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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.

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No. 6.

CORRESPONDENCE.

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

ON THE ESTABLISHMENT OF VOLUNTEER ENGINEER CORPS FOR CANADA.

To the Editor of the VOLUNTEER REVIEW.

MILITIA.—In your issue of the 22nd inst., in reference to the formation of Engineer Corps, you state it has not yet been dreamt of and no necessity exist for organizing a corps of artificers dressing them in a peculiar uniform, and dubbing them Engineers.

I beg to differ with your correspondent on that subject, and state my reasons for so doing—as you state that men required to perform the duties of the rank and file can be found in every battalion, are already proficient in the use of Axe, Pick and spade, so far as that goes I say may be correct; and further, we have good materials in all our battalions to make good Engineer Sappers—that class of men you allude to, only performs a small portion of, the duties required to be performed by Engineers and by that class called miners in the Engineer Corps. I will give you a simple statement of the class of men and trades that are required to form the Royal Engineer Corps of the British Army, and a portion of the duties they must be competent to perform before they are returned fit for Engineer Sappers for general service.

The class of men required and recruited for the Royal Engineers are as follows:—carpenters, masons, bricklayers, plasterers, smiths, plumbers, glaziers, wheelwrights, coopers, turners, painters, saddlers and miners. No man to be taken unless he can read and write. After joining Head Quarters they are sent to drill for six months, under staff officers and drill instructors of the corps until well posted in their duties of drill, guards, &c., and reported fit for duty. Then they are prepared to commence to learn their duties as Engineer Sappers, they are classed to the different schools, according to their ability, which they attend two hours every morning, Saturdays and Sundays excepted; they are put through a course

first of Geometry previous to going through a course of fortifications, Government furnishing books, drawing instruments, paper, boards, &c., for every man in the corps when going through the schools—and Field Works which they are employed at during the remainder of the day at the Royal Engineer Field establishment Chatham. Under a competent staff of officers and Non-Com. officers for that duty in working parties. For sapping, mining tracing batteries, building batteries, field powder magazines, stockades, parallels, approaches, laying gun and mortar platforms, traverses in batteries, cutting brush wood for making gabions, fascines, pickets for reveting batteries and other military field works, pontooning, barrel ferrying for military bridges composed of rafts made with barrels, knotting and splicing ropes. On wet days not fit to work on the field works, the companies are taken into the model rooms of the establishment and instructed in the art of attack and defence, where the models are prepared and the defending and attacking parties are both engaged in their operations, with all arms of our service for their information and instructions; and each company of Royal Engineers consist of one captain, one 1st Lieut. and one 2nd Lieut., one Col.-Sergt., four Sergts., four 1st Corporals, four 2nd Corporals, 100 to 120 men, and unless their service is much needed they are always allowed from 12 to 18 months in the field establishment before going on service.

For the benefit of our Dominion Militia a Staff College should be established on a small scale similar to Staff College at Sandhurst; consisting of Professor of fortifications, instructors in military drawing, Professor of military history and instructors in drill; for the benefit of all officers who may wish to qualify for Artillery Engineers or for the staff duties there should be also an Engineer school and field establishment to instruct the Non-Com. officers of the Engineers, on whom the Engineer officers will have to look to for assistance in faithfully carrying out their orders, and attending to the Field works in their absence on other duty, and the additional expense say for books, instruments, drawing books, paper, Field

tools and stores for military field Works say for 50 Non-Com. officers going through at each period for it will be the duty of the Non Com. officers of the Engineers to superintend all working parties of the militia or line on military field works whenever it may be required under the directions of the Engineer officers; and where all militia officers could obtain the practical work of Field fortifications on a limited scale, and it would be to the advantage of the volunteer Engineer corps and officers of our force if the Sapper's Manual compiled by Captain W. A. Frankland, Imperial Engineers, could be obtained in this Dominion by purchase for their use.

I trust when the House of Parliament does assemble they will grant supplies to enable the above to be established for the benefit of our Canadian Army should the proper authorities think fit to recommend any such establishments.

Yours, &c.,

SUBSCRIBER,
and Campaigner of the Active Force.
Burritt's Rapids, 24th Jan. 1872.

NOTES AND QUERIES.

BY G. W. G.

That a country—the conditions of whose existence as a nation, and, the guarantees for whose independence, are so peculiar and unique—as are those of Switzerland, should find it necessary to devote its serious attention, and its strenuous patriotic efforts to its military system, is a circumstance which should act as a warning to all nationalities inclined to glide into the fool's paradise of anticipations of a millenium of peace, even had the present generation not had ample experience of how sudden and how rude may be the awakening from day-dreams so complacent and so imbecile. Not many years ago we were accustomed to hear a great deal of the perfections of the Swiss system of organization. It is therefore with peculiar satisfaction that we are enabled, through the VOLUNTEER REVIEW, to discover that, however satisfactorily the Military institutions of Switzerland may accord with the idiosyncrasy, and fulfill the requirements, of her people, there is really no

the noble Spanish language was to the cavaliers of Elizabeth, James and Charles, and that in both those tongues there is scarcely an aspirate H, it is not very difficult to imagine that the fashion of aspiration is of later growth, and that the careless or uneducated Briton only clings to an original 'sueon do parler' now long since abandoned to him by the cultivated classes, in which it was likely enough first adopted as an affectation, and afterwards as a distinction of caste.

THE EDUCATION OF THE ARMY WITH REFERENCE TO YOUNG OFFICERS.

We take from the *Journal of the R. U. S. Institution* the following report of a lecture there by Lieut. Colonel Middleton, whom many of our readers may recollect as the Garrison Instructor at Aldershot, and the Commandant of the early Schools of Instruction for the Reserve Forces held there:—

Mr. President and Gentlemen,—The subject on which I am about to address you to-night is one of great interest and importance, more especially at this time when great changes are impending in the system and organization of our Army.

So important does the subject appear to me that I feel I am scarcely qualified for the task I have undertaken, and I can only plead as an excuse for my doing so that I have paid some attention to the matter, and involuntarily had some little experience in it in my capacity of superintending officer of the now system of garrison instruction for the Army.

Before proceeding further, I wish to point out that I am labouring under some little disadvantage in having to write a paper on this subject just now when the general system of the education of the officers of the Army is undergoing a change, or rather is in a state of transition awaiting the great alteration in the organization of the Army. As you are aware, the system by which commissions were obtained with and without purchase at the Royal Military College is now in abeyance, and it is undecided whether it is to be re-opened again under its pristine form. Under these circumstances my paper to-night will treat more of the actual state of things at the present moment, and more especially of the system of garrison instruction as now carried on; and though it may not contain in itself very much, I am in hopes it may bring forth remarks and suggestions from those who are better qualified on the subject than myself; and we are to be congratulated on having, as chairman to-night, one who has had perhaps more general experience in the matter of Army Education than any other officer in the Army.

I may add here that as our idea of educating the officers of the Army generally in professional knowledge is, comparatively speaking, a new one, it is necessary occasionally to refer to the system of some other army, and for that purpose I have selected the Prussian system as the one that has apparently proved itself to be the best, though I by no means think that a slavish imitation of their system would be either advisable or suitable for the Army of this country.

In a short essay like this it is impossible to enter into the question of whether the officers of the English Army—other than those of the Artillery and Engineers, whose high professional knowledge and abilities

have never been questioned—are really, as a body, so deficient in professional knowledge as some of our friends seem to think, and which I, for one, do not believe; I shall therefore confine myself strictly as I can to the subject proposed—viz., "The Education of the Army with reference to Young Officers."

Now, the first question which naturally presents itself is, what knowledge do we require our regimental officers to possess? The answer to that is, I take it, easily given. He should have the education of a gentleman combined with the professional knowledge of a soldier.

This answer gives rise to another question. When and where should this knowledge be acquired? The Prussian military authorities unhesitatingly say, in answer, "The education of a gentleman should be acquired at a public school before entering the service, and the professional knowledge at a war school after entering the service, and though they do not yet quite act strictly up to this opinion, they do not hesitate to say that they hope to do so."

The Prussian first examination in the *Portepée Fahrrieh* examination consists of the following subjects:—

	Relative Value.
German.....	5
Latin.....	5
French.....	3
Mathematics.....	5
History.....	3
Geography.....	3
Drawing.....	1

This examination is stricter than ours, and is partly on paper, and partly *trial force*. The questions in each subject are fewer in number and more comprehensive in character than is usual in our examination.

The Prussian idea, as stated by General Von Holleben, of examining, is, I think, rather different to our system. He says that little value, as a rule, is attached to mere knowledge of detail as exhibited in the answers; in fact, the main object of the examination is not so much to show that a candidate has any given amount of positive knowledge, as that he has sufficient intellectual capacity to put his knowledge to a useful purpose; and, indeed, this seems to be generally the object in all Prussian examinations.

I may add that they often relax their rules in their examinations. Strictly speaking, candidates are only allowed two chances of passing the examination, but they frequently allow a third, but seldom more. Again, a candidate who has been spun once is not necessarily re-examined in all the subjects, but is excused those subjects at his second examination the answers to which at his first were considered satisfactory; and when I add to this the acknowledged fact that from one-half to two-thirds of two candidates fail on the first occasion, it would appear that—first, this examination is too severe, and second that the authorities know it is.

At present the subjects of our first or entrance examination are as follows:—

- Classics { Latin.
- { Greek.
- Mathematics.
- English language.
- Modern languages.
- History, ancient and modern, with geography.
- Natural sciences—i. e., mineralogy and geology.
- Experimental sciences—i. e., chemistry, heat, electricity, including magnetism.

