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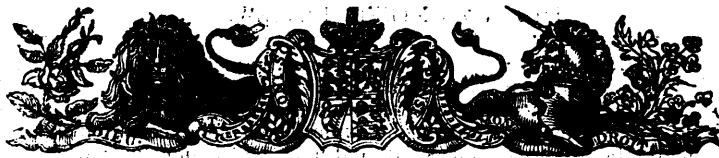
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The Volunteer Review

AND MILITARY AND NAVAL GAZETTE.

A Journal Devoted to the Interests of the Military and Naval Forces of the Dominion of Canada

VOL. VI.

OTTAWA, (CANADA,) MONDAY, AUGUST 19, 1872.

No. 34.

NEWS OF THE WEEK.

The British House of Commons was prorogued on the 10th inst. A very interesting debate occurred on the conduct of Mr. Justice Keogh in denouncing the action of the Roman Catholic Archbishop of Tuam and the clergy of his diocese for their action in the Galway election case; the Government approved of the course taken by the Judge and were sustained by a large majority.

It is contrary to the spirit of constitutional Government (to say nothing of Christianity) to allow clerical interference in elections, and it must be degrading to the order to see a clergyman figure as a rowdy at an election booth. The Roman Catholic priesthood have an undoubted right as the best educated men of their flocks to advise their people politically if they choose to do so, but that can be done decently in social intercourse without giving scandal.

It is rumoured that the Pope has instructed Cardinal Cullen to remonstrate with the British Government and protest against the (supposed) intention attributed to them of prosecuting the Archbishop and his clergy for undue interference with the election.

The whole of this matter will add another chapter to History and the development of true Constitutional Government.

The Queen left Windsor for Balmoral on the 14th, and H. R. H. the Prince of Wales formally opened the Portland Breakwater on the 10th.

There appears to be some likelihood of disturbance in Ireland, additional troops have been sent to Belfast and other points; the trouble is expected to arise out of a celebration of the anniversary of Catholic emancipation.

LONDON, 17th.—Further advices from Belfast confirm the serious nature of the rioting there on Thursday. There were several collisions between the mobs of Protestants and Catholic processions, during which a large number of persons received injuries of a more or less serious nature. The entire city was in an uproar of excitement and the disturbances were only quelled by the most active exertions of the police. Many of the rioters were arrested.

LATER—Despatches just received from Belfast, states that the riots have broken out afresh, and that severe fighting is now going on. A barrack of the police and several houses have been wrecked by the mob.

The *Daily News* discredited the *Standard's* report that the meeting of the Emperors of Germany, Russia and Austria at Berlin is for the purpose of settling the pending question in European national relations.

A Jesuit establishment at Issenheim in Alsace has been closed by order of the German Government.

An Edict of the Spanish Government provides for the abolition of slavery in the dominions of that country.

Nothing new has transpired respecting the Board of Arbitration at Geneva; the English lawyers were sent for to give the necessary explanations relative to the claims of the confederate cruisers, if requisite.

A project for the formation of a tunnel under the Straits of Gibraltar has been presented to the Spanish Minister of Agriculture. It is intended to run from Algeiras to Ceuta.

A French inventor recently made a public trial of boots designed to aid one to walk on the water. Nothing ever floated more beautifully than those boots did, but the trifling circumstance that they floated wrong side up nearly caused the inventor's death.

The news from the United States this week is simply local—refers to failures in the oil trade, the usual averages of three to five murders per diem in New York, and many deaths by sun stroke.

An attempted revolution in Peru ended in the death of the President and his assassin; the people elected a new President.

Advices from Magdalen Islands report mackerel scarce but codfish plenty. Very few United States vessels have arrived there to engage in the fishery.

Peace at last reigns in Cuba; Cabral has disbanded his brigands and is gone to take service with the Haytiens.

According to careful estimates, which are deemed reliable, one-third of the wood and timber existing in California twenty-two years ago has been consumed.

The Mikado of Japan is making a tour of his dominions as well as of its shrines; he is about to change its official religion, if its cultus can be called by that name,—he has assumed European costume, much to the wonder of his people, and takes care to be attended by a large naval and military force. The Koreans are reported to have set his authority at defiance, and we may be prepared to hear of some warm work between those parties. He has for a long time been Suzerain of Corea and with a newly organized force at his command will have a wish to test its value.

The elections in the Dominion are not yet concluded; with the exception of Quebec there have been no riots or undue excitement.

The Tilt Cove copper mines of Newfoundland has been sold for £150,000 sterling. The mineral wealth of British North America is enormous.

