism. If however, the truth or truism be applicable to documents in general it requires but a moderate share of modesty to adopt it in the case of the documents such as the treaty and its protocols.

I have the honor to be, Sir,
Your obedient servant,
W. E. GLADSTONE.

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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, MARCH 11, 1872.

The general considerations governing the whole system of field fortifications are comprised in the principles involved in the art of war as a science.

Those are: strategy or the art of directing the operations of a campaign with reference to design and execution.

General tactics, or the art of manœuvring armies in the field.

Logistics—the art of moving troops and material of war.

Engineering—the art of defence and offense.

Minor tactics—the art of training troops to the use of weapons, drill, and discipline.

The connection of those principles with the subject laid before our readers is sufficiently obvious, and as all the hostilities in which we may be involved will be waged in a strictly defensive war; strategy, tactics and engineering, are the chief questions with which we have got to deal.

The application of strategy in this case must be based on the general topographical features of the territory to be defended, as affecting operations of the assailing force; and the system of warfare best adapted to the numbers and social conditions of the assailed.

Tactical considerations must be adapted to the peculiar topographical features of the frontier.

And the Engineering skill will be manifested by the construction of such works at the points to be assailed as will compensate for numerical superiority.

The frontier defences will naturally attract attention as the first to bear the brunt of invasion, and the system adopted must be governed by the considerations of the force available, the facilities for rapid transport and concentration, the position of the base of operations, as to whether one or more strong points shall be fortified and held in force or a continuous line of natural and artificial obstacles created.

The opinion of all strategists is against the latter alternative as it gives the enemy the absolute choice of the point of attack and enables him to approach it in such a manner as to offer no opportunity for endangering his own communications, but there may be political as well as military resources which would render this course imperative, especially on our southern and western frontiers.

As, however, the position so dealt with would be local and of small extent, the general principle would not be effected by the application of an exceptional rule.

Well planned lines of defence parallel to each other and resting on strong positions on the frontier to which they would be perpendicular would afford the best, most certain, effective and difficult to force of all combinations. Long lines are necessarily weak but in a difficult country possess the advantage of being exceedingly hard to get at, and having no proper key as a position, would weaken the assailant in the ratio of the necessity which compelled him to assail its various points.

The tactical considerations are the same as those applied to field fortifications; the line or series of works to be defended must be adapted to the force available to cover strategetical points, as railway junctions, main roads, navigable rivers, and should, in all cases, be placed within easy access of the centre of the military population whose services would be required to man the works

In the selection and adaptation of the sites for each particular service or strategetical combination the skill of the military engineer will be displayed, and on that skill in a great measure depends the successful issue of the contest, one of the first duties connected with those operations is an accurate and minute topographical survey of the theatre of operations, in which all its natural and artificial features are carefully pourtrayed, this being effected the plan of defence can be decided on, and if properly adapted to its purpose the execution of it intelligently will ensure its success.

It will thus be seen that an engineering force is in reality the brains and eyes of an army, and is as essential to its efficient action as any other arm of the force.

There is probably no other country in the world with the exterior coast line which Canada presents, that affords so few advantageous points to the operations of an assailant and so many strong positions capable in the hands of an intelligent population of being successfully defended, her long and severe winter retards military operations to three or four months in the year, and it would be impossible to use her railway or canal facilities for purposes of conquest, the Grand Trunk line of the former running parallel to her frontiers and conterminuous therewith, her canals in a similar position, and the lateral lines of both so situated as to be capable of a protracted defence, while the interior lines of communication would remain intact.

The only necessary condition of successful defence being that access to the sea board should not be impeded.

With an army composed of our whole population fighting on their own soil, acquainted with every foot of ground in their own localities, the question of successful defence would be put beyond a doubt.

It would appear that the efficiency of the fire of the German troops in action and at the rifle range are two very different things.

The proportion of hits in actual fighting to the number at the target is for infantry, 1 to 33; and artillery, 1 to 28; German soldiers are considered to be very steady and cool under fire and fight well; yet here is 97 per cent. of the efficiency of their infantry force and a little more than 96 per cent. of their artillery fire lost in action.

It is said that the heat, noise and excitement of the fight is the cause of all this loss, and any mode of discipline by which soldiers could be trained to detach their thoughts from the chances would be a decided gain in efficiency.

The experience gained by the last two wars respecting the comparative effects of infantry fire with the smooth bore and the breech loading rifle is curious. In the early part of this century European Infantry used to blaze away at each other at a distance of 150 yards, one shot in 160 or about six per 1,000 taking effect.

When the most clumsy and inefficient of breech-loaders, the Prussian needle gun, came into use in 1866, the proportion rose 150 per cent. instead of six, fifteen hits were scored to the 1,000 rounds expended.

But as soon as breech-loader was opposed to breech-loader, as in the Franco-German war, the hits fell at once to the old proportion, and as far as effective services was concerned, Brown Bess did as well as her

more pretentious sisters, the hits actually fell to 6 in 1,000.

The conclusion is that great as the revolution effected by the improved fire arms is in the whole character of modern tactics their destructive power, as far as infantry are concerned, is just the same as it was 100 years ago.

Making every allowance for the alleged cause of bad shooting in action it is evident that something more than mere nervousness must be taken into account, the obscuration of vision by smoke, and the practice of firing at 400 to 600 yards will account for a good deal of the difference, but as the casualties are not more numerous than when 150 yards was the point blank range, what is to hinder that distance being tried in action? if troops would stand it, the weapon of precision would very soon recover its character; and all our training should turn to that object.

A long range is all very well in theory, but we have always held that battles will be won by those troops which can be pushed up to 150 or 100 yards of their opponents and will hold their ground at that distance, and that the bayonet charge will be as efficacious and frequent as ever.

Autumnal campaigns and sham battles will never teach troops steadiness under fire, that must be acquired by actual practice, the whole question is one of leadership, if the officers can be taught that the way to win a battle is not to waste ammunition at 600 yards the whole end will be gained.

MR. GLADSTONE appears to have fascinated the people of England with his rhetorical powers, pretty much in the same way that the rattle snake is reported to fascinate and render powerless the object of its appetite, with this difference, however, that the reptile sacrifices its victims for its own appetite, the Rhetorician for an idea.