Drawing.

The severity of this examination, which is quite comprehensive enough, of course depends on the amount of qualifying marks required to pass.

At present it is a low one. The candidates are only allowed to be examined in five of the subjects.

With regard to this first examination, or entrance one, as it is purely a civil examination, based on the standard of the public schools, its stiffness must depend on that of the public schools examination. At present I am sorry to say that the number of qualifying marks are necessarily very low. Probably now that purchase is abolished, this minimum will be raised, as I think it ought to be, but I hope it will be done gradually, as we are dependent on the public schools for many excellent officers. I also trust it will not be raised too high, for even those great sticklers for military education, the Prussians, admit that many men make excellent regimental officers without possessing very high intellectual attainments. Now, by making this examination too stiff with us, two valuable classes of men might be lost to the Army, the one consisting of men of ability, but requiring manhood to induce them to use it, the other of men possessed of the physical qualifications for an officer so generally possessed by English gentlemen above those of other nations, unaccompanied, perhaps, with any profound capacity for mathematics, languages, or drawing.

Before leaving the subject of this examination, I should like to say a word about languages, as taught in our schools.

I do not wish to be considered as advocating a class education, which I do not approve of, but I must say that I think for a lad who is going to enter the Army, so much Latin and Greek and so little French and German is not a good thing: indeed I am daring enough to think Greek unnecessary altogether.

Then, again, about geography? This study is much neglected, and it is of importance to civilian as much as soldier. It is a well known fact that a great many people who ought to know better have a very mild idea of geography beyond Europe, and even of that they probably only know the principal towns. Their knowledge of the geography of the rest of the world depends on having some relation in the Army or Navy, or some friend who travels and writes to them from some colony or country beyond the sea. I have heard people actually argue that Demerara was an island, and one of the West Indies; also that Bermuda was a West Indian island!

Some years ago a member of our upper House of Legislature gravely informed the house that there was a good coach road between Launceston, in Van Diemen's Land, and Moberna.

(To be continued.)

The Northern Pacific Railway is now virtually completed across the State of Minnesota—255 miles. A schedule of regular trains is now being arranged for the completed section. Early in October contracts were let for the construction of the Dakota Division, extending 200 miles westward from the crossing of the Red River to the crossing of the Missouri in Central Dakota. A large force is now employed on this division, which is to be finished by the first day of July, 1872. In the meantime a section of sixty-five miles is under construction between the Columbia River and Puget Sound in Washington Territory where track laying is progressing.

PRESENTATION.

On the evening of Monday the 22nd inst., Captain O'Neil was made the recipient of a handsome gold hunting watch and chain, the gift of a few friends who took this means of showing their appreciation of the gallant Captain's services in connection with the various Volunteer movements since 1861. A few of the subscribers accompanied the committee to the Captain's residence, when J. T. Brown, Esq., proceeded to read the following address:

To John O'Neil, Esq., Senior Captain of No. 6 Company of 41st Batt. of Volunteer Militia.

SIR:—I have much pleasure in presenting you this watch and chain as a slight mark of the esteem in which you are held by your neighbours, and which they hope you may long be spared to wear, as an evidence of their appreciation of your services as a Volunteer Officer, having on all occasions heartily responded to your country's call, even when it involved considerable pecuniary sacrifices on your part, and on no occasion, as far as known, did you fail to receive well merited praise from those most competent to judge—for the efficiency and soldier-like appearance of the men under your charge. Without desiring in any way to detract from the deserts of the other Companies composing the 41st Batt., I would be wanting in my duty did I not offer you the congratulations of your fellow townsmen, on your having achieved the honor of being in command of a Company that won the first rank in the district in competing with the Snider Rifle. While this gift has been purchased for you in most part by friends who have known you only in civil life, you are not on that account to think less highly of it, for as one of the committee I can assure you that the men who shared with you the pleasures and fatigues of the camp were on all occasions the readiest to encourage the project, with a hearty "no one deserves it more!" On behalf of myself and fellow committee men, permit me state that we never undertook a duty that we had more pleasure in performing.

While wishing you long life and prosperity, allow me to associate the name of Mrs. O'Neil with yours, and I trust that you will convey to her our apology for the inconvenience we must have caused in coming unannounced, to take temporary possession of the house.

J. T. BROWN,
On behalf of subscribers.

MY DEAR FRIENDS.—I trust you will excuse me wherein I cannot find suitable words to thank you for the very flattering address, and the valuable present accompanying it, just presented to me. I cannot see what I have done to merit so tangible a proof of your friendship. When a boy, in my native land, I heard of your free institutions, representative government, extended canals, noble rivers, lakes and boundless forests. I came to this country and I had never cause to regret it. I have been a member of the Militia organization since the time the insult was offered to the glorious old flag on board of Her Majesty's Mail Ship *Trent*. The war cloud which then and since lingered for a time o'er Canada has happily been removed, and now peace and plenty blesses the land.

I have ever been proud of the Pakenham Rifle Company; a Company that always answered the first sound of the bugle, and whose soldierly conduct has won for me, on more than one occasion, the thanks of the Commanding Officer. A body of brave young men who have always treated me with kindness and respect. On behalf of

Mrs. O'Neil I return you my warmest thanks and I can assure you that she will feel very grateful for your kind expression of regard. Trusting that we may be long surrounded by the same kind hearted friends and neighbours; and that should the day again unfortunately come when the possession of the soil will have to be disputed with the invader, may the people of this country prove that Old England need not fear to trust her flag across the seas—the Flag that has braved a thousand years the battle and the breeze. Again thanking you and wishing all the happiness of this joyous season.

JOHN O'NEIL.

On the inside of case is the following inscription: "Presented to John O'Neil, by a few friends, as a mark of esteem, for his valuable services as Senior Captain No. 6 Company, 41st Battalion Volunteer Militia."—*Carleton Place Herald*.

The *Army and Navy Gazette* (London) has the following regarding the Scott gun-carriage.

While the *Warrior* is receiving new boilers at Portsmouth, it is under consideration to exchange her 9 inch, 6½-ton guns for 9-inch 12 ton guns. This is rendered possible by the use of Captain Scott's (R. N.) high slides and low carriages, which are devised to spread the force of recoil over a large area, and to divide it between the pivot bolt and the racers, and, by their short length, enable the heaviest guns to be trained in less space than the smaller slide guns on the old plan. Heavy armaments can therefore be introduced into iron-clads without any increase of armored space. Indeed, the distance between the ports, has, in all recent ships, been reduced, while the broadside armament has been increased to 10 inch 18 ton guns, thus causing a corresponding diminution in the breadth and weight of armor to cover them, and consequently in the tonnage and cost of the ship. The compressor is self-acting, going out of action when the carriage is raised on the rear rollers for running in or out, and into action when lowered off them, the weight of the gun driving the wedge plates into each other. The carriage is thus tied down to the slide; and the slide is tied down by strong metal hooks to the curved racers on which it traverses or trains; and these latter are solid metal ties binding the beams and decks together, and communicating the pressure over a large surface. The ponderous 18-ton guns thus mounted have been perfectly manageable in the *Hercules* and *Sultan* in the heaviest weather, and using battering charges. There seems no reason why the broadside guns of both armored and unarmored ships should not all be mounted on Scott's new carriages and be doubled in weight, removing corresponding weights of spare gear that can better be spared. These carriages are so perfectly under control that half a dozen men can efficiently work the 18-ton gun, though seventeen men do so with greater rapidity—a number allotted with the old carriages to work the 4½-ton gun. A general doubling of the weight of armament need not, therefore, lead to any increase in the ship's complement of men, but were it not for other important considerations, might be accompanied with a decrease of crew. The *Prince Consort* is already being treated in this way; the *Warrior* will probably follow; and advantage may be taken of other ships paying off to double their weight of armament. We trust that the unarmored ships will be equally favored, as there is no necessary connection between weak defence and weak offensive powers.

The New York *Herald* gives the following account of the destruction of the Venice Arsenal.

At one o'clock on the morning of the 11th of December a fire broke out with great violence in the Arsenal of Venice, in that portion of the building lately occupied by the Directors of Armament and Official Contracts. The locality referred to is situated between the canals of the part of the city known as "Le Stoppar," and the spacious yards in which ships' cables, old guns, and other superfluous gear, are deposited, and in the vicinity of the ancient gates of the Arsenal, where the great fire of 1856 originated. The cause is unknown, and is as yet attributed to accident; but the admiral in command proposes to make an immediate investigation. A strong wind blowing from the northwest proved favorable, for it hurled the sparks and fire brands in a direction opposite several magazines, the explosion of which would have sacrificed many hundreds of lives. The wind, however, fed the fire in its own direction; but the wise directions of the admiral and the indefatigable efforts of the troops and firemen who had concentrated their forces from all parts of the city, succeeded at length in abating the fury of the flames. The principal operations undertaken to protect the magazines were directed by Colonel Morandi, who has charge of the marine artillery, with remarkable energy and presence of mind. The firemen were commanded by Merryweather—a strange sounding name for a Venetian. The removal of the powder from the magazines and a large quantity of cartridges from the barrack stores was performed with great precision. While the fire was raging the steam-pump used by the firemen was disabled. The announcement of this fact almost created a panic in the city. After an hour's delay a boat was rowed up the nearest canal, having a steam cistern on board, which, being worked by very powerful machines, helped to a great extent in extinguishing the fire. The arrival of the steam cistern was hailed with deafening cheers. The two admirals stationed at Venice, all the colonels and military authorities, General Mattel, President of the Roteo; General Mamin, Perfect of Venice; the Procurator Superior and the Procurator of the King; the Questor—all the city officials hastened to the scene of the conflagration. About five firemen were mortally wounded, and one killed instantaneously. The damages of the fire may be estimated as equivalent to \$300,000.