The new tariff on Canadian lumber in the United States has had the effect of raising its value over \$2 per thousand feet, board measure. It is evident that those people pay the duty imposed on foreign or other material, and we have no cause to complain.

Appearances are in favor of an abundant harvest, and all interests in the Dominion seem to be in a prosperous state.

A Fort Garry despatch to the *Globe* dated August, 8th says that: Adjt.-General Ross and staff started for British Columbia the day previous, overland. The ravages of grass hoppers this year will be restricted to gardens, and to a few late crops. There are hopeful indications of their departure before the egg-depositing season. Harvesting operations are going on vigorously, the crops are amazingly large. Election matters were quiet.

Work on the great tunnel, under the Detroit River is progressing rapidly, notwithstanding the fears that were for some time entertained as to the practicability of the gigantic undertaking. On the West side the workmen are out over nine hundred feet from shore, working through stiff blue clay, and finding little stone. On the Canada side work is pushed out over three hundred feet. When such rapid progress has been made within the comparatively short time since the actual work of excavation was commenced, we may look forward with some confidence to seeing the tunnel opened for traffic before the close of 1873.

THE SERVICE SMALL-ARMS OF GERMANY AND FRANCE.

The following extracts from General Haizon's volume, "The School and the Army in Germany and France," has a present value, which is enhanced by the fact that the criticisms are those of an accomplished soldier from observations made under circumstances the most favorable for practical results. It should not be forgotten that Germany has been since the war considering various systems with the view of re-arming, while her stock of needle-guns is undergoing modifications. France is understood to be as yet too financially weak to essay the cost of an entirely new arm.

SMALL ARMS.

The appearance of the needle-gun is not much in its favor. It resembles the Belgian musket used so freely by us at the beginning of war, and for which we soon learned to feel great contempt. It is generally stocked with light colored wood, with brass rings, guards and butt pieces. The main features which give it value are the breech loading mechanism and the arrangement for firing the front end of the cartridge, so as to prevent the blowing out a portion of the powder before ignition.

The first needle gun was invented by an Englishman, in 1831; but no government could be induced to use it, and the principle was never made available till 1849, when Prussia adopted the present weapon. The barrel has four rifling grooves, has one twist to a length and a quarter, a calibre of fifty-eight and a half one-hundredth inches, and an adjusting breech sight for 200, 400, and 600, 800, and 1,000 yards. The metal of the gun seems too light for the bullet, and I have no doubt that the calibre will be reduced and the barrel thickened. The breech loading apparatus consists of a hollow cylinder or shell, working freely in another outer shell, to which the barrel is attached. By rotating the inner one out of a notch through about sixty degrees, by means of a knob two and a half inches long, it can be slid back like a door-bolt to admit the cartridge, and, if desired, taken out altogether. Within this inner shell is a solid cylinder of iron half an inch thick, which slides easily backward and forward. Attached to its front end is a needle, the size and half the length of a knitting needle. Coiled about this cylinder is a spiral spring, which is brought to the rear by a small knob. The spring, on being released by drawing the trigger, carries the bolt, or cylinder, and needle forward with sufficient force to pierce through the powder of the cartridge, striking the point against the fulminate situated in the rear of a little sabot that separates the bullet from the charge, the natural tension or recoil of the spring at once withdrawing the needle from the chamber. The cartridge has a paper case, and the ball is seven-eighths of an inch in length, of an elongated egg shape, the butt end toward the front. It is separated from the powder by a papier-mache sabot or cup, three-quarters of an inch in length, in which the bullet rests, and in the rear end of which is the little capsule, or hardened drop of fulminate. Against this is the powder, and the paper case at the rear end is drawn or puckered together, leaving in the center a small opening not large enough for the escape of the powder, but into which the needle plunges, and passes through the powder against the sabot in front. The knob, as with the chassepot, is used as a corporal's carry or support, to sustain the gun. The arm is capable of about the same

rapidity of firing as our own breech-loader and in the hands of a perfectly-trained soldier is a very effective weapon. As the needle is within the explosion, it soon corrodes, or burns out, and must be frequently replaced.

The close working upon each other of such extended surfaces of bright metal as we find in the rotating shell and sliding cylinder, making more care necessary to keep the piece in order than volunteers will give. In fact, out of a large number standing idle in officers' quarters and adjutants' offices that have been shown to me to explain their action, not one has proved serviceable, and only those taken direct from the hand of the soldier have I ever seen work freely. Such an arm at Shiloh during the rainy, dirty 9th and 10th of April, 1862, would have proved our ruin.