Not only has his fondness for argumentation left him open to the arts of his astute Yankee friends, but he has debased his high position by descending to the low quibbles of sophistry to explain away the very speech which he puts into his sovereign's mouth as her responsible advice. The *Broad Arrow* of the 17th February, thus comments upon the degradation this demagogue has brought on the office he so unworthily fills:—

"It appears, from an answer given in the House last night by the Prime Minister, that the reply to the "friendly communication" made to the American Government is not likely to be received till after the 1st of March. In the meantime, Mr. Gladstone endeavours to set himself right with the American public by assuring the London representative of the *New York World* that it is "an entire mistake to suppose he ever said '*that every rational mind*' must see but one meaning to the Treaty of Washington." He goes on to say—"*I believe the meaning of the treaty to be clear and unambiguous, according to any legitimate test whatever which can be applied to it. This proposition, I am, of course, ready to sustain in argument.*" This fatal gift of argument is, we fear, one that Mr. Gladstone may have cause to rue. The words which he was reported to have said:—"We have advised the Queen to put in her Speech what we believe we can show to be the meaning, *and the only meaning—that is, the only rational meaning, the direct grammatical meaning, whether tested by sense, by policy, or any other standard; and not one of several conflicting and competing meanings which can attach to this treaty, but the just meaning which it unequivocally bears.*" It is certain that there is no such expression as "*every rational mind*" affirm that the sense of that expression is not implied in them?—and that the House of Commons did not cheer the statement because it was received as true, and was known to echo the feeling of the entire country? We like Mr. Gladstone better in the character of the outspoken patriot, than in that of Ancient Pistol making wry faces over his leek. Feeling as we do, that no man can speak more nobly when the occasion demands, we hold it to be a pity, and a political sin that he should be so ready to eat his words. It would be better by far if he would consider well beforehand what he was going to say, and having said it, be prepared to abide by it, with the assurance that he stood justified in the sight of the world."

In dealing with this people so affectedly called *Americans* by the journals and public men of Great Britain, blind confidence in fair and honorable dealing has invariably been reposed in them, when it is well known that in every Treaty convention or agreement with Great Britain they have been most faithless, and in this question of neutrality will take advantage of the folly of English diplomatists to exact terms that were never contemplated, and then coolly repudiate their own responsibilities; and this will happen as long as Englishmen will be idiots enough to account for all those peculiarities as incidental to their institutions.

To show how Gladstone and his negotiators have been fooled the following extract from the *Montreal Gazette* on Yankee neutrality during the Franco German contest proves, that the Government of the United States deliberately violated all their obligations as a neutral power when they had a chance to make a trade.

"What are the facts. The War department was inviting bids by sending out letters to the principal dealers in arms. In October 1870, there was a new call for bids to be opened on the 20th, and 21st, at four in the afternoon, sales of a large amount of arms to several firms were completed. All these arms, it appears from a despatch of the French Consul, were partly paid for on the 22nd, just one day after the sales from the War Department were completed. This did not leave much time for intermediate negotiations. Several circumstances were mentioned by Mr. Schurz which ought to have excited the suspicion of the Government as to the destination of the arms. But not the slightest heed was given them. Cash was the party who bought as far as the Government were concerned, and that was esteemed all sufficient. "Are we honest men?" Mr. Schurz asked with some warmth. "Is this rule to be observed, not only by us, but toward us? Let me warn the Senators to pause long before they commit themselves to any position so absurd, so mean and so utterly dishonorable. Let me tell them it is not safe for nations to play little tricky games and endeavour to cover themselves up with little quibbling technicalities." Very important in the case is the testimony of Mr. Lecesne, president of the armament committee at Tours in France, who being examined respecting a certain overcharge on a lot of rifles said, "There was no percentage allowed Remington, as we treated directly with the Federal Government of the United States which delivered these arms without charge on board vessels." This is a statement alleged to have been made under oath, and its importance certainly shows the necessity of investigation."

And this is the people to whom an English Premier at the bidding of a few Manchester Quakers sacrifices the honor and interests of his country, and before whose penny a-liners he disgraces himself and position by ignoble quibbles.

The mere craven hearted cowardice that prompted such a course is contemptible enough if the power with which it had to deal was in any condition whatever to enforce its demands, but when its position in a naval and military point of view is as contemptible and ridiculous as its pretensions the fear of it shows to what a depth of degradation the plutocracy of England has descended.

In another column will be found an article from the United States *Army and Navy Journal* of the 2nd inst. in which what we demonstrated as a fact is freely admitted; that the whole coast line of the United States is utterly defenceless, and that by sheer impudence alone her politicians and Government have actually frightened the English Whig radicals into the dishonorable treaty of Washington with its consequence, at a time when six English ironclads could have laid every one of her cities under contribution, we earnestly request the attention of our English contemporaries to the revelations of the *Army and Navy Journal*.

IN our last issue we had to dissent from the jubilant opinion of our contemporary the United States *Army and Navy Journal* on the actual value of floating batteries of the monitor class, and expressed an opinion that in England they were very little better than the failures they have proved in the United States, and in fact wherever tried.

The following extracts from the *Broad Arrow* shows how fully our conclusions were warranted: in the House of Commons

"Sir T. Hay asked the First Lord of the Admiralty whether the *Prince Consort* on her recent examination had shown any serious symptoms of decay, and whether there was any apprehension that the *Ocean*, *Royal Oak*, *Caledonia*, *Royal Alfred*, and *Zealous* might not also be equally defective. Mr. Goschen said the *Prince Consort* was under survey at Devonport, but her exact condition had not been reported to him; it was known that her condition was not serious in the sense of being dangerous in any respect, but it was feared that the cost of the removal of her partially decayed timber

would be heavy. As regards the other ships referred to, he declined to give any speculative opinion as to their condition when they came into dock. Those ships were armoured ten or eleven years ago, and, as was the case in all converted ships, they were not as strong as ships built in the first instance entirely of iron.