MUTINY AT SEA.—The barque *Stampsede*, Captain Hatfield, which sailed yesterday from Cardenas, returned to-day. Off the Island a dispute arose between the captain and a negro sailor named Francis. The latter was shot in the head by the mate. The crew were insubordinate, and the officers thought it better to return to port. Francis' wound is not dangerous.

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—The very agreeable character of this preparation has rendered it a general favorite. The *Civil Service Gazette* remarks:—"The singular success which Mr. Epps attained by his homeopathic preparation of cocoa has never been surpassed by any experimentalist. By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills." Made simply with boiling water or milk. Sold by the Trade only in 1lb., ½lb., and 1lb. tin-lined packets, labelled—JAMES EPPS & Co., Homeopathic Chemists, London, England.

NEWS OF THE WEEK.

His Royal Highness the Prince of Wales has been able to take carriage exercise, being out for the first time on 21st January, it is intended that he should have a sea voyage, the Mediterranean and Madeira are spoken of as localities which it is likely he will visit. A trip on the Atlantic to the Dominion of Canada would do more to restore his health than anything else, we could like once more to see him amongst us. The thanks giving ceremonies on his recovery are announced to take place in St. Paul's on 27th February.

It is pretty evident that the English people will reap the fruits of their folly by entrusting power to the hands of the Whig radicals, the Washington treaty, that outcrop of intelligent civilization, national benevolence and humanity is likely to be what we always believed it, the greatest political blunder ever perpetrated; the most sanguine supporters of the Whig radicals are in despair as to the probable result of the decisions of the Geneva Conference which is stated to be in effect to saddle England with the whole Yankee war expenditure for the last two years of the internecine strife between the North and South, and it is broadly declared that England will go to war before submitting to any such imposition. If she had kept her rulers from exhibiting their imbecility at Washington she need not now resort to the disgraceful act of repudiating the results of their work, over which she was so jubilant a short time ago. Instead of submitting a clear question of International law to a set of pettifogging schemers she should have resolutely stood on her known rights and not brought about a complication which will result in all the cost of war with the disgrace of being outwitted and the imputation of dishonourable conduct. It is remarkable that the Whig radical organs are loudest in denouncing the handiwork of their agents.

The Count de Chambord has again addressed the French people claiming that legitimacy is the only hope of the country as opposed alike to Caesarism and anarchy. M. Thiers occupies no bed of roses, what with republican plots, monarchical and Imperial intrigues, it is evident his tenure of offices is slight indeed, and he may yet be seen preforming the duty of a sentinel at what remains of the Tuilleries as he did in 1848 by one of those squalls which are so liable to capsize the Ship of State in La belle France, he is reported to have said that if Louis Napoleon had fifty million francs he might be restored in fifteen days, the sum about £2,000,000 sterling, is not a large one for such a brilliant office. Negotiations are still pending with the Rothschilds and other bankers relative to the possibility of furnishing money to pay the Prussian indemnity, and with England relative to the Commercial Treaty.

Reinforcements to the number of 8,000

men have been sent from Cadiz to Cuba, there has been rioting at Barcelona which was suppressed with some loss of life.

The Pope has received the Russian Grand Duke Michael, and it is reported that if allowed to fill the vacant episcopal sees he will sanction the use of the Russian language in the services.

In the United States there is little of interest beyond another shooting affair in New York, this time by a woman, who shot a banker because he insulted her.

The Pacific Railway has been blockaded by heavy snow storms.

The state of the Navy precludes the possibility of taking any offensive action and makes the forcible solution of the Cuban difficulty impossible.

Hon. Caleb Cushing sailed from New York for Geneva, as Counsel for the United States, before leaving he was interviewed and seemed sanguine of recovering every dollar of the claims against Great Britain, especially as the United States had a large coast line along which Alabama cruisers might be fitted out in case of a future war to England's disadvantage, and this flop doodle is part of the Yankee case. Englishmen will swallow all this forgetting that the mighty Yankee nation with all this coast line allowed its commerce to be swept off the seas by a wooden clipper barque. It is a burlesque on common sense to hear how those people talk, they could not oppose a well appointed gun boat.

Her Majesty's Dominion of Canada is in a prosperous condition, the Hon. M. Tilley Minister of Customs at a public dinner at St. John N. B. on the 27th January, stated that at the end of the fiscal year we had a surplus of five and one-half million dollars, and that next session it would probably increase to seven millions. The advocates of Independence, Zollverions and annexation will find small comfort in this state of prosperity, they have not a peg to hang an argument on, and the continual efforts of those people after reciprocal trade relations with the United States, is a direct insult to the good sense as well as the experience of the people. This continual looking to Washington displays a mean and pitiful spirit which may be natural to the party who advocate such a contemptible policy, but it is thoroughly alien to the feelings and wishes of the great men of the people.

Advices from Manitoba and British Columbia are most cheering, every thing evidences a state of prosperity unexampled in the annals of any country, for this the people of Canada have to thank their own loyalty, the wisdom of their Statesmen, and the blessing of the Almighty.

CORRESPONDENCE.

FROM MONTREAL.

[BY OUR OWN CORRESPONDENT.]

The appointment of Major John Martin 9th Battalion, to be Lieutenant-Colonel has

at last been made. Since the resignation of Col. Isaacson some time ago Col. Martin has been in command of the 6th and the promotion though it comes rather tardy, has been well earned. The Colonel is too well known to need any encomiums from me, I can only say the force would be none the worse if we had a little more of the same stuff and spirit as that embodied in the gallant Colonel.

Colonel Bond of Prince of Wales Rifles as indefatigable as ever in any thing tending to the welfare and interest of his regiment has donated it one hundred dollars.

In view of the collapse of the Drill shed, the civic authorities have placed the City Hall at the service of the Militia Department, as a temporary armory for storing away of rifles, accoutrements, and upon condition that no marching is permitted in the place. Everything stored in the wings of the drill shed will consequently be removed to the City Hall in a few days.

About fifty recruits have been sent by the Lt. Col. Bacon, D. A. G., from Military District No. 5, to Quebec to join the newly formed Battery of Artillery. Twenty gunners and officers for St. Helen's Island are expected soon.

Nelson's monument which had been allowed to fall into a most delapidated state, is about to be repaired, the contract price being for two thousand dollars.

Tuesday the 12th inst., is the day appointed for the taking of the municipal census of the City. It is to be carefully and reliably done, so as to attain as near the perfection of accuracy as possible.

B.

His Honor General Doyle, Lieutenant Governor of this province, is talked of in connection with the Governor-Generalship of the Dominion. It would undoubtedly be a great boon to this young country were it enabled to secure His Honor's services in perpetuity as the impartial, genial, and popular ruler he has hitherto proved to be. *Acadian Recorder.*

MILITARY.—The *Bolleville Intelligencer* contains the annexed paragraph, with which we entirely concur:—"The vacancy created in this office in military District No. 4, by the resignation of Lieut.-Col. Atcherley, is not filled. We learn that efforts are being made to have Captain Sharp, late of the Canadian Rifles, appointed, but there is a probability of Lieut.-Colonel Jackson receiving the promotion. If the Minister of Militia desires to prove to the Volunteer force that their services are appreciated, he should not hesitate a moment, if the vacancy is to be filled, in promoting Lieut.-Col. Jackson. He is an old Volunteer officer, and one of the best Brigade-Majors in the force."

Western papers announce the demise of Colonel George Chisolm, of Oakville, one of the survivors of those who fought so gallantly on the Canadian side in 1812, Colonel Chisolm was the father of that worthy gentleman, Mr. George Chisolm, who at one time filled the office of Sergeant at arms to the Legislative Assembly of Canada, and afterwards represented the County of Halton in the same body. The deceased was in

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The Volunteer Review,
 AND
 MILITARY AND NAVAL GAZETTE.

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

OTTAWA, MONDAY, FEBRUARY 5, 1872.

In order to adapt the interior slope of the parapet to the purpose of effective defence it will be necessary torevet it over with sods, wood or stone, and the same operation has frequently to be performed on the exterior slope, the checks of embrasures, the escarpe and counterscarpe.

Sod work forms a desirable revetment (or facing) and may be saved from the ditch during the excavations if the works are on good green sward. It should be laid header and stretcher, the grass downwards, two stretchers to one header, the former being twelve inches square and four inches thick, the latter eighteen inches long, 12 inches wider and the same thickness.

The revetment for the interior slope should be commenced when the parapet had reached the level of the banquette tread, if the exterior slope requires to be revetted it must be commenced on the berm, in laying the courses care should be taken to break joint and to beat down each course firmly, the top course is laid with the grass up, and

care should be taken to make the grass grow, the face should be neatly cut to a line with a sharp spade, if cut from a wet soil they should be allowed to dry a little if put on the work wet they will shrink and cause the revetment to crack in drying.

There is another kind of revetment, a strong mixture of clay and earth well kneaded with water, and if necessary mixed with chopped straw, it is laid in layers of twelve inches thick and two feet broad, it must be put up gradually with the earth of the parapet, rammed well down behind, which should also be observed in the sod facing, the face should be sown with grass seeds, it is called a Pisa Revetment.

This object can also be effected by logs twelve inches in diameter flatted on both sides and pinned together with an occasional tie passing into the parapet, or by layers of three inch plank nailed to uprights set in the parapet.