The chassepot is considered a very much superior arm, and resembles both the now altered Springfield and Enfield rifle. The barrel is three inches shorter than that of the needle gun, which is three feet in length and the breech loading apparatus is three inches shorter also—making a perceptible difference in the length of the piece. The chassepot has a calibre of only forty-two one hundredths inches, and weighs but eight and a half pounds, while the needle-gun weighs ten pounds. It is usually stocked in walnut and its whole mechanical make-up is superior to that of the needle gun. The breech sight can be adjusted to a range 400 yards greater than that of the needle-gun; and as the calibre is less, with a proportionally stronger barrel, a larger charge can be used, and greater range secured. This arm is in many respects similar to the needle-gun. It is fired by a needle pin, which strikes a percussion cap situated in the rear of the cartridge, and the force is communicated by an ordinary steel spring.

It has also an arrangement of hollow cylinders in the loading apparatus, with bright, closely-fitting surfaces which easily become unserviceable from rust. The cartridge has a paper case, and a light covering of linen about the bullet, to keep it firmly in place. The powder comes against the bullet, and back of the powder is a common percussion cap, with its open end to the rear which is covered by a gutta-percha flap, and held in place by two papier-mache washers fitting over it. The paper case is gathered down closely on the cap. When fired, the pin of the lock plunges through the flap of gutta-percha against the fulminate in the cap, the impact of the blow being taken up by the papier-mache washers resting against the powder. The bullet is a leaden bolt three-fourths of an inch long, with a plain face in the rear and a blunt point in front. The chassepot has a short ring of gutta-percha just in rear of the cylinder to which the needle is attached, that expands from the blast when the piece is fired, and completely shuts off the escape of gas. The Prussians were about to make the same improvement in their own arms when the war began.

The powder used by the French is of a dull brown color, very dirty to the touch, and without glaze; while the Prussian is jet black, with glazed grains, and admits of handling without soiling the fingers.

I am free to give my impression of these weapons, and I do not consider them comparable to our altered Springfield, Remington, Spencer, or a half-dozen other arms used in our country. It is very doubtful whether, in the hands of troops imperfectly disciplined, either the needle-gun or the chassepot could be kept in a serviceable condition.

The history of the Chassepot and Remington in France is thus given in Norton's forthcoming volume. The "ring" influences which imposed the former arm upon the nation have been already recounted in our pages.

Previously to the adoption of the chassepot by the French Government, in August 1860, initial trials of a satisfactory character having been made with the Remington system, a sufficient number of arms were ordered to be made in the United States, to admit of such exhaustive tests as could warrant a determination of the matter. The unavoidable delay, however, in the delivery of the arms, necessitated the decision of the Government in favor of the Chassepot, a conclusion probably likewise affected by the existing difficulty in the production of suitable metallic ammunition. A distinguished French officer of ordnance, in a little work criticizing the defaults of the national armament, published about the beginning of the Franco-Prussian War, observes of this circumstance: "This last arm known too late to the Emperor, tested at Barritz and at Compiogne, balanced for an instant the fortune of the Chassepot; but the latter backed by influential partisanship, was, after all the victor." In a foot note the writer then refers to the success of the Remington in the Vienna trials. A characteristic anecdote was first at this time current, for the truth of which I cannot vouch: "Very well prince," said the Emperor one day to M. de Metternich, "what is going on in Austria?" "Your Majesty," replied the minister, "we are trying the Remington!" "The Remington, pardon me, what is that." Inquiry having thus been suggested, it was discovered that this arm had been for some months at the artillery bureau, but that no one had told the Emperor.

So far as the general preference of the French Government has been manifested, with the single exception above noted, it has been strongly in favor of the Remington system. Its repeated endorsement by the ordnance officers, in view of a German armament, has been already stated. About the same time a committee of English, Belgian and French officers, proposing to raise a fund to equip the troops of the Papal States, consulted the French Government, which again strongly recommended the arm. To the application of a Chinese Commission, the same favorable report was made.