"We read in the leading journal that another mishap has befallen the *Hotspur*. The damage sustained by that ship through collision with the steamer *Lady Wodehouse* having been repaired at Devonport, it was intended to move the *Hotspur* into Plymouth Sound, preparatory to her leaving for a cruise in the Irish Channel; but on getting up steam on Wednesday morning a loud report was heard in the engine-room, and it was found that the port condenser had split from top to bottom, the accident being supposed to be caused by unequal expansion. It will take a month to repair the defect. There is nothing in this accident to reflect on Lord J. Hay's seamanship, but what is its bearing on the scientific knowledge of the officers? Is it attributable in any degree to a want of that knowledge connected with the management of steam power which the responsible officers ought to possess? Let us hope that as two attempts to leave the harbour have failed—and there is a proverb about "luck in odd numbers"—that the third time the *Hotspur* will be successful. A good look-out to be kept to see that the offing is clear of small craft, so that nothing may by any possibility be in the way that could damage the ironclad"

We have repeatedly maintained that this question of naval construction has not yet been solved, the warship of the future not yet designed, and that a return to sailing vessels was inevitable. The following letter taken from the columns of the *Broad Arrow* will show that one naval officer at least has arrived at the same conclusion.

"Sir,—I have to thank you for noticing my pamphlet which, by-the-by, you designate "Our future Ironclad Fleet," omitting the word "Ocean." I have courted discussion, and trust, through your widely-circulated journal, and other naval papers, that so important a subject as I have introduced should receive full consideration.

"If you read my pamphlet carefully, you will, I am sure, acknowledge a misunderstanding on your part, in supposing that I am advocating sail power alone as the principal motive power through the navy.

"In page 4, paragraph 4:—"I confess the task I have undertaken is a difficult one—inasmuch as that I have to convince a large majority of highly scientific officers that steam power must alway be subservient to sail power for "*ocean*" *purposes*.

"Now you again leave out for "ocean" purposes—in your remarks on my pamphlet—which is hardly fair play.

"I shall be happy to argue the point with you, as you appear inclined to return to the subject—only you must bear in mind that my argument regarding sail power relates only to a *distinct class of ship*—which a great nation like England should take care her navy was provided with, so as to be able to maintain her superiority on the "ocean."

"In page 10, line 40, we read—"The question now before us is. What is the best type of ships as a future 'ocean' cruising fleet?" I have pointed out that unarmoured ships would be useless. Our present ironclad fleet are also useless as ocean cruisers, and would be still more so if sent to do duty as "ocean" cruisers without sail power; all they are fit for is Channel service and home defence without masts; and therefore, to ensure the best type of ships, either as regards armour or armaments, or speed under steam or canvas, we have no option but to adopt the internal armour principle as the best type of ship for forming "our future ocean ironclad fleet."

"Thank God, England has not yet come to that grovelling feeling in leaving the protection of her shores to "tinkers, tailors, and soldiers," but I will take especial care that a fleet, such as I have described, will be ready to cross the Atlantic at a moment's notice. Who can say how soon that notice may be required?—Yours, &c.,

Edmund Wilson, Cap., R.N.

Waterford House, Symington, Hants.

P.S.—In justice to myself, I request you will insert this letter.—E.W.

[Certainly, we insert with pleasure; the *plain signature* of an officer at the foot of his letter entitles it to insertion in our paper, and our *differing somewhat from* the views expressed in your pamphlet, does not affect our rule on this point. It is, however, a problem not likely to be immediately solved, how far the cost, and measurement of coal should force us back even for an *ocean* fleet upon the resources of the winds and restrain us from making all our fleet more perfect weapons in accordance with modern science, and in defiance of costliness.—Ed. *Broad Arrow*.]"

We differ from *Broad Arrow* that cost, weight, or measurement of coal has anything to do with the question. It is simply one well understood by every seaman, and known as sea worthiness, a quality enjoyed by all vessels, built to answer the natural conditions of navigation, deriving their prinpal motive power from the wind and constructed to sail over instead of drive under a sea, and this quality was well understood by naval architects till the skirmish in Hampton Roads by two non-descripts built in defiance of all principles of naval construction turned the heads of the people of Europe.

The short life of those ironclads is another extraordinary phenomena connected with the system, old line of battle ships built of good British oak, not unfrequently saw three-fourths of a century of service, and often the tenth decade, while the costly armour plated ship will, with difficulty be kept afloat for one-fourth of the period and often be useless after a single decade.

As a young naval power the example afforded will be useful and instructive; on our internal waters, floating batteries, heavily armoured, can be used with effect; and they are the proper description of craft for the peculiar service required, but for sea-going vessels, cruisers, and other craft of that description, the return to the old type of modern sailing ship is inevitable. Steam as an auxiliary, as it was truly and emphatically styled on its first introduction to the British Navy, must be used; but mechanical ingenuity must be directed to devise an efficient method of *lifting* and *housing* the screw when under sail, for the rest good seamanship and good gunnery must compensate for armor plating.

If Captain Edmund Wilson, R.N., did no other service than awaken public attention to the state of the British Navy by the publication of his pamphlet on "Our Future Ironclad Ocean Fleet," he would deserve well of his country, but the question he has raised will not rest there, it will naturally follow the whole ramification of the subject; and as we see the public mind in England awaking to the fact that under Whig-Radical management the Admiralty has been thrown into a state of confusion, and the efficiency of the Navy seriously imperilled, if not destroyed, we may look for a reconsideration of the whole subject as with in coming probabilities.

It is laid down that the future armament of a fleet must be guns, torpedoes and rams; the value of the torpedo as an effective weapon is too dependent on favorable contingencies to merit attention, there does not seem to be any possibility of improvement as the principles on which it should be manœuvred, that of carrying and directing its own motive power, is without the range of mechanical science.

With respect to the "ram" it is a very interesting question in practical mechanics as to what its effect would be on the vessel to which it would be attached, for example: the *Hotspur* weighs with stores, coal and armament on board, little short of 5,000 tons, her speed in action for *ramming* would be, say *ten knots* per hour, in a favorable position she would encounter say a vessel of her own class and weight, query what would be the effect of the shock on the hull of the *Hotspur* or her machinery: or what positive use would she be after the action? for it is a well known law that force and resistance are equal.

In the case under consideration the *Hotspur* would move at the ratio of 15 feet per second and strike its opponent with a force equal to 75,000 tons, receiving a blow in return of equal force; taking her midship section at 1,250 square feet, each square foot would have to resist a force of 60 tons. Can any of our readers inform us what peculiarity of construction will suffice to bring a vessel scathless from such a shock?