A Fascino revetment is made by bundles of twigs closely bound together, there are two sizes of fascines; one is nine inches in diameter and about ten feet long, the other which is termed a saucisson is twelve inches in diameter and twenty feet in length.

A fascino is constructed with straight twigs between the thickness of the finger and thumb, they are made as follows:—Two stout poles are driven into the ground obliquely so as to cross each other about two feet above the surface where they are firmly tied together, as many of those as may be required are put up in a straight line about eighteen inches apart, and form a fascino horse on which the twigs are laid to be bound together, two stout levers about five feet, long each are connected near their extremities by a stout cord or chain which should be long enough to pass around the fascino, the levers drawing it tight when pressed down on the twigs which are laid with the small and large ends alternately and they are bound by withes properly prepared by roasting, or stout rope yarn or wire, the ties are placed twelve inches apart, every third or fourth one should be made with an end three or four feet long, having a loop at the extremity to drive an anchoring picket through, in order to form the revetment the first row of fascines is embedded about half its thickness below the tread of the banquette where it is secured by means of the anchoring pickets and by pickets driven through the fascino itself, the knots of the withes are laid inside, and the earth of the parapet packed well behind, a second row is laid on the first and connected with it by pickets driven through both, care being taken to break joints, the top is finished with a row of sods

A hurdle revetment is made by driving poles of an inch and a half in diameter in the parapet nine inches apart, and in direction of the interior slope weaving twigs between them as in basket work, and securing the whole to the parapet by long withes

and anchoring pickets, the top to be finished with a sod.

A gabion revetment is made as follows—a fascino is first laid embedded as previously described, on this the gabion is set and filled with earth, and another fascino laid on top, the gabion having been given the inclination of the interior slope.

Gabions are extensively used in the attack of permanent works, and wherever it is necessary to place troops speedily under cover it is not much used in field Fortifications, but a knowledge of the manner in which it is constructed may be useful. It is simply a basket open at both ends, its height is usually about two feet nine inches, and width two feet, to make it two hoops, the inner the width of the gabion, the outer one and three-fourth inches wider, are laid on the ground into the space between them, pickets about one and one quarter inch in diameter and three feet long, are driven into the ground at equal distances apart, the hoops which are fastened together by small blocks of wood at intervals being placed between them and lashed with pack thread are slid half way up in the pickets, twigs half an inch in diameter and as long as they can be procured are woven between the pickets like ordinary basket work, when finished near the middle the hoops are taken off, the gabion reversed, and the same operation continued till the work is completed at the centre, the pickets are pointed at both ends.

Sand bags are some times used as revetments when other material cannot be procured, they are made of coarse canvas, the bag being two feet eight inches long, and one foot two inches wide, they are filled with earth to about three-fourths of their capacity, the top loosely tied and they are laid like sod work, their principle use is for temporary shelter.

If it is necessary torevet the scarp, the speediest mode is to do so with heavy timber, a cap sill is embedded along the line of the berm, a ground sill is laid below the bottom of the ditch, rebates are cut in both and thick plank placed side by side therein, the cap is retained in place by pieces dovetailed into it at right angles about ten feet apart, passing under the parapet, the slope of the planking should be one in ten, the counterscarp should be treated in a similar manner; if rivetted with stone, it is simply a wall built perpendicularly. Material for the construction of any or all those classes of works are to be found easily in Canada, and the construction of any class of fortifications can be readily effected. In all cases the works should be neatly and carefully finished, especially attention should be paid to ramming home the earth in parapet and banquette as settlement or shrinkage would be a fatal defect.

ENGLAND'S greatest naval victories were won with long 32-pounders, weighing about 56 cwt. To-day guns are manufactured

throwing a 700 lbs shot and weighing 35 tons, the celebrated *Woolwich Infant*, has been repeatedly noticed and its adventures duly chronicled up to its latest mishap, and we have now to notice another candidate for scientific favor in the *Vavasseur* twelve inch steel gun now in process of construction at the London Ordnance Works, and designed to throw a projectile of 600 lbs with a charge of 100 lbs of large grained powder. The charge for the *Woolwich Infant* was 130 lbs, the charge for the 32-pounder being 10 lbs.

The contrasts are very extraordinary, and the construction of the different guns no less so, the old 32 pounder being a cast iron gun, bored out, the *Woolwich Infant*, manufactured of wrought iron with steel tubing in a more complicated and scientific fashion, and the *Vavasseur* 12 inch gun being wholly of steel built up in the most approved artistic style.

The 32 pounder was a smooth bore in which large allowance had to be made for the windage of its spherical shot. The *Woolwich Infant* is a scientific piece of Ordnance, the elongated bolt of which is an accurate fit for the bore, furnished with projecting studs carefully planed to fit the grooves of the rifling and finished in the most elaborate style. The *Vavasseur* 12 inch gun differs in this respect, that it has the rifled grooves on the bolt or shot, and the bore of the gun has corresponding ribs.

The *Broad Arrow* describes this gun as follows:—

We will now proceed to give as detailed an account of the construction of this gun as its advanced state enables us to fully appreciate its peculiarities, and, in most points, most decided improvements. The dimensions are as follows:—Total length, including cascable, 18ft. 9in.; length of bore, 15ft. 10in.; length of rifling, 14ft. 2in.; twist of rifling uniform being 1 turn in 30 calibres; number of ribs, 3—there being no grooves in the gun, but transferred to the shot—a point that may be considered of decided advantage, as the inner tube is thus strengthened by these ribs, instead of, as in ordinary riflings, weakened by grooves. Besides, another advantage of the ribs is that they are more easily cleaned than is the case in the old groove system. Again, it is far less expensive to groove the projectile than the gun. Besides this, the old plan of planing the studs of a projectile was a work of considerably more labour than that now adopted in the ribbed formation of the bore.

The system adopted is that of building up the gun by a series of concentric rings, thus preventing lateral expansion, which would take place at every discharge till the gun was rendered useless.

The construction of the gun is as follows— a main tube 198 inches long, is formed of steel, tempered in oil, it is 21 inches in external diameter at the breech and 17½ inches at the muzzle, the thickness of the walls of the tube being 4½ inches and 2½ inches at the muzzle, over this a steel jacket covering the breech is placed, it is 7 feet 9 inches long and 30½ inches external

diameter, a double series of rings about ¾ inches thick are shrunk one over the other into a compound ring of 7 inches in thickness which is done before the compound ring is itself shrunk over the other, and the structure is complete. It is this latter portion of the compound ring that Mr. *Vavasseur* relies on to distinguish his system of construction, and its advantages are claimed to be offering greater resistance to expansive force than any other, and exhibiting any fault which may occur from over-strain on the outside instead of inside the gun, enabling it to be repaired if necessary.

The interior circumference or periphery of the gun is 3 feet, the exterior 12 feet, the external ring at the vent is forged considerably thicker than the remainder of the gun as compensation for the perforation, the ring carrying the sights is also proportionably increased.

The same quality of steel is used throughout, the inner tubes alone being tempered in oil, the trunnion ring owing to its intricate shape is made of wrought iron.

The tube of this gun is the largest forging of the kind ever made in England.

Mr. *Vavasseur* had previously constructed a 7 inch steel gun on nearly the same principle.

The late meeting of the Dominion Board of Trade has furnished the talented editor of the *Montreal Gazette* with the opportunity of giving the country one of those celebrated pen and ink sketches analytical and descriptive of the occasion and surroundings which has rendered that journal famous.

It is certainly highly creditable to the *Gazette* that it has furnished the country with such ample and truthful reports of what really did occur, but in the analysis of the canal question there is a misconception which the interests of the country demands should be set right. The Ottawa delegation on behalf of the Board of Trade of that city, submitted three papers which they believed should be the basis of the National Commercial Policy; entitled the Canal Policy of the Dominion, the North Shore Railway and Emigration. After the Executive Council had grouped the subjects in the official programme, it was especially expected that they would be considered in the order in which they stood, and consequently it was with some surprise to those interested that the Hon. John Young introduced his now celebrated motion, on the Deepening of Lake St. Peter, which stands No. 29 on the programme and is assigned to the Quebec Board of Trade, as the late Executive Council had surprised the Ottawa delegation with a report open to serious objections, the idea in the minds of the members was that Mr. Howland's amendment was one of those clever flunk movements which are the weapons of a good politician, and as Hon. Mr. Young's resolution placed them be-

tween Scylla and Charybdis they were (in order to have a chance of having the policy submitted discussed at all) obliged to vote for the amendment so called, although in reality it was a substantive motion and that submitted by the Ottawa delegation and ruled out of order was the amendment proper; if there is a fault in the matter it rests with those who brought forward out of regular order a motion for what nearly half the delegation believed to be a mere local work. It is, however, a subject of congratulation that "local selfishness" was gradually eliminated from the Board and the basis of the National Commercial Policy was accepted without a murmur. That the late session of the Dominion Board has rendered good service to Canada politically and commercially is beyond doubt, if any one dreams of a Zollverein independence or its corollary annexation as being acceptable to the people or conducive to their interests, the action of the Board and results of the discussions on the state of our local and foreign commercial relations will speedily dispel such visions. With the general result of the session the people of Canada have good right to be pleased, as the principle was recognised "that this country had a destiny of her own to work out, was fully equal to the task, had resolved to allow no outside interference with their progress, and the first step therein should be the development of the internal resources of the Dominion."

With such a noble object before them it is not likely the commercial men of Canada will be easily discouraged, or that the probable expense of a trip to the political capital will deter them from the discharge of a plain public duty.

There are, however, two prominent questions which have to be finally settled singularly enough both are founded on fallacies, and both have exerted no ordinary fascination on our Commercial Legislators, the first is, the Western Trade of the United States; the second, closer trade relations with that power.