In 1868, the viceroyalty of Egypt requested the French Minister of War to select a board of experts from his command to aid the Egyptian General in Chief who had been sent to Europe to determine upon an arm. This Commission was organized under the direction of Colonel Messier, an accomplished officer of infantry, and prosecuted its investigation of the merits of various inventions for more than six months, in the presence of the Egyptian envoy, General Ratib Pasha. The Remington was the arm finally selected from a large list of competitors, conspicuous among which were the chassepot, the Martini Henry, and the Peabody. The Viceroy there upon visiting Europe in person, efforts were made on the part of several parties interested in the competition, to have the trial resumed, but the Egyptian ruler concluded to defer to the action of the commission and the opinion of his son. On the 50th of June 1869, a contract was signed in England for 60,000 Remington rifles which were delivered during the succeeding twelve months. The construction of this complement was superintended in the United States by Colonel Mime. This distinguished officer, occupying a responsible position upon the Egyptian

military staff, has repeatedly communicated to Messrs. E. Remington & Sons the general satisfaction with which the system is regarded by the rank and file of the Viceroy's Army.

It has been observed, from the foregoing relation of the facts regarding the rearmament of several powers that have applied to France for advice, that the sentiment of the professional authorities of that nation has been invariably favorable to the Remington. The adoption of the chassepot in 1866 was the incident of an apparently imperative exigency, and the choice was actually made out of no competition at all, there being but two other entries, one of which was an improvised modification of the successful arm. In any subsequent trial, the results have been highly favorable to the American breech loader; the late one, conducted just before the late war, concluding in a recommendation of its adoption, for the mounted force of the French army. The names of Nessler and Minie are too well known to necessitate any suggestion of the value attaching to their endorsement of the system. There may be added, however, to these names of practical and thorough military scientists the more conspicuous one of a French marshal.

At the Imperial Exposition of 1867, the United States and several European countries were represented by large contributions of war material, comprising not only siege and field ordnance and general munitions, but the latest types of small-arms. The sentiment of the Commissioners controlling the Industrial Palace was adverse to any consideration of this feature of the exhibition; and it has been suggested on account of the paucity of the French contribution, "the fruits of peaceful civilization," it was designed that the exhibition should remain true to its object. Founded upon progress in peace, it was not thought proper to extend a friendly hand to engines of destruction. Against this rather narrow construction of the purposes of the gathering of the whole world's resources, the Governments represented protested with such force of argument, urging the cost incurred by inventors and manufacturers in the preparation of models, as well as the fallacious inspiration of the international jury, that the Emperor decided to form a High Commission, under the presidency of Field Marshal Canrobert, and composed of gen'l officers, of different nations, to whom was assigned the duty of examining the army material sent to the Exposition.

Thus was constituted a sort of international jury, on the pattern of the Jury of the Exposition.

The war contribution thus recognized as a legitimate feature, was divided into twenty-one classes, the first class including small-arms under the title *armes portatives*. The collection under this class was very comprehensive, England having sent amongst other inventions the Mifford carbine, the new Whitworth rifle, and the Martini Henri, Austria the Wernli, Belgium the Albini, and the United States, the Joslyn, Peabody, Spencer, Wesson, and Remington. The report of the commission, a large volume of 650 pages, presents a most thorough study of the progress of destructive invention. Its determination of the relative merits of the small arms entered, was in favor of the Remington.

"This arm very remarkable for its accuracy at long ranges, its strength, and the almost unalterable working of its parts, enjoys like the preceding (another American system) and perhaps to a much greater de-

gree, general favor. The action of the extractor is sure and efficacious, it may be fired twelve times per minute."

As a material evidence of the official endorsement, the European representative of this arm received for the Messrs. Remington, from the hands of the Marhal, the silver medal of the Exposition, the single trophy awarded to the first class *armes portatives*.

DEATH OF MAJOR CAMPBELL.—We are sorry to hear that Major Campbell, of Rouville, has died from an attack of paralysis. Dr. W. G. Campbell was called to attend him yesterday, but without effect. The late Major Campbell was a native of Glasgow, and an officer of Hussars. He was for some time Military Secretary to Lord Sydenham, and married a lady of the ancient and honored Canadian family of Duchesnay. Since that time he has lived at the Manor House at St. Hilaire. He was for a time member of Parliament for Rouville. He was also a director of the Grand Trunk Railway and the Montreal Bank. In all capacities he enjoyed the respect of the whole country.—*Montreal Herald*.

At a meeting of a London mission recently held in one of the poorer sub-districts of the English capital, the costermongers living in the neighborhood, presented the Earl of Shaftesbury with a gold pencil case, a magnificent bouquet, and a large photograph of a group of stall keepers. "His Lordship in a humorous speech," says the *London Times*, thanked the costermongers, and said he would keep their presents as long as the Radicals allowed him to keep any property at all.

CORRESPONDENCE.

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

(FROM AN OCCASIONAL CORRESPONDENT.)

MILITIA MATTERS IN HALIFAX.