It is very evident that the machinery of the engines could not bear any such strain, and the apparent result of the experiment would be mutual destruction, or at least disabling the attacking vessel as a consequence. Recent experience with the *Hotspur* has proved that simple collission with a wooden steamer (certainly not moving at a greater rate than four feet per second, not weighing more than 1,500 tons and not striking with a greater force than *five tons* per square foot), inflicted damages on the ironclad ram which it required twelve days to repair, while the wooden vessel was certainly not more damaged if as much.

The result of the action off Lissa, in which an old unarmoured Austrian vessel disabled and destroyed one of the most powerful

ironclads of the day belonging to the Italian fleet ought to have taught the British naval constructors a lesson as to the inefficiency of unmanagable floating batteries and the utter uselessness of armoured rams.

Those considerations would lead to the conclusion that the armament will be confined for practical effect to guns alone, and that not rifled ordnance by any means. Hard hitting and quick firing are the requisites for naval armament, as the vessel is a shifting platform, and as only one per cent. of hits could be made at 1,000 yards at a vessel broadside on; rifled guns would be evidently unfitted for the conditions.

Turret ships may be useful as coast defence, but the more this question of naval armament is considered does it become evi evident that the war ship of the future will be a broadside vessel, lightly armoured, using steam as an auxiliary and built to sail.

We differ with *Broad Arrow* as to the difficulty of combining in one vessel the necessary qualities which should answer the conditions of a ship propelled by sail and steam

It is perfectly possible if the latter is "subservient" to the former, not otherwise, the loss of the *Captain* did not result from the combination of masts, sails and screw propellor, but because she was built in defiance of all rules of naval architecture and on a principle totally opposed to the natural and physical laws governing the science of navigation, as the United States *Army and Navy Journal* has it, that class of vessels were "constructed on principle entirely their own."

The utter uselessness of *low free board* turret ships either as sailing or steam vessels has been demonstrated by the loss of the *Captain* and the total failure of the Yankee fleet; in fact their construction demands smooth water all the time as a condition of efficiency, and any one acquainted with the *blue* knows well that would be impossible.

It is evident that a return to the high free board broadside ships is a necessity, because turrets will, in any case, compel the centre of gravity to be placed at such a height as as to imperil any description of vessel by excessive rolling in a sea way, a fault masted ships were not liable to, because they were expressly designed to resist the leverage exerted on their mass by the action of the masts and sails Auxilliary screw propellors combined with vessels so constructed would add to their safety the power to get off a lee shore or manœuvre in action with the efficiency of a sea-going vessel.

The *muddle* the *Broad Arrow* speaks of has been made by theorists attempting to construct sea-worthy vessels with flat floors and low free board whose centre of gravity are above their water lines. Captain Wilson has proved his propositions without fear of contradiction.

The Report of Colonel Haliday, the Inspector General of musketry in the British army for the year ending 27th April, 1871, discloses some very interesting particulars.

It appears that 84,020 infantry forming 142 corps were either wholly or partially trained, of these, 109 practised with the Snider Enfield, six with the Snider—five grooved—naval, one with the Snider-Lancaster, five partly with Snider and partly with muzzle loader, twenty with the 1853 Enfield-muzzle loader, and one corps with five and three grooved Enfield muzzle loader.

The mean figures of merit being 104,92 an increase of 8·14 per cent. on last year's results, 10,334 men became marksmen, of these 7,739 or 74 88 per cent. received prizes amounting in the aggregate to £13,916 sterling.

It appears that the 27th Regt. of Foot is the best shooting regiment in the service, its figure of merit 106 06, an average (it is remarked) never hitherto attained by a regiment; the best shooting company in the army is F. Company, 27th Foot, figure of merit being 177·01

The best shot in the army is No. 666, Private S. Bryant, 62nd Regt. of Foot, who scored 65, 64 and 50 points, in the 3rd, 2nd, and 1st classes. This is, no doubt magnificent shooting, the aggregate score for the whole army standing high and for the 27th especially and exceptionally.

The contrast with our own rifle practice and competition would be as follows: 91 Battalions numbering 36,729 men competed at the annual training in 1871, the mean figure of merit being 87·62; the best shooting battalion was the Cumberland Provisional Battalion of Military District. No. 9, (Nova Scotia), its figure of merit with 15 rounds being 24·11; and No. 7 Company, 66th Battalion, Military District, No. 9 the best shooting company, its figure of merit being 30·16. Private John Parks, No. 6 Company, 31st Battalion, Military District, No. 2, who made 51 points out of a possible score of 60, the best shot in the Canadian army, he scored at 600 yards, 18 points out of a possible 20.

The allowance to the Canadian Army for rifle practice is 60 rounds to the British Army 90 rounds, comparatively the scores would stand for the Canadian figure of merit 131·43 against the British Army being 104·92, the comparisons for the Battalion practices is based on the Canadian practices of competition at ranges of 200, 400, and 600 yards, five rounds at each range with a possible score of 60.

Without any of the opportunities of the regular force the shooting of our militia is more than respectable, it is only at intervals that time can be afforded for practice, and that it has been well employed the above comparison bears testimony.

In the British Army special prizes are given for the best judges of distance, a practice which might be adopted in the Canadian force with advantage.

It wil be seen by the comparison that our highest shooting battalion would have a proportional comparative score of 144.66 against the 106 06 of the 27th Regt. and our highest company 180.96 against Company F. 27th Regt., and that Private John Parks would have made 306 points against the 179 of Private S. Bryant the values of the comparative shooting are therefore on the side of the Canadians, but as it is impossible to tell whether this would be the case except by actual trial, we believe the country would receive full value for the outlay, if that trial was fairly and systematically made by allowing the 90 rounds per man to be fired on three separate occasions during the present year.

It seems evident that by this means alone a fair comparison of progress can be made, and the question of average shooting, a very important one now a days, decided.

ANSWER TO CORRESPONDENTS.

Notice.—All communications addressed to the Editor of the Volunteer Review must be accompanied by the correct name and address of the writer.

It is in direct contravention of a rule which should govern all journals to insert anonymous communications. We have received a letter from "A Volunteer," but, as the writer has withheld his name and address we cannot insert it It is our desire to give the greatest possible facility to members of the force desirous of bringing their grievances or suggestions before the public, and would publish the letter referred to if the regular rule had been complied with; although it is as well to inform the writer that he is mistaken altogether in supposing that the termination of the period of service necessarily disbands the Volunteers or that any person holding the rank of field officer can do so without a first class certificate.