The grain trade of the western states seeks New York as its port of distribution because the greater portion thereof is absorbed by the Eastern States, the United States coasting laws effectually prevent Canadians engaging in this trade and there does not appear to be any chance of relaxation, the small surplus seeking a British market follows the same course, it is about equal in volume to the import trade from that country to the States, and it can be understood how it is entirely secured to United States bottoms, so that the Canadian politician who looks to this trade as furnishing the reason why the Frontier Canals should be enlarged is in pursuit of an *ignus factus* and is not dealing honestly with the people.

The desire for closer trade relations is not justified by any course whatever. A mem-

ber of the Ottawa delegation prepared a statement which was laid before the Dominion Board of Trade which showed that for ten years of Reciprocity our export trade with the United States amounted to \$150,333,434, and for the five years since its abrogation to \$139,781,167, leaving a difference of \$10,552,167 between the two periods showing that our trade with the United States had increased 93 per cent. in the five years since they commenced their Japanese policy of putting heavy duties on our exports. That their own people pay those duties, and that it has the effect of enhancing the value of our products in a most beneficial degree to ourselves, is a fact the most rabid protectionist will not presume to question, and of this we give the following proof.

Mr. David A. Welles, late United States Commissioner of Revenue in a very able report states it is an unquestioned fact that, in 1870, the people of the United States used less sugar and coffee, and fewer boots, shoes, hats, and other articles of universal consumption per head, than they did in 1859. Yet, it is averred, that the whole population of the country, in 1870, exceeded that of 1860 by nearly eight million souls.

As an evidence of the declining prosperity of the country during the same period, he furnishes the following table of the value of exports in 1860 and 1869 respectively:—

	Value of Exports.	
	1860	1869
	In Gold.	In Currency
	\$	\$
Animals.	1,855,091	689,508
Beer, ale, and porter	53,573	9,755
Boots and shoes	782,525	356,290
Candles	760,528	324,995
Carriages	816,973	299,487
Garden and other seeds	596,010	44,816
Gunpowder	467,972	122,562
Hides and skins	1,036,260	219,918
India rubber manufactures	240,844	128,216
Marble and stone manufactures	176,230	65,515
Paints and varnish	223,809	91,452
Paper and books	564,066	290,098
Pot and pearl ashes	882,820	187,004
Soap	494,405	384,950
Tobacco (manufactured)	3,337,082	2,101,335
Trunks and valises	37,748	24,800
Wool and Woollens	389,512	237,325

With such a record it will not be easy to persuade the Canadian people that any particular benefit will be likely to arise from closer commercial relations with the States or that annexation is the *summum bonum* of all earthly good.

The Dominion Board of Trade by giving prominence to those questions and thoroughly investigating their value has proved its usefulness as an institution and demonstrated the fact, that Free Trade is our true policy, and the improvement of our internal canals necessary to the development of our resources.

Lieut Colonel G. T. Denison, jun. possesses the happy faculty of "crystalizing an idea," at the right time and placing it before the public in such an attractive form as to

command attention; a comparatively young man he has carved his name in deep and lasting letters on the roll of literary soldiers which this age has produced, and in the peculiar arm of the profession to which he belongs, he has achieved the enviable reputation of being at once the theoretical and practical expositor of its organizations and application which this or any other country has produced, his work on modern cavalry has been translated into most of the modern European languages, and in the *Canadian Monthly* for January he has furnished an article on "The Cavalry Charges at Sedan," which is not inferior in style, analysis, or practical conclusion to anything in the shape of a military essay we have ever read.

In the space of six pages he has managed to give a neat historical review of the modern history of heavy cavalry, of the musket, the theories deduced from the introduction of breech loading weapons of precision, the tactical lessons of the autumnal campaign, the disastrous charge of the French light cavalry at Sedan, and the conclusion arrived at that "sooner or later heavy cavalry will have to be done away with; but the late civil war in America fought over a country much like our own, has shown us that there is looming up in the future a species of light cavalry—the mounted riflemen—which is destined to play a great part in the wars of the future."

Colonel Denison shows that such a force is peculiarly adapted to the topography of Canada as well as to its circumstances, and says. "Although there is no service which requires so much individual intelligence we have as good material from which to organize a force of mounted riflemen as can be found in any part of the world. In the young farmers of this country we find a class owning their farms, accustomed to out-door life, and possessing in addition to physique and intelligence two great qualifications for a dragoon, namely, a good seat on a horse and a general knowledge of the use of the rifle. A small amount of drill and a little practical training in outpost and reconnoitering duty would make these young men a most valuable force for defensive war."

The writer then shows that our cavalry according to General Macdougall's theory of war, should be one fourth of our whole force while it is positively less than one-thirtieth, and that in a country where a large number of our infantry volunteers ride their horses to drill and leave them tied to fences and under driving sheds while they are being taught infantry manoeuvres in the drill room.

Our army is in a state of progressive organization, it would neither be wise or prudent to press it too much. Cavalry equipment costs heavily, and the Canadian House of Commons is not famous for extra liberality for military purposes. It is to be hoped, however, that Legislators will be brought to

see what the true interests of the country really demands in this case, and we would earnestly recommend the perusal and study of Lieut. Colonel Denison's article to them, the concluding portion of which accurately describes the future of the country, the duty and aspirations of its people.

"The Northern portion of this continent is destined to be the home of a great and powerful Nationality. It is our duty, therefore, now in the youth of our Dominion while it is gathering strength under the protection of the mother country, to lay the foundations of a military power. As long as our people are defensively warlike we have the best safeguard for peace. It is our duty to let other nations see that while we desire to live in friendly terms with our neighbours and with the whole world, nevertheless, if any attempt be made to deprive us of our independence and our National existence, it will be met by the energies of a determined and united people, organized, armed and led so as to give the utmost possible effect to our small population, a thorough organization and a confident self-reliant spirit it is all that is required to secure the peace which we all desire."

While Canada can produce native officers like Colonel Denison, it is very evident she will have little to fear from the efforts of any power, the country feels proud of such men and with good reason.

The Cavalry Charges at Sedan should be read and studied by every Canadian Officer.

Our gallant correspondent *Subscriber* (whose communication appears on another page) takes exceptions to our idea of the organization of an Engineer corps for the Canadian army, and gives a very interesting synopsis of the composition, duties, education and training of the Royal Engineer Corps.

It would be very desirable to establish a force of that description in Canada, if the country could afford to pay for their services—but as our military force is organized on the voluntary principle, and the rate of remuneration for the rank and file, about one-third what they could earn without any risk whatever, at ordinary labour it would not be very likely that artisans earning two or three dollars per diem would voluntarily relinquish the advantages for about sixty-five cents per diem, with the privilege of wearing a scarlet coat and being made a target of in addition.

Canada does not require an elaborately trained corps such as the Royal Engineers, —the rank and file of such a corps would be useless to her, she has no extensive fortifications or dependencies, where their services could be rendered available, and where it would be cheaper than that of an equal number of officers—for it must be remembered that the rank and file of the Royal Engineers more frequently perform the duties of Assistant Engineers and Surveyors than that of artisans.

What is really needed is a certain number of Engineer officers attached to each district staff, and only paid when on service, in every other respect they would be on the same footing as any other Volunteer officer. The Staff College alluded to by our correspondent might be a useful institution, though that is doubtful, the conclusion arrived at by experience is that staff officers acquire a better knowledge of their duties on service than elsewhere, and as permanent staff appointments are not numerous in the Canadian army, little good would arise from training up at great expense a few individuals whose services might never be required.

The theory and practice of our military organization is most decidedly contrary to that sought to be achieved by "competitive examinations," the first requisite with us in the ability of the would be officer to raise his corps, the next to give him the opportunity to qualify for its command, and if in the course of events he succeeds to the rank of field officer, his successor is generally his subaltern or some member of the corps, whose influence is sufficient to keep up the organization; under these circumstances a corps with exceptional privileges such as would be conferred by Staff College training would create envy and dissatisfaction, and entirely fail to harmonize with the other parts to the great detriment of the whole.

The Engineer Corps we wish to see organized, would make a corresponding sacrifice for their commissions to that made by the Infantry or other officers, by waiving professional advantages which had been acquired at their own expense, and placing their services at the disposal of the country, and they are not required for the purpose of constructing elaborate or costly defensive ranks, but to supply that topographical and other information, which the Canadian War Offices so badly needs, and a certain number should be sent to Woolwich to learn the duties of Ordnance Officers. The organization of the Artillery is nearly completed, that of the Engineer Corps should be commenced.

The Commercial Policy of Canada should be governed by the absolute necessity for developing the material resources of the vast area of Territory owned by Great Britain on this continent, and as these resources are generally at present composed of the products of the field, forest, and mine, the direction of our Export trade is naturally towards that country which furnishes a free and unfettered market for those commodities.

Some of our merchants dazzled by the glitter of the trade of the Western States of the neighbouring Republic have adopted the idea that a better and more profitable market is to be found there than in Great Britain, and are of opinion that a more remunerative trade can be pushed amongst 40,000,000 of people than as they express it

amongst 4,000,000. Very little reflection is necessary to show the fallacy if not absurdity of this reasoning.

The United States possess in abundance all the varieties of raw produce available in British America and in every case competition in similar articles is to be encountered. As a matter of course our exports are not in as great demand there as in a country that does not yield such articles.