The interest taken in the approaching elections has not interfered with Militia business. The 1st and 2nd Brigade of Halifax Garrison Artillery have daily a battery at practice at one of the forts in the harbour.

Colonel Laurie gives a close superintendence to this very important portion of the training, and occasionally brings with him some Royal Artillery officer, who by close professional questioning sharpens up the wit, and polishes up the knowledge of our Canadian gunners.

It is, however, to be regretted that a suitable battery is not maintained for the practice of these Brigades. The 32-pounder smooth bores are pretty well played out; 18-ton guns are rather new and heavy to handle for our men, besides which, the ammunition is expensive and scarce.

The Annual Rifle Target practice is also in full swing, nearly every day, one or more companies of the City Brigade go to the

Balford Ranges to fire their 40 rounds. Lt. Col. Sawyer the former inspecting officer in this district is appointed the Musketry Instructor, so that the regulations may be strictly carried out; and a major of each corps attend at all practices, as a further guarantee of fair play.

According to the Regulations issued no man will be paid as an effective who has not gone through his target practice, and if an artillery man his great gun practice as well; and further attended the eight obligatory Brigade parades. This is keeping the force up to the mark, but we mean business down here, and intend to be second to none. Colonel Ross told us last year that he had seen no better work in the Dominion and as long as we can bring a good Brigade together for constant work, and thus supplement the regular Halifax garrison with a strong force of trained men at a moment's notice. We feel that our work is fully better done than if we went off for a 16 days picnic, for fully as much efficiency is attained, whilst employees and employed are satisfied, and a much better class of men retained in the service.

The infantry and field artillery have now had three brigade field days, in one of which the two artillery brigades also took part, and on one occasion they formed a division, working with a brigade of regular troops, and won encomiums from the Lieut. General. Colonel Laurie keeps them very close at work, and after a Brigade field day this week, takes advantage of a full moon to hold two evening brigade parades next week, but whilst he insists on the "full pound of flesh" in the shape of drill; he tries to make it as convenient as possible for the officers and men, and is as fully as much a volunteer at heart as the most enthusiastic of those under him. This is the sort of staff we want, and not laced gentlemen who look to the pay and position as the chief points, and at the duty as a matter to be disposed of as quickly as possible.

Our country battalions are mostly trying the camp, and altho' we hear that one battalion will be disbanded for not coming into camp when ordered, the rest of the force responded well to the call. In June and July Colonel Laurie was in camp near Truro along with the Militia of the Eastern counties, and they got on very well although it was entirely new to them. In September, the same officer goes into camp with the western Brigade, and, as it is understood that he will also have some county artillery encamped at the Halifax Batteries at the same time, he appears to have his hands pretty full. Our Provincial Rifle meeting comes off on the 27th ult., when we hope to have our Wimbledon men back, again and shall be glad to see any good shots from the Upper Provinces. We will endeavor to send you our scores for comparison with yours,

The following account of the movements of the Adjutant General is taken from the *Manitoba Trade Review* of the 3rd inst.

"Colonel Robertson Ross, Adjutant General of Manitoba for the Dominion arrived here by the Dawson route on Wednesday July 31st and on Thursday afternoon inspected the force in camp. The parade was formed and the men marched to the ground selected on the prairie opposite the camp, headed by their excellent band, and shortly after 3 o'clock, received Colonel Ross with a general salute. Open columns of companies was then formed and each man thoroughly inspected both in arms and accoutrements. They were then formed into line and put through the manual exercise by Major Irvine after which close column was formed and they marched past at the shoulder and the trail in quick time, and concluded the review exercise by going past at the double. It would be useless to particularize any company, for everything was well done. Col. Ross then put through a few movements in skirmishing drill, and at the termination of this addressed them in a short speech. He said that it would be his duty to report at headquarters that he had found the battalion in a good and efficient state. That their camp was a model one, and better for its size than any he had hitherto visited, in point of cleanliness, order and arrangement. He then reminded them of the necessity of discipline and obedience to orders, and that they were not to suppose that although far away from home, their conduct was not watched, but that every dereliction of duty would be noticed, and exhorted them to continue to pursue that good line of conduct which has hitherto characterized them, and impressed on them the necessity of strict soberness. He called their attention to the flag under which they served, and reminded them that whilst clothed in Her Majesty's uniform, they were not to take cognizance of any political party whatever, but in all cases to strictly obey the orders of their officers. He stated it was his intention, after inspecting the detachment, to proceed over land to British Columbia, and that probably he would want an escort, how large he could not say, but he would inform Major Irvine, who would recommend the men who were to accompany him as such. He then called for three cheers for Her Majesty, which were given and joined in by the spectators with a will.