Military use of Railways.—A military committee is now sitting at Berlin to inquire into the results of the employment of railways during the late war in the conveyance of troops, ammunition, provisions &c. It is found, when the distance is short, and a considerable force has to be conveyed, it will proceed more rapidly by foot than by railway. An army corps of 30,000 men will go a distance of eighteen German miles in less time than if they were conveyed by a double line of railway, and a distance of twenty-seven miles in less time than if they were conveyed by a single line. A saving of time is only to be obtained by forwarding large bodies of troops by railway when the proportion of troops to German miles is as 2000 to 1 on a double line, and as 1333 to 1 on a single line. The French frequently suffered great losses from not observing this rule, while, on the other hand, they surpassed the Germans in employing railways for the conveyance of provisions. For this purpose so-called "Magasins Mobiles" were formed each of which contained ten days provisions for an army corps, and was always kept ready on the line to be dispatched wherever it might be wanted.—*Pall Mall Gazette.*

[Written for THE VOLUNTEER REVIEW.]

THE FAREWELL.

BY CAPT. J. R. WILKINSON.

I stood to look a last farewell
Upon our Dominion shore;
E'er I should turn afar to roam
From all I lov'd forever more.

I gaz'd upon the waters bright,
The scene recalled the times of yore;
There's none can tell how I have lov'd
Thy waves and sands, oh! peaceful shore!

The moon was shining gently forth,—
Her silver light so dear to me,
Glanced on the waves along the strand,
And shining o'er the flowery lea.

In days long gone, I often stroll'd
With Alleene by the shining sea;
But now those days, those happy days;
Will never more return to me.

For Time's relentless years speed by
With voiceless, viewless, sable wing;
Just such a night I laid her down
To sleep for aye, in beautious spring.

She's sleeping now to wake no more—
When moon and sea are gleaming bright;
She sleeps, and I am weary now.
Away these tears, I go, good night.

Leamington, Feb. 10th, 1872.

THE AUTUMN MANOEUVRES.

A lecture on the Autumn Manœuvres was delivered by Capt. C. B. Blackenbury, Royal Artillery, at the Royal Artillery Institution, on Tuesday afternoon, last week. The chair was occupied by Brigadier General J. M. Adye. C, B., R. A., Director of Artillery and Stores; and among the officers present we noticed General Sir J. L. A. Simmons, R. C. B., R. E., Governor of the Royal Military Academy, Woolwich; General Buchanan, late Royal Artillery; Colonels Domville, Field, Gosset, S. E. Gordon, Milward, C. B., Reilly, Wray, C. B., Young, and most of the officers of the garrison.

Captain Blackenbury observed that one of the wisest of our late foreign visitors, who knew us well, said he was astonished at the progress we have recently made in the knowledge of war, but he was also of opinion we have yet much to learn. There would be some to say, no doubt—"What is the English Army to learn from Continental soldiers?" We should remember, however, the confidence with which all looked forward to the triumph of the Austrians in 1869. No soldiers could have fought more gallantly, yet the result was well known. There was last autumn great difficulty in supplying for one fortnight 30,000 men from depots in the centre of a space occupied by three divisions, close to London and in the time of profound peace How, then, would they have fared if the war had been real, and the divisions moving daily further and further from the base of operations? The only way to test the supply departments was by actual work as nearly approaching that of war as possible. Gallantry might win a fight in spite of many errors, but it would not feed men. Besides the two main objects of such manoeuvres, practice of tactics and the supply of an army with provisions, there were many other essentials which could only be properly learnt in such peace manoeuvres as would best represent real work in the field. There were for example, the duties of the staff, including the important one of acquiring and digesting information without which generals could but blunder in the dark. It might be objected that full knowledge of such duties could only be acquired by actual service in the field, but in the absence of foxes we hunted a drag to practice hounds, horses, and men. The undoubted ability and knowledge of the Prussian generals was acquired in times of peace, their school being the autumn manœuvres. In England we can hardly hope to approach the condition which rendered the Prussian imitation of war so instructive. It was not thought possible to dispense with tents for the men. We could not place the inhabitants of a district under contribution, nor pass over many portions of territory which should be free to the march of the armies. From the intense interest manifested throughout the country in the late manœuvres, and the anxiety of certain counties to be selected as the scene of the operations, we might hope that the autumn manœuvres would become popular in England, and be regarded almost as a national sport. There were two principal ways in vogue on the Continent for practising troops in the art of war—the autumn manœuvres of Prussia and Russia, and the permanent camps of instruction in France, and Austria. It was well known to all what the Prussian manœuvres were like, and some highly-interesting letters in the *Times* recently gave a description of the Russian manoeuvres. A whole district was in a state of siege, and St. Petersburg, the capital was ordered by the generals to be considered as non-existent, except as affording a peculiar combination of troops. Up to the time of the late war the French had Chalons as their camp of instruction, where regular divisions were formed; and, after the usual battalion and brigade drills came great manoeuvres, with their beginning and end laid down beforehand. The present Austrian system was a combination of the French and the Prussian, they had their great standing camp at Bruck but their manoeuvres were much freer than those of the French, the generals being actually pitted against each other. Everybody in Austria considered the scheme a most valuable one. We in England had our camp of instruction at Aldershot. Its first establishment was a great step out of the monotonous marchings of the barrack-square. The generals obtained some practice in handling large mixed bodies of troops, and both officers and men gained a good deal of real instruction; but Aldershot, like Chalons and Bruck, had one great disadvantage when compared with the district manoeuvres of Prussia. Every bit of ground became as well known to the commanders as their own quarters, and the limited number of combinations possible, when all the necessities of the case were taken into consideration, had long since been exhausted. We wanted space for our manoeuvres in districts not so well known but that everybody would have to make use of a map. Yet now we had grown from barrack square drills to a small camp at Chobham, where much the same drills were carried out; from Chobham to Aldershot, with its increased number of troops and its set manoeuvres; from the set manoeuvres to a certain amount of freedom in the tactics of one commander against another. After that came the establishment of umpires, whose duties were to take care that the losses occasioned by mistakes should become palpable and to prevent actual blows. Lastly, we had the autumn manoeuvres of 1871. Timid and tentative they were, but affording a grand platform on which to rest and gather strength for the next spring upwards. Verily, there was reason for trumphant hope. Perfect as it was now in the material to make soldiers and generals out of, perfect in spirit, courage loyalty, and discipline, admirable in equipment and armament, who could doubt that the British Army would be first in the knowledge of that theory called war, now that the chance was given it? There was one point, however, to which attention was needful. It seemed a little rash to bring up regiments and batteries from country quarters throw them hastily into divisions, and expect them to reap the full benefit of the manoeuvres. The Prussian district corps organization made it a simple problem to begin with company drill every year, then go on to battalion movements, then throw battalions into brigades, brigades into divisions, divisions into corps, drilling the men from lower to higher, and practising first the junior, later on the senior officers. With us it was not so easy, yet neither was it so hard but that the difficulty might be overcome. It might be well to concentrate small detachments of the three armies in camp, on country commons, and let field officers and even captains have commands occasionally for special purposes, such, for instance as the passage of bridges, attack of villages, or reconnoisances. The superior officer should look on, not interfering at the time, but criticizing afterwards, and awarding praise or blame according to circumstances. Now that the power of firearms had been so enormously developed, battles were more than ever a series of struggles for positions, sometimes by very small bodies of troops. In the half-dozen or so great battles and numerous skirmishes at which the lecturer had been so fortunate as to be present, he never saw lines of men standing opposite to each other at a couple of hundred yards' distance, blazing away as they did at the manoeuvres this year. There was always a heavy fire of artillery and much skirmishing for a considerable time; then a concentration of men—sometimes a strong column, sometimes only a company—a rush, and an advantage gained by one side or the other, such as affected the whole battle. At the great battle of Koniggratz it was but a very small force that well and boldly led, first slipped into Chlum almost unnoticed, and spread consternation throughout the whole Austrian army; for the small Prussian force stood behind the Austrian centre. It would be easy to mention many cases in which slender detachments of the three arms could do great things. A general would surely not be put to command them. Besides, did it not seem unnatural to expect men suddenly to know how to command a brigade in action when they had never commanded a mixed force of 1,000 men in their lives. If we could not have civilized war with well-trained armies, we must get what learning and practice was possible in peace. Of the two great divisions of the art of handling armies, strategy and tactics, the first was best capable of being studied theoretically, and least able to be put in practice during peace manoeuvres. At the late manoeuvres the question of supply had, from beginning to end, to be put above all strategical maxims. Tactics and feeding the troops were enough for the first year, criticisms based on any other supposition were quite beside the mark. The lecturer then described the principal events and general movements at the late manoeuvres. Alluding to Infantry—that most important and cheapest of the three arms, the only one which could go everywhere and fight, both stationary and in motion—the lecturer said there arose two most important questions—was the British line adapted to modern requirements; and, if not, should it be modified? Against the stiff, British line might be quoted the opinions of such men as Colonel Chesney, and Sir Garnet Wolseley, together with the