From a variety of causes, but principally from the vicious doctrines of protection and high tariffs, the manufactures of the United States as a general rule are inferior to and higher priced than those of Great Britain, and as the conditions of commercial success demands that the produce should sell in the dearest and buy in the cheapest market common sense and our own interest should fix the direction of our export trade. In addition to which the British Isles opens to us a market of 32,000,000, her Colonies, 14,000,000, and her other possessions more than 150,000,000 souls, so that under our own flag the trade of nearly half the civilized world is open to us in British Ports, and we are coolly asked to abandon all this for the sake of helping our Yankee neighbours, to pay their war debt and to share in a local traffic where the keenest competition would be encountered.

The cry of protection to our local manufactures has been got up and is faintly heard now and then at intervals; one or two Journals have essayed to support and labored hard to galvanise it into life, but our farmers are sufficiently acute to know the difference between a quarter and a half dollar and will not permit legislation for the benefit of individuals; if Canadian manufacturers cannot produce what our people require cheaper than we can import from Great Britain it is decidedly the interests of our population to send their produce there and receive in return the cheapest article.

The day is gone by never to return when protection or more properly monopolies can be created for the benefit of individuals, it is recognised as an indisputable political axiom that the agriculturist is at once the only producer and consumer, that the burden of the maintenance of the States rests on his shoulders, and that those gentlemen manufacturers and merchants are really only agents through whom individual barter is collectively effected, that in the transaction they make profits both ways, i.e. on the article passed through their hands, and by their immunity from taxation for National purposes.

It is well known that merchants do not pay excise or import duties on articles for their own consumption, and that they can only be reached by municipal taxation, or by income taxation, in this respect they are the most favored of all classes, and it is sheer nonsense to demand protection for their traffic.

Any cry in that direction is not for the public good but for private interests, and

any movement therefor tends to burthen the farmers more heavily, the interests of the country demands unrestrained free trade; without legislation or treaty the people of the United States must have certain articles of our commodities they do not produce as cheaply, it is not necessary that we should make laws to help them thereto, they want and must have them wherever they can be found; on the other hand they produce nothing that we cannot procure cheaper elsewhere, hence, this looking to Washington in our trade arrangement is simply treason to our own best interests, and our policy with reference to the States should be to keep clear of all complications whatever with them.

We have our manifest destiny to work out by minding our own business, and that is to develop the resources of the country by opening it up by railways and canals, and inducing a steady influx of population to follow our public improvements.

Trade with a foreign power sounds well, but is rarely as prosperous as trade in our own hands, because the most profitable part of it—the carrying trade—would pass into the hands of foreigners. If the Reciprocity Treaty had not been abrogated Canada would be a poor country without any marine, while to day she is the fourth naval power in the world.

Major A. Irvine, in command of the Garrison at Fort Garry, visited the Capital during the past week. We are happy to say the gallant officer is in the enjoyment of good health. We hope he will return to his command in a position befitting his abilities and in consonance with the interests of the country.

REVIEWS.

Blackwood for January has been received, it contains: *The Maid of Sker*; *French Home Life*; *The Two Mrs. Soudamores*; *The Nine Hours' Movements*; *The Desolation of Jerusalem*; *Chersiphon*; *The Haunted Engbenio*; *A Sailor's Narrative of the last Voyage of H. M. S. Megera*. The Leonard Scott Publishing Company reprint all the English Magazines.

The *New Dominion Monthly* for February has been received, it is full of most, interesting matter and contains a portrait of H.R.U. the Prince of Wales.

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

HOLLOWAY, Ont.—Mr. Lewis Marsh, (Per Ens. E. Harrison, Jr., Belleville) \$2.
 TEMPLETON, Que.—Lieut. R. Barber, \$3.
 HALIFAX, N.S.—(Per Capt. & Adj. L. J. Handy)—Lt.-Col. W. H. Pallister, \$2; Lt.-Col. J. J. Bremner, \$2; Capt. A. G. Heston, \$2; Lt. W. M. B. Peurman, \$2; Major J. E. A'Bro, \$2; Capt. F. A. Purcell, \$2; Lieut. T. J. Walsh, \$2; Ens. J. F. Pimock, \$2; Capt. J. R. Graham, \$2; Lieut. G. Ashmore, \$2; Lieut. G. H. Williams, \$2; Capt. J. D. McIntosh, \$2; Capt. G. E. Franklin, \$2; Capt. W. D. Harrington, \$2; Major G. R. Anderson, \$2; Qr.-Mr. R. C. Hamilton, \$2; Lieut. F. W. Russell, \$2; Adj. G. T. Smithers, \$2; Lieut. H. Flowers, \$2.

THE BRAVE OLD PLOUGH.

A song to the plough, the brave old plough,
That hath ruled the wide world o'er,
For life and good fare on his strong steel share
Shall depend for evermore;
There is strength in his beam, as the tolling team
Turns the furrow so long and deep,
While it mellow the sod, we have trust in God
That His promise he will surely keep.
Then a health to the plough, the brave old plough,
Who hath fed all nations gone;
And glory as now to the brave old plough,
When a thousand years have flown.

Thou hast seen the time when no pealing chime
Was heard the world wide through;
When the king's broad hall and the cottage small
Of a Christmas never knew;
And many a day along the highway
Have hundreds striven vain;
They are dead—they are gone, to earth's bosom
borne.
But the plough, it still doth reign.
Then God speed the plough, the brave old plough,
Who hath fed all nations gone;
And glory as now to the brave old plough,
When a thousand years have flown.

Thou hast seen the times, in many a clime,
When the bread was hard to win,
When great and small, at hunger's call,
Were led into deadly sin;
But thou ne'er canst say thou hast seen the day
When want bowed the strong man's head,
The righteous man's seed in his greatest need,
Ever begg'd for the daily bread.
Then God speed the plough, the brave old plough,
Who hath fed all nations gone;
And may glory as now encircle the plough
When a thousand years hath flown.

TACTICS.

(Continued from page 51.)

The tactical position of field artillery in modern war does not seem to have been understood by the French, who laboured in the late campaign under the disadvantage of possessing a gun which was too heavy, and yet carried too light a projectile. The Prussians brought light galloper guns (4-pounders) into the field, as well as 6lb. guns capable of throwing a 15lb. shell. In all the early battles the Germans outnumbered the French in guns in a larger ratio than in men. Up to 1866, the artillery of the Prussian Guard alone fired shrapnel with a time fuze. In 1870 shrapnel was fired from the guns of position even, and the time fuze could be set to explode at 2,000 odd paces. No solid round shot were used, and we may here remark that this fact facilitates the growing habit of diminishing the distance between infantry lines of attack. The German percussion shell was conical; and even when it did not burst on striking the soft ground, there naturally was no "ricochet." This seems a disadvantage. The Napoleonic idea of massing artillery is a thing of the past. Battles in the open country, such as the latter ones of the campaign, when the relief of Paris was attempted, commenced with an artillery duel. The defending army is more or less hidden from view; the attacking force has to face the fire of a hidden skirmishing line, at a manifest disadvantage. The gun possesses a longer range, than the rifle, therefore artillery passes to the front, and, at 1,200 yards range, searches and shakes the infantry position. For this purpose the guns of the division, as it were skirmish by batteries properly escorted. Horse artillery, with a cavalry escort, probably makes an effort to turn or enfilade the unascertained position, and whatever movement the assailant makes the defender counters. After a time the infantry forges ahead, and the disposition of the artillery must needs change; it establishes itself on heights, in order to fire over the infantry, or it takes ground to a flank, so as to sweep obliquely across the front. The great want is an escort, both mobile and effective, to give guns freedom of action away from the main army. A certain number of guns may

be employed in disturbing the comfort of the reserves, but artillery on the flanks can alone give material assistance to the attacking line. The Prussians have one Jager battalion to every corps. A company of these men, lightly equipped and trained to rapid movement, makes an admirable artillery escort. Dismounted dragoons were not thus made use of; but although a complete system of cavalry reconnaissance was the great hit of the campaign, German cavalry is sadly behind the age in many respects. The material is excellent, but by no means made the most of; for instance, the dragoon was armed with a breech-loading carbine; on outpost duty, the lancer, with a pistol, was equally, if not more formidable. What did this fact prove? Certainly not that a lancer is a serviceable *vidette*; but that the dragoon neutralized the advantages of a breech-loading rifle fire arm, by a total ignorance of the way to employ it. In the first place the weapon is a very poor one, and in the second it was fired from off the horse's back. It does not require very acute perceptive power to discover that a dragoon's horse, in the present day, ought to be frequently used as a locomotive, designed to transport marksmen with the utmost rapidity from place to place. The proper defence for artillery will be the dismounted light dragoon. A dragoon should never fire without dismounting, except to give a signal. This fact calls for no demonstration. If it were not the writer's intention to devote a chapter exclusively to modern cavalry, the German giant, in shot-proof armour on his sixteen hands of undefended horse flesh, should find his cuirass a poor protection against the pen, even though it may have turned half a dozen spent bullets during a six month's war.

If the modern horseman requires, "as triplex circumpectus," in addition to the covering already afforded by his horse's head from projectiles fired at a lower level, let no time be lost in the composition of a cavalry dirge.