Amongst the visitors present were His Excellency Governor Archibald and guests, Dr. Shultz and ladies, and several others, both residents and recent arrivals.

In the evening Col. Ross, Major Irvine and Mr. Ross, left by the "Selkirk" for Pembina, to inspect the detachment stationed there; after his return he proceeds to the Lower fort for the same purpose.

On Wednesday next the troops in camp are to have some games, boat races and other amusements, at which Col. Ross will be present. It would be well if our townspeople would show by the numbers present at these games, that they are interested in the welfare of the gallant fellows. It is much to be regretted that the militia of Manitoba are not in a more thorough state of organization, so that they could be inspected by the Adjutant Gen. Major Kennedy's battery of artillery are prevented from being inspected by the absence of all the members who are busy cutting hay and could not be conveniently mustered.—*Manitoba Trade Review*,

RECENT EXPERIMENTS AT SHOEBOURNE.

(From the Engineer.)

Such a programme of experiments as that carried out at Shoeburyness on Thursday, June 20th deserves special notice, as fixing what may be called landmarks of progress in the various branches of artillery. The experiment of the day was the first trial of the 35 ton gun—the "Woolwich Infant" against armor, a matter of such importance that it deserves to be dealt with alone, consequently our readers will find that we have devoted a separate article to it exclusively, in preference to allowing it to rank in the array of heterogeneous trials which made up the happy family like programme of the day. We must not, however imply that the other trials that were made did not deal with matters of importance, but rather that each particular test was not of any importance, because it was only the repetition of some well established result, and therefore could not be spoken of as an experiment.

The first trial consisted in the firing of the 9 inch Woolwich gun on the Moncrieff carriage. This was only the repetition of a previous experiment. There was, however a new feature in the details of the system of laying the gun, namely, the marking on a disc, low down on the carriage, of the elevation given to the piece with reference to the horizontal plane, by the use of which the laying of a gun by a man under cover at the bottom of the pit is facilitated. The carriage in all its parts acted well, although by no means better than on the previous occasions.

The second performance of the day was namely, the trial of Mr. Quick's torpedoes, was certainly in every sense an experiment. We have heard it said that a New York detective masters a ruffian who suddenly presents a loaded pistol at his head, by simply standing in an apparently passive attitude, with his hand in his coat pocket, while in that hand he quietly points a small pistol towards his adversary, and at length shoots him unawares from inside his own pocket, the ball passing through both of their clothes. Mr. Quick appears to contemplate a somewhat similar "artful dodge." He proposes to furnish a man of war with a tube closed with valves fixed in the vessel's side, about 8 feet below the water line, from which a locomotive or rocket torpedo suddenly emerges, passing under water into the unarmored vitals of an adversary. Thursday was the first occasion on which his design was tried on large scale. A 10-inch gun was laid on the beach at about five degrees elevation, at a spot where it would be covered by about 4 feet deep of water at high tide. The bore was closed at the muzzle by a disc of glass fixed in a wood washer tightly sealed round the edge, while an electric wire led through the vent of the gun to a small igniting charge in the centre of the base of the torpedo. The torpedo itself was a cylinder something over 5 feet long, with a sharp pointed head, and immediately behind it a hollow space intended to be filled with gun cotton. The after part of the body contained four rockets, which were in communication with the igniting charge, and whose gas escaped on ignition through spiral vents designed to give rotation to the torpedo and keep its axis steady while projecting it through the water. On this occasion the gun cotton bursting charge was dispensed with, the object being to ascertain what range and direction might be obtained.

On firing, the torpedo burst open close to the muzzle of the gun, two rockets rising in the air, one of which descended almost immediately, while the other flew high over the heads of the spectators. The conditions governing a rocket's motion under water are even more complicated than in air; the pressure of the gas in every case, of course increases with the depth of water above the rocket. In fact to obtain the full development of force without risk of bursting the case, a certain given depth is required. Success could hardly be expected to follow a preliminary trial on a large scale. Even supposing such an engine to be desirable, Mr. Quick's torpedo has hardly reached the stage of development desirable for a public trial; the same forces which cause the ricochet of shot in water, or, in fact, the bounds of a stone thrown by hand to skim in "ducks and drakes," would always give a submarine rocket, if it moved with a high velocity, a tendency to rise like Venus out of the sea.