whole body of Continental officers. It served Wellington's purpose; but in those days 200 yards was an extremely long range for infantry fire, and artillery could approach within the practical range of case, so that infantry in attacking had very limited distances to move over. It was hardly too much to say that British infantry tactics now must be almost confined to standing still, or breaking through their habit of line formation. They must form some sort of column to advance, with power of rapid deployment. All military writers now insisted upon it as an axiom that mobility was one of the chief requisites for success, the only question was how to gain such mobility. The Prussian battalion consists of a thousand men, divided into four companies, each company commanded by a mounted officer, and formed into two divisions; their fighting order was, speaking roughly, in column of three divisions at deploying distances; there were three ranks instead of our two, the third rank consisting of skirmishers, who swarmed in front or else filled up the intervals, or formed third divisions in rear at the moment of attack, as the necessity of the case might suggest. The front of each column was, therefore only about forty files. Thus line could be formed almost immediately to resist an attack, and, when in motion, the heads of columns could easily move with steadiness, conforming to the features of the ground. Some such formation appeared to be necessary for the British infantry. The opinion of officers, both English and foreign, to whom the lecturer spoke on the subject, was that the infantry at the manoeuvres almost always gave ground too soon, instead of holding it to the last possible moment. It perhaps might be that the officers in command knew the unwieldness of the force they commanded, and were obliged to retire while they could do so in a leisurely manner. Possibly it was for the same reason that the infantry clung closely to the batteries, and persisted in retiring whenever the guns did, forgetting that each arm should support the other, and that it was when the guns were in motion that the infantry should hold its ground with the greatest tenacity. The Prussian officer whose opinion we valued most was much struck by this, and seemed to consider the practice of yielding ground too readily so fatal that the manoeuvres would do more harm than good if it were persisted in. The discipline of our Line regiments and their grand savage earnestness when face to face were splendid, and showed that the same material was there which called forth the remark, "The British infantry is the best in the world; happily, there is not much of it." The slowness of their marches and their heaviness of manoeuvre would doubtless be corrected in future years, nor would they fail to give a good account of any enemy they might meet on the Continent or on our own soil. The powers and uses of cavalry formed a fertile subject of dispute among soldiers and it might safely be said that they could not be settled by peace manoeuvres. The amount of men killed or wounded by that branch of the service was extremely small—so small that were killing and wounding the main object of war, cavalry might be put out of the field altogether in these days of accurate and long ranging small arms. But it had long been laid down as a maxim that it was not the number of men killed and wounded which beats the enemy, but the moral effect produced on the survivors, which cavalry was so well capable of producing. The teaching of the war of 1866 did not lead the Prussians to despise cavalry; on the contrary, from that time forward greater attention than ever was bestowed on the equipment, horsing and instruction of the mounted regiments. They were kept longer with the colours, as a rule, than the infantry, and every inducement was held out to them to re-enlist at the end of their term of service. In the late war cavalry was frequently employed in large masses, especially to hold the enemy fast to a position while other troops were coming up. To this end they were sacrificed freely and ruthlessly, but the end was attained. That mode of using cavalry required less practice than another, which hardly received the attention it deserved—viz., the action of cavalry as the eyes and ears of the army. Now, at the recent manoeuvres there was nothing of that. A few men were occasionally thrown out on outpost duty, and more than once, such men, being questioned, did not know in what direction to look for the enemy. One vidette was seen with his face turned directly towards his own camp, and his back to the foe. This was caused by the teaching of the British cavalry being insufficient and unsystematic. In the British military organization we had no Intelligence Department, nor even any plan for creating one in the event of a war. During the great American civil war the Prussian authorities gave leave to certain officers to quit the service temporarily and go to America, entirely ignored by their own Government; but they understood that if they returned with useful information it would be considered as a fact greatly to their credit, and sure to result in advantage to themselves. No questions would be asked as to the position they assumed to acquire the information. Before 1866 the mountain passes of the frontier, the plains of Bohemia, Moravia, and Hungary, were studied with such care by Prussian officers that the ford over every river was known, and even the length of timber required to construct bridges, should the permanent ones be broken down by the enemy. In the interval between 1866 and 1870, the whole of France, or at least the more important parts of it, were visited by German travellers, actually Prussian officers, who corrected the French maps, and made plans and sections of all the fortresses; and upon these plans and sections were based the calculations made by the artillery as to the curvature of the shot's path necessary to reach the foot of the escarpes over the crest of the glacis. So little value had been attached in England to such work as this that almost all information voluntarily acquired had been ignored, and the military attaches at embassies had in moments of temporary necessity been called upon to give speedy information as to matters upon which they had long before written full and careful reports. In regard to artillery at the late manoeuvres there was no distinction made between divisional and reserve artillery. In all armies in the field there were usually two reserves—the reserve artillery of each corps, and the reserve of the army, held more closely under the hand of the general. Until this year it had been the custom in the English service to place the batteries in line with the infantry and keep them there, in fatal rejection of the knowledge that just where the fire of infantry ceased to be effective that of rifled guns only began to be valuable; and further, that to place field artilery within practical range of the enemy's infantry was to make certain that, win or lose, the guns would have to stay there, for the horses must be killed. Few knew how tenaciously that old system was adhered to, or how indignant were many superior and much-respected officers when the contrary opinion began to be advocated. There was no one of the acts of his Royal Highness the Field-Marshal Commanding in Chief for which artillerymen, and, indeed, the whole army, had such reason to be grateful as the order which freed the English field artillery for ever from the trammels in which it had hitherto been bound, and raised it to the position of honour and responsibility it now occupied. With that responsibility the men might surely be trusted who showed battery after battery in such perfect order as to draw forth praise from all beholders. The future historian of the British Artillery would be able to say that under the Duke of Cambridge the greatest advance was made in the progress of artillery tactics since the days of Frederick the Great. Remarking upon what seemed wrong with the artillery at the recent manoeuvres, Captain Brackenbury said it seemed to many officers that the guns moved too frequently, thereby losing valuable time, instead of taking up positions and remaining there as long as possible. Again, there was hardly ever a concentration of fire upon part of the enemy's line to make a hole there for the infantry to get in at. On the day of the attack on the Chobham intrenchments the salient angle of the defenders was a weak spot, and it would have been easy to place guns so that if they missed the angle they might enfilade the face. That was exactly the case where Reserve Artillery might have been most valuable. Next to the guns themselves, the horses needed most care. Those grand gun teams should be preserved in every possible way. It struck some officers present at the manoeuvres that the limbers adhered rather too strictly to the drill ground practice of standing just behind the pieces in action. It often happened that by going a few yards to the rear, without reversing, the limbers themselves were within easy reach, while the teams were less exposed. All batteries should be furnished with range finders. The art of handling guns could not be suddenly picked up; it must be learnt step by step in the drill season; autumn manoeuvres would test and improve knowledge already obtained. Each captain of a battery had his own choice of drills. There were some, however who held that a systematic course should be pursued every year, commencing with gun drills and foot parades, going on to driving drill, battery and brigade movements, then selection of ground, and concealment of guns, men and horses. Later on should come manoeuvres with the three arms in small bodies, with plenty of practice in attack and defence of defiles or villages, passage of rivers, or other exigencies likely to occur in war. Hitherto, however, not much had been taught except in theory. Lastly, there should be autumn manoeuvres to test knowledge on a large scale. In equipment, care of horses, driving, riding, and drills of all sorts, no foreign artillery could approach that of England, although in knowledge of minor tactics some progress had yet to be made. The autumn manoeuvres had given the impetus required, and next year there could be little doubt English artillery officers would display a knowledge of tactics equal to that of any artillerymen in the world. With regard to transport, it must be confessed that in that branch we were now, as we have always been at the commencement of a campaign, decidedly backward. The ordinary supply of garrisons gave no clue whatever to that of an army in the field, and it was only when we came to put it to the test this year that we discovered how difficult and complicated a task it was. Like the Intelligence Department, that of supply and transport could