That German cavalry will be handled in a different manner in the next campaign, the writer feels confident; but in 1870 their only marked success was outpost duty and Cossack manoeuvre. It was achieved under the most exceptional circumstances, never likely to recur. Greek did not meet Greek. The result is, therefore, unreliable, and must not be quoted as a precedent for war. The writer is aware that this is not the generally received opinion. In high places an opinion has been expressed favourable to heavy cavalry; and, unquestionably, a finer body of men and horses than the Cuirassier regiments of Prince Frederick Charles's army never were placed in the field. In the first place, the horses were well up to the weight of the enormous men on their backs; their condition was admirable all through the winter campaign—thanks to the quadruped having enjoyed luxury designed for bipeds. If a German horse soldier could find no stable, he made use of a "salon" on the ground floor; but, except under unavoidable circumstances, the horse was neither exposed to damp nor cold. This care, added to a liberal supply of grain, will all ways keep up condition. Then, again, except when in contact with men whose proper position was on land ship, what resistance did the German cavalry meet with after the capture of Sedan? There is no reason to suppose that the cuirass was anything but an encumbrance. It was a case of handicapping a horse for a walk over. The writer by no means joins in the popular outcry for light men on swift horses. A dragoon should be a strong, muscular, long limbed

man; and his horse must be able to carry him. Hussars may be lighter men; but the light man must trust to his fire-arm more than to his sword; and his sword should be made exclusively for pointing. The writer remembers an instance of a "light weight" on a thorough-bred making a laudible effort to diminish the number of mutineer Sepoys by one; he delivered "cut one" on the head of a receding black-skin, and was rewarded by a sardonic smile. The result would have been different (may be in this instance less satisfactory,) had the point of a straight sword been directed towards a fifth nigger-rib (for the writer had always a shrewd suspicion that the thick head belonged to an officer's servant or a mess cook.) The German cuirassier has a magnificent straight sword, and his great muscular strength and long reach would make him a very formidable antagonist, if he had only left his armour at home. The writer was informed that the captured Chassepot carbine was served out on the field to cuirassiers, but he is unable to vouch for the fact. At the battle of Vionville, the 7th Cuirassier regiment charged and took a French battery by surprise. With admirable dash and presence of mind, the regiment passed on over an escorting battalion of infantry, and was afterwards checked by a fire of a mitrailleuse battery. Out of 490 sabres, 147 only live to boast of the exploit. The captured battery and the spread-eagled battalion took ample revenge on the retreating horsemen.

The shot-proof cuirass was found wanting and even the long sword had but a momentary triumph. What a very harmless thing a charge is, even of heavy cavalry? Did the heaviest kill thirty men at Balaklava? Certainly not more. It is sure they killed ten? Peradventure, not more than five died. Cavalry will only form part of the tactical line of battle in small numbers; and as a rule, a single regiment should attack by wings, or in open columns of squadrons. A single line of cavalry, advancing without one or more supports, may be called a false movement. The future tactics of cavalry in the general line of an action will partake of the nature of hide and seek. Theoretically, cavalry will be well placed in echelon on the exposed flank of an army (on the defensive) near enough to be brought to they front by signal, when the enemy's fire waxes weak.

Did the cavalry in any early action of the campaign engage infantry without sustaining a loss out of all comparison to advantage gained? The French 8th and 9th Cuirassier regiments made a supreme effort in the retreat from Woerth; but where are they now? Prussian cavalry headed back Bazaine's first effort to escape from Metz, without severe loss; but how many Cuirassiers survived Sedan! No! Cavalry must not be used as in those fabulous good old days. Their presence is no less needful on the battlefield, but the revolving bolt is a most propaic but effectual suppressor of dashing heedless chivalry. Cavalry must be handled with intelligence. To make a *vidette* or skirmisher of a lancer in a close country would not be a proof of intellect, if riflemen existed.

But, as regards the more important tactics of infantry, 1870 afforded an instance of columns facing columns. The Germans, with all their experience, adhere to column attacks. The French, who after all, were once good soldiers, and will be so no doubt again, also adhered to their columns. As we, inexperienced English, justified in blindly preaching the doctrine of deployed lines! The British was once the ly soldier with son

"morale" and self-confidence sufficient for line formations. But is the British soldier in the present day mentally and physically superior to the German?"

Would it not be wise to admit the possibility of our lines wanting in stability when facing Prussian infantry, if only for the sake of argument? The Germans had much experience, yet they attacked St. Privat with columns, and these were the *élite* of the Prussian army—the Guard. Their loss, as one might suppose, was enormous; still, to-morrow, they would adopt the same formation. The author trusts assistance will be given him in further discussion on so important a question.

If the distance between lines be decreased will the compromise suffice? A battle, when the sharpshooting business is over, must prove quick and decisive. There is no such a thing as throwing back a line of 1/16th of a circle on the centre company of a flank regiment in modern battles. When a weak point shows itself support must be at hand. The breaking up of a first line is the work of a moment, when quick firing and bayonet charge begins.

The writer deprecates any dogma being laid down on a theorem of such vital importance.

The official account of the campaign of 1870 ought to be translated and served out as food for the official mind: and if the peace manoeuvres of the British division in 1872 bear any resemblance to those in vogue for the last fifteen years, the military talent of Great Britain may be pronounced precarious. But why should this be the case? The Drill book is second to none the army is daily becoming more professional: and who will dare assert that British generals are incapable of affording their subordinates practical demonstration of historical and theoretical truths?

On no single occasion did the French army of 1870 prove a worthy heir to the glorious name of a warrior race. Outwitted, outnumbered, outmarched, undisciplined, uneducated, unsupplied, by hundreds of thousands it glided into bondage, leaving a defenceless nation to rue the day when confidence first reposed in the peccant judgement of one human genius. Thus will it ever be when power is centralized and becomes the monopoly of one individual and his satellites. The individual may mean well, but it is not in mortal man to close the ear to flattery or resist the soothing comfort of a routine narcotic. Begone, spirit of unrest! Why torture me with novelty? 'Tis the king, am content—what wouldst thou more? The despot sleeps, the courtiers laugh, Diogenes returns to his tub, and the nation is ruined?

THE UNITED STATES COAST SURVEY.

Few persons who have not examined in detail the work of the Coast Survey have any ideas of the magnitude and importance of the results which have been obtained, and of the credit which its management has brought to the country. From a very small beginning in 1807, it has gradually attained a position in which it holds the respectful attention of the whole scientific world. In that year, upon the recommendation of President Jefferson, Congress passed an act authorizing a full and accurate survey of the coast of the United States, and Mr. J. R. Hassler, who had some experience in the work of the kind done in Europe, was appointed to take charge. While he was in Europe attending to the construction of the necessary instruments and obtaining the necessary outfit, the war broke out between the United States and England. The work,

thus hindered and delayed, did not commence until 1817, when Mr. Hassler commenced operations on Long Island. It was almost immediately interrupted again by the want of funds, and in the following year the law appointing the superintendent was repealed. It was not until 1832 that the matter was again forced upon the attention of Congress. The existing charts had by that time been found so accurate, and the consequent danger in navigating the coast so great, that the Secretary of the Navy was compelled to declare them expensive and unsafe, and recommended a geodetic survey of the coast, as contemplated in the law of 1807. Thus urged, Congress again authorized the survey, and made an appropriation for the purpose. Mr. Hassler again took charge of the work, and continued its superintendent until his death in 1843.

Owing to the novelty of the work in all its branches in this country, Mr. Hassler had many difficulties to contend with, but notwithstanding, very creditable progress was made, as may be inferred from the fact that his triangulation covered an extent of about nine thousand square miles. But the fitting symbol of the United States is the flying eagle. Nothing is ever fast enough for its restless wings. Clamors arose in Congress that the work was too slow, and a committee was appointed to investigate. But, though anxious to find the clamors just, that committee was compelled to endorse the plan of Mr. Hassler in every respect.

Soon after this, in consequence of Mr. Hassler's death, the work passed into the charge of Professor Alexander Dallas Bache. This gentleman soon became impressed with comprehensive and just estimate of the magnitude of the work, and urged a more extended system in accordance with which the survey should be commenced and carried on in many places at the same time, each independent of the other for the time, but finally to be combined in one connected whole. His recommendation was immediately approved and the appropriations made. In five years the work was in successful operation along the whole coast and in the Gulf of Mexico, and when California was annexed the Pacific coast was included in the general plan. The survey continued in the charge of Prof. Bache until his death, which occurred in February, 1867, and was universally and deeply lamented by his scientific associates and a multitude of personal friends.

Professor Benjamin F. Pierce, the distinguished astronomer and mathematician, succeeded Prof. Bache, and now superintends the operations of the coast survey. Some idea of the extreme accuracy with which the survey is carried on may be obtained from a description of the manner of measuring the base lines of the primary triangles. Four bars, each a little over two yards in length, are clamped together, end to end making a combined length of eight yards, or of exactly eight French metres. These bars are stiffened by being placed in a wooden box, allowing the ends to project beyond the box, the whole forming a measuring rod which is used as follows. The compound bar is carefully placed in position in the line to be measured, and a powerful microscope placed over the forward end and adjusted so that its crosswise exactly coincides with the edge of the bar. The bars are then advanced until the rear edge comes into exactly the same position under the microscope that the forward edge has just left. A microscope is now adjusted over the forward edge again, the rod advanced as before and adjusted to its second position. This process is repeated until the base line

of six miles more or less, is measured. During the whole time the temperature of the bars has to be carefully observed. The base line apparatus now in use was devised by Prof. Bache, and has superseded the one here described on account of its greater accuracy. The measuring bar is so constructed that its length is not affected by changes of temperature, and greater nicety is obtained in making each successive length of the bar commence precisely where the previous one ended. Such accuracy has been obtained in the use of this apparatus that repeated measurements of the same mile do not differ from each other more than the one-twentieth of an inch. The necessity for such accuracy does not at first sight appear, but becomes evident when we remember that an error of one-thousandth part in the base line is reproduced in such a way that all the lines measured will be an error one-thousandth part. This in a line of one hundred miles would be about five hundred feet. An error of five feet in that distance would disgrace the survey. In order to verify the triangulation a line is established by means of it at a considerable distance from the base, and then measured with the base line apparatus. The length of the line by the two methods should agree. It is a source of gratification to those who take pride in the successes of their own country that our Coast Survey, tried by these checks, is not surpassed by the most careful surveys of any other country. The accuracy which is indicated by this method of measuring the base lines is an example of the accuracy required in every part of the survey. In every triangulation the form of the earth has to be rigorously taken into account, and the angles are obtained by repeated measurements with the most accurate instruments. The geographical positions of the various stations have also to be fixed by the most refined astronomical observations, reduced by the most elaborate and accurate methods. In this way the assumed figure of the earth is constantly tested, and the effect upon the plumb line of its irregularities and want of homogeneity shown. Two methods of making astronomical observations, first introduced into work of the kind by the United States Coast Survey, have drawn very flattering commendation from the old astronomers and masters of survey in England and Europe generally. They are that of determining the latitude with the zenith telescope, and that of determining the longitude with the sid of the telegraph. The accuracy obtained by these methods is such that they have nearly superseded all others.