At about a quarter to twelve o'clock the 10-inch Woolwich gun fired common shell. This practice would have been more interesting had the piece been mounted on Capt. Scott's carriage; and this would probably have been the case but for a comparatively trifling accident which had occurred to prevent it. Very good shell practice was next made from four 64-pounder Palliser guns, being 8 inch converted smooth bores.

The morning's programme was concluded by the firing of Hale's war rockets and Boxer's life-saving rockets with lines. Our readers probably are aware that the use of a life saving rocket is to carry a light line over a stranded wreck by which a double rope and whip may be passed to the crew, and eventually a hawser to be made fast to the mast, on which runs a slung or "breach buoy," affording men the means of passing safe to shore, in cases where a lifeboat could not save them. The attempt has been made lately at Shoeburyness to get rid of one of these successive operations by firing two rockets together, and making them carry the whip and double line at once, instead of the preliminary light line. The two rockets thus fastened together are, in fact, a copy of Denhot's twin rockets, on a more powerful scale, and are, unfortunately subject to the same liabilities. Should the two rockets ignite and start together, they may do well, but should either one ignite before the other, or from any cause commence to act much more strongly, the whole is deflected and may fly indefinitely wide of its proper direction. This danger arises only at the moment of ignition, for if the rockets get away for any considerable number of yards, the pull of the heavy line behind them is a great safeguard against detection. On this occasion, however, probably the ignition—which was effected by raw quick match strands—was not simultaneous as the rockets parted into the sea about thirty yards from the firing point. In a shipwreck, time is a great object, but time is generally best secured by making the first communication to the vessel as easy as possible; in fact the saving of the crew is generally rapidly effected after any kind of line is once thrown clear over the ship. Hence it seems doubtful if this method of using the rockets is likely to be so successful as the use of the lighter one.

After luncheon some firing at ship's sides took place. Two targets had been constructed—one representing an ordinary iron one, and another an ordinary wood ship's side—both without plating of any kind. The

trial was in continuation of a similar practice commenced on the previous day, the result having been that common shells broke up in passing through one half inch iron plate, thus bursting in a manner without any fuse. Such a result however would have to be repeated and confirmed before it could be accepted generally. On this occasion Pettman's general service fuzes were used, and a good spread of splinters was obtained on rows of 9 feet wood targets, fixed eight yards in rear of the ship's side. The 35 ton gun, firing at number 33 strengthened targets—which we notice elsewhere—then took place, and was followed by mere firing of the character of practice. First, a capital running target—drawn by horses at the end of a sufficient long rope to insure their safety—was moved rapidly backwards and forwards across the range, and was fired at by 10 inch and 9 inch muzzle loading guns, and also a 40 pounder breech loading Arm strong. The target appeared to escape injury altogether; but the result was not to be wondered at, for it was small and moving at a smart trot, while only blind projectiles could be fired consistently, with the safety of the horses. Some blind shells went very close to the target, which had they been able to act as shrapnel, might have produced great effect. The closing experiment was some competitive firing between the following guns. The service 16 pounder and 9 pounder guns, firing shrapnel shells and time fuzes, and the Prussian breech loading—field—gun, firing common shell and percussion fuzes. This trial was not a very important one. It exhibited the comparative effects of the Prussian field piece, as used during the late war, against our field guns now existing in the service. The inefficiency of common shell, as compared with shrapnel or segment, was, it is true, known to our officers before the German War—having, in fact been very strikingly demonstrated at the Dartmoor experiments in the previous year, but it is now also well known to the Germans and other powers whose artillery in future wars would hardly fire common shell at troops. On the whole, the programme may be said to have been remarkably well carried out. Very few failures occurred, and those in instances where they were of no importance. It is only to be regretted that, where so many subjects were taken up, it is difficult to do more in a report than touch on each one. The summing up of them can hardly fail to be thought satisfactory. Putting the wonderful armor experiment out of the question perhaps the most remarkable feature exhibited is the high state of perfection to which the handling of our heavy guns has been brought. The Moncrieff system has been applied with full success to the 9 inch, and is being improved continually. We may add—although they unfortunately fell out of the programme—that the 10 inch and other heavy guns are now worked with Captain Scott's carriage and gear, with great ease and rapidity.

GERMAN CORVETTES, JUST AFTER BATTLE.