not be suddenly formed; it must grow. Its duties must be well known and all circumstances provided for. After referring to the organization of the Prussian Etappen Department, the lecturer said it was impossible to test an organization of that kind in any other way than by giving it an advancing army to feed, as might be done at the manoeuvres; but the same thing could be practised on a small scale by the movement of small bodies of troops during the summer. He next summed up the lessons learnt from the late manoeuvres—first, we had been taught the necessity for and value of such manoeuvres. Secondly, that they were possible, and even popular, in England; that the military spirit of the country was not dead, but only dormant, waiting the moment when our interest or some unbearable insult should compel us to war. Thirdly, that the whole army was somewhat deficient in knowledge of minor tactics. Fourthly, that we were very backward in the organization of such necessary departments as those of intelligence and supply. Lastly, that what there was of our army was splendid material needing only a little more organization and a few such manoeuvres as we undoubtedly should have now, to put to silence all the ignorant talk about England's powerlessness to make her voice respected. What nation would think lightly of a British contingent of 100,000 men with the whole country its wealth, and energy, behind them? Let them read every day in the papers the astonished utterances of foreigners who found the entire nation, Republicans and all, gathered in heart round the sick bed of the Heir of the English Throne, or engaged in beseeching Heaven to spare his life. Henceforth we might be certain the nation would pull together both in peace and war. The lecturer next put forth several suggestions for discussion: 1. That future manoeuvres should only be the completion and crown of a systematic plan of drills and instruction in minor tactics carried on throughout the year, commencing with mere parade work, and gradually ascending through perfect drills of units; then combinaton of the three arms in small bodies, commanded by comparatively junior officers, under the eye of the generals; then brigade drills where possible before combination into divisions. The divisions themselves to be drilled and manoeuvred before acting against each other. Outpost duties to be performed as often as possible. 2. The system of transport and supply should be placed on a more comprehensive basis, and an attempt made to assimilate the supply of the troops throughout the year with that of an army in the field. 3. To practice the supply departments fairly a division should march 150 miles, supplied from the base of operations, and the march should be not too near London. 4. Every general commanding a division should have a chief of the Staff who should be charged with the responsibility that all orders be properly carried out. 5. The infantry must learn that their place was not alongside the rifled field guns, but that the latter might often be advantageously posted as much as 1,000 yards distant. The soldiers must show more audacity in pressing forward, and less readiness to retire. Brave they would be in real battle, but the force of habit was almost irresistable. Let them consider how a month or two in the trenches spoilt soldiers for the field. 6. Mobility being of the greatest value, some modification at least of the stiff British line was imperative. 7. Cavalry should have more systematic practice of outpost and patrol duties, officers and men being constantly required to brin in information. 8. Since so much responsibility had lately been given to artillerymen, tactical studies were absolutely necessary. All the minor operations of war should be practised throughout the year, so that there might be proficiency in the autumn. Having won golden opinions last autumn, we must take care to keep them by further progress.