Following the determination by triangulation and astronomical observation of the position of points on the land, comes the survey of the sea bottom. Here, also, valuable accuracy is only obtained by great labor and faithful attention in all the details of the work. It involves the production of an accurate chart of the earth beneath the water along the whole coast, giving the form of sandbars and the position and shape of rocks, and showing how these are affected by tides and currents. It thus relieves the tempest-tossed sailor from dangers which in times past have put so many lives and so much wealth to the hazard—dangers more scorned, it is true, by the sailor than by the landsman, safely housed at home, whose pockets are depleted and his wealth buried in the sailor's watery grave.

Some of the best fruits of the survey are brought out in the topographical branch of it, where the mapping of the shores is carried as far inland as is required for the purposes of navigation and the defence of the

coast. The surveys are made by means of the plane table, the original or field sheets being on a scale of six inches to a mile. On these maps or charts are represented the outlines of the shore, the irregularities of the surface, the forms and dimensions of the hills, forests, streams, rocks, meadows, towns and villages, with the most perfect accuracy. Incidentally, much valuable information has been obtained with reference to the Gulf Stream, that mighty warm river which marks the approach to our coast, and is so important a feature in the physics of the ocean.

Such progress has been made in the study and observation of the tides, that for some years past tables have been published by the Coast Survey office giving with accuracy the times and heights of the tides for all the principal parts of the country.

A few statistics drawn mainly from the publications of the office will show an amount of work unequalled by any other survey of the kind in the world.

At the close of 1870 the survey of the Atlantic coast had so far advanced as to be nearly completed from the Penobscot to St. Augustine, and Florida Keys and Reef entirely completed, and the Gulf Coast about one half completed, the important localities being first surveyed and the intervening portions filled up afterward. This whole coast line of five thousand miles is accurately represented in a continuous series of one hundred and fourteen charts on a scale of nearly one inch to the mile, besides which all the principal harbors are represented on larger scales, and a series of general charts, embracing the whole in sixteen sheets.

Proportional progress has been made on the Pacific coast, and the whole number of charts now published of the Atlantic, Gulf and Pacific coasts is about two hundred and fifty, unsurpassed by any work of the kind ever executed.

In order to obtain these results, the survey has covered with its triangles sixty thousand square miles, and has determined the geographical position of twelve thousand stations. The topographical branch has mapped twenty one thousand five hundred square miles on a general coast line of forty-eight hundred miles, and delineated a shore line of fifty thousand miles. In the hydrographical branch nine million six hundred and nineteen thousand soundings have been made in lines which, united, make up the round sum of two hundred and twenty five thousand miles. These soundings are not taken nor the lines in which they are run at random, but with the same systematic accuracy that pervades the whole of the work.

THE LAW OF STORMS.

In the fourth meteorological report by Professor S. P. Espy, of Washington D. C. We find the following instructive generalization:—

1. The rain and snow storms, and even the moderate rain and snows, travel from the west toward the east in the United States during the months of November, December, January, February and March, which are the only months to which these generalizations apply.

2. The storms are accompanied with a depression of the barometer near the central line of the storm, and a rise in the barometer in the front and rear.

3. This central line of minimum pressure is generally of great length from north to south and moves side foremost toward the east.

5. The velocity of this line is such that it travels from the Mississippi to the Connecticut River in twenty four hours, and from the

Connecticut to St. John, Newfoundland, in nearly the same time, or about thirty six miles an hour.

6. When the barometer falls suddenly in the western part of New England, it rises at the same time in the valley of the Mississippi and also at St. John, Newfoundland.

7. In the great storms the wind for several hundred miles on both sides of the line of minimum pressure blows toward that line directly or obliquely.

8. The force of this wind is in proportion to the suddenness and greatness of the depression of the barometer.

9. In all great and sudden depressions of the barometer there is much rain or snow; and in all sudden great rains or snows there is a great depression of the barometer next the centre of the storm and rises beyond its borders.

10. Many storms are of great and unknown length from north to south, reaching beyond our observation on the Gulf of Mexico and on the Northern Lakes, while their east and west diameter is comparatively small. These storms therefore move side foremost.

11. Most storms commence in the Far West, beyond our Western observers, but some commence in the United States.

12. When a storm commences in the United States the line of minimum pressure does not come from the Far West, but commences with the storm and travels with it towards the eastward.

13. There is generally a lull of wind at the line of minimum pressure, and sometimes a calm.

14. When this line of minimum pressure passes an observer toward the east, the wind generally soon changes to the west, and the barometer begins to rise.

15. There is generally but little wind near the line of the maximum pressure, and on each side of that line the winds are irregular, but tend outward from that line.

16. The fluctuations of the barometer are generally greater in the northern than in the southern part of the United States.

17. The fluctuations of the thermometer are generally greater in the northern than in the southern part of the United States.

18. In the northern parts of the United States the wind generally sets in from the north of east and terminates from the north of west.

19. In the southern parts of the United States the wind generally sets in from the south of east, and terminates from the south of west.

20. During the passage of storms the wind generally changes from the eastward to the southern part of the United States.

21. The northern part of the storm generally travels most rapidly toward the east than the southern part.

22. During the high barometer on the day preceding the storm, it is generally clear and mild in temperature, especially if very cold weather preceded.

23. The temperature generally falls suddenly on the passage of the centre of great storms, so that sometimes, when a storm is in the middle of the United States, the lowest temperature of the month will be in the West on the same day that the highest temperature is in the East.

Some of the storm, it is true, are contained entirely, for a time, within the bounds of my observers, and in that case the minimum barometer does not exhibit itself in a line of great length, extending from north to south but it is confined to a region near the centre of the storm, and travels with that centre toward the eastward.

From these experiments it may be safely

inferred, contrary to the general belief of scientific men, that vapor permeates the air from a high to a low dew point with extreme slowness, if, indeed, it permeates at all; and in meteorology it will hereafter be known that vapor rises into the regions where clouds are forced only by being carried up by ascending currents of air containing it.

PAYMENT OF TAXES BY THE QUEEN.—In the Manning and Dilke controversy as to the payment of taxes by the Queen the former has decidedly the mastery, and has proved beyond the reach of contradiction from his own department and position that Her Gracious Majesty Queen Victoria pays income tax as levied upon the subjects of this realm which in amount will perhaps balance the amount made by all the admirers of the latter. But go a step further than the Controller, and refer to a document which neither plebeian nor baronet can gainsay—viz, an Act of Parliament—that the Queen pays the same stamp duties as the meanest of her subject (33 and 34 Vict., chap. 97, sec. 5), which received the Sign Manual on the 10th August 1871, is in these plain terms, which even a Dilke cannot misconstrue before the most extremely Radical assembly that can be gathered from the most Democratic population in or out of Chelsea “Except where express provision to the contrary is made by this or any other Act, an instrument relating to property belonging to the Crown, or being the private property of the Sovereign, is to be charged with the same duty as an instrument of the same kind relating to property belonging to a subject.” When this Act was first mooted as a bill in the spring of 1870, the *Court Journal* was the only public print that called early attention to that provision contained in clause 5, and recommended several modifications that were adopted. It is a self denying law not generally known to stand on the Statute Book and one which persons in the lower ranks of life cannot well appreciate as the heavier duties only affect the rich aristocracy of the land. When an estate of £30,000 changes hands the purchaser pays to Revenue one hundred and fifty pounds of stamp duty on the conveyance. A mortgage for the half of the price yields £18 15s. of duty to the Revenue, a settlement for £15,000 implies a duty of £37 10s., a bond of annuity for \$15,000 yields £300 of duty; a lease for £7,000 pays £55. An appointment, to an office yielding £4,100 per annum to the holder must be granted upon a £500 stamp. How can those who shout approval to stamp orators know anything about that world of bias above them where such exactions must be met as well as levied when they are told by angles from that region, girded with the hereditary belt and glittering sword of honor, that taxation is a pressing weight on them, while the highest lady of the land is free from the burden of its weight?—*Court Journal*.

The Russian *Intalide* publishes a detailed report of the armaments of the Russian army. It appears that a sufficient number of breech-loaders now have been manufactured to supply the established number of troops for the army when on a war footing. Metallic cartridges are being constructed to an amount proportionate to the number of rifles. By the 1st of January next, the war office will possess 1,001,188 breech loading rifles. Last November, the numbers ready for issue were 213,927 infantry rifles according to the Carl system, 704,489 infantry rifles according to the Kruk system, and 31,791 cavalry rifles of the same system; total, 950,207. The number of metallic cartridges ready for issue last Nov. was 213,801,000.