OPINIONS OF THE PRESS ON THE GENEVA ARBITRATION.

The speeches of Earl Granville and Mr Gladstone are not calculated to raise very strong hopes of a reconsideration of its position by the American Government; any reliance placed upon the moderation and good sense of that Government does not seem to have much support. But there is everything to hope from the firm tone of Ministers. They told the Americans last Thursday that the claims for constructive damages cannot be entertained, and to that decision the Government mean to adhere. The decision is right, and it will have the support of all parties in Parliament who respect the honour of Great Britain, and desired to see it respected.—*Scotsman.*

At least it is a comfort to feel assured that the Government is supported by the Parliament and the people of this country in its determination to "state its case in the mildest terms," to disarm anger and impatience by courtesy and forbearance, to make it easy for the Government of the United States, if the pride of maintaining a false position forbids them to accept the true interpretation of the Treaty, at least to consent, in the interests of peace and friendship, to cancel an instrument which fails in the elementary condition of a contract mutual agreement as to its meaning and intention.—*Daily News.*

What we have to concern ourselves about now is how to treat the American demands; and we hold the opinion that, whilst absolutely refusing to entertain them, we need not suggest that they were dishonestly made. But that is practically what Mr. Gladstone has done; and, as as much as we sympathize with and applaud the decisive languagein which he declares it to be impossible for England to entertain such, or allow them to be entertained by any tribunal whose authority we admit, we are compelled to consider, with so many of his censors yesterday, that his language has been indiscreet, and will probably be mischevious.—*Standard.*

If the Volunteers have done no other service to the country, they may, at least, claim to have gradually (very gradually) opened the eyes of the military authorities to the use of competitive practice in teaching the soldier the use of his weapons. We all recollect that after years of objection the Royal Artillerymen were allowed to fire for prizes for the first time last year at the N. A. A. meeting at Shoeburyness. The N. R. A. has for two or three years given prizes for the Infantry of the Regular Army. Lord Napier of Magdala, that far-seeing soldier, instituted prizes, not long ago, for the Army in India, and now at last we observe by a War-office order that the amount of ammunition issued to the Royal Engineers and Infantry is to be increased from 90 to 100 rounds per man, and that "ten rounds may be expended in shooting matches between companies and battalions, the conditions of which will be regulated by commanding officers, who will consult the Deputy-Assistant Adjutant-General for Musketry of the district."—*Volunteer Service Gazette.*

The London *Engineer* presents its readers with illustrations of the batteries of the ships of the *Vanguard* class, which carry six 12½-ton guns in a central battery on the main deck, and four 12½ ton guns in a smaller central battery on the upper deck, with four 20 pounder breech loading guns mounted on Captain Scott's anti-torpedo carriages outside the armor-plating. These vessels, it states, with their heavy midship batteries—powerful fire right ahead and right astern, and light ends—have proved themselves on the whole to be good sea boats, fulfilling the expectations of Mr. Correy, and the Board of Admirality, by whom six vessels of this class were ordered to be built. The *Vanguard Iron Duke*, and *Audacious* are already in commission, and it is probable that the *Swiftsure* and *Triumph* will likewise be tested, when ready, with the *Audacious*. There are some slight differences of detail in the fitting of these vessels, a portion of them being propelled by single screws, the others by two screws; and the *Swiftsure* and *Triumph* are sheathed with wood. These vessels have a speed varying from 14½ to 16½ knots, and are found to be very heavy under steam. Their 12½-ton guns are of the Fraser pattern, and, being rifled with the Woolwich or gaining twist, fire studded projectiles of about 260 lbs. weight, with a powder charge of 60 lbs. of ordinary rifle grain powder. All the guns are mounted upon carriages fitted and arranged by Captain Scott, and worked by his mechanism, by which a large arc of training and great precision of fire is attained. An outline of the gun carriage slide is given in the illustration. The crown wheel pinions and handles at the rear of the slide actuate the pinion which gears into the rack, and thus give motion to the slide, which revolves or is trained round the axis of its pivot at the port. The handles at the side of the slide, immediately in advance of the training handles, work pinions which gear into suitable wheels, and give the requisite motion to the endless chain to which the carriage is temporarily connected after the gun is required to be either run in or run out. Besides carrying from 12½ ton Fraser guns, each of these vessels is provided with four 20 pounder Armstrong breech loading guns for the special purpose of sweeping an enemy's tops or clearing crests of fortifications, and for repelling shallow draught monitors or torpedo boats. These guns are provided with special carriages designed by Captain Scott, Royal Navy, to give 30 degrees of elevation and 30 degrees of depression. This great extent of depression is given to enable the anti-torpedo guns, when mounted upon the upper decks of the lofty vessels, to be fired down through the decks of low-sided turret ships. It has been recently proposed to utilize the Armstrong breech loading 64-pounders by mounting them in a similar manner upon the upper decks of the *Agincourt* and other vessels.

Some one has been testing the accuracy of thermometers. He took one mounted on box-wood, one on metal, and one very dirty. In the shade one degree covered the range of difference between them. In the sun they differed 10 degrees. The method of mounting seems to make a variation in the effects of heat, and may account partly for the well-known fact that, thermometers as well as doctors, often disagree.

A Kentucky girl says that when she dies she desires to have tobocco planted over her grave, that the weed nourished by her dust may be chewed by her bereaved lovers. There is poetry in the idea.