The German War Steam Corvettes *Vineta* Commander Ratsch, and *Gazelle*, Commander Arnt, each carrying 18 guns and a crew of 350 men, arrived from Norfolk, Virginia, at about 10 o'clock this morning. Immediately after anchoring the former vessel, whose commander is the senior officer, exchanged the customary salutes with the citadel, and the flag ship. Commander Ratsch and suite afterwards called upon Admiral Fanshawe, and were received with the

usual honors. These two war vessels have been distinguishing themselves under the following circumstances in one of those revolutions which are always occurring in Hayti, the town of Miragoane was stormed and M. Dickmann, a German merchant, had to fly the place, and on his return found his house, in which he had left considerable property, had been sacked. He and another German were afterwards thrown into prison, and in consequence of the ill-treatment he received he had a dangerous illness. On his recovery he proceeded to Berlin, and in consequence of the statement laid before the North German Government, the North German war steamers *Vineta* and *Gazelle*, were ordered to proceed from Havana to Port-au Prince. They arrived at the latter place on the 11th June, and intimated to the Haytian Government that unless the claims, amounting to £3,000 made by the Germans, were settled they would be enforced. This not being done, two Haytian war steamers were seized, when the money was paid. President Nissage has since issued a proclamation to the Haytian people stating that one of the claims was in reference to something that occurred at the Cape seven years ago, and the other claim had been adjusted by a Commission at a much less sum than that demanded, and would have been at once discharged if requested according to such assessment. He adds that under the pressure of the unprovoked and unexpected seizure of two vessels of war belonging to the Republic in the port of Port au Prince, by the Prussian men of war, the Government has been forced to pay down the sum of £3,000 claimed. As may be supposed, the proclamation expresses a strong protest against this arbitrary act. The *Vineta* and *Gazelle* will remain here a week, and will then visit Boston. Nearly all the officers speak English fluently.

The *Oesterreichische Militarische Zeitschrift* furnishes the annexed comparative table of the time required to load and fire one round of ball cartridge, from the military breech loaders hereunder specified, two seconds being allowed in each case for aiming:

Austrian Werndl	rifles—	1.2	seconds
Bavarian Werder	"	6	1.2
Russian Berdan	"	7	"
English Martini-Henri	"	7	"
Dutch Beaumont	"	7	"
Italian Vetterli	"	7	"
Swiss (Vetterli) repeating (magazine charged before hand.)	"	4	"
Fruhwith repeating rifle of the Austrian Gendarmerie (magazine charged before hand)	"	4	"
Swiss Vetterli and Fruhwith repeating rifles used as single fire rifles.	"	7	"

In the Fruhwith repeating rifle, twelve seconds are required for filling the magazine after every eight rounds.

The time has long since passed says the *Engineer*, when railways were considered luxuries adapted only for comparatively level tracts of country, or for districts through which it would pay to form a line with very moderate gradients by the execution of expensive tunnels, cuttings, or earthworks. Now a days engineers do not hesitate to lay out railways across mountainous districts in which, previously, even roads were unknown, and so long as a reasonable amount of traffic is likely to be forthcoming, capitalists are to be found who are willing to ad-

vance the means for making such lines substantial realities. In central and northern Europe, in Spain, in India and America, both north and south, mountain ranges have already been scaled by the iron road, and every day the locomotive is working its way through regions of cloudland at elevations unthought of thirty years ago. Thus, in Peru, the Cordilleras are crossed by a railway at an elevation of 12,200 feet, while the summit level on the Lima and Oroya line, now in progress, will be still higher, namely 15,000 feet above sea level.

NICARAGUA SHIP CANAL.

Early last Spring a party of engineers was organized by the Government to make surveys of a canal route from the Pacific to the Atlantic through Nicaragua. The Government of that country had appealed to the United States for this purpose, as it lacked means and man for the work, and the interests of commerce induced the United States to comply with the request for aid. They started for Key West by the steamship *City of Houston*, on March 10, and arrived on March 23, having encountered severe gales. They set sail on the U.S. gunboat *Kansas*, for Graytown, Nicaragua, where they arrived on April 4, Commander Hatfield of the *Kansas* took command, and the party pushed on as rapidly as possible, and on reaching Virgin Bay began operations. This route rather than the Isthmus line was favoured, because there is no body of water on the Isthmus sufficient to feed a canal, and the entire ridge of rock in some cases 600 feet in height, would have to be cut down to the ocean level; while Lake Nicaragua, which is 100 by 40 miles in extent, and the highest level of the route will furnish an ample supply of water. Rivers too, will feed the few more elevated parts of the canal. The space between the Lake and the Pacific, about 17 miles in width, was the only ground surveyed. Four routes were laid out. The Lake is 128 feet above the level of the Pacific and 134 above that of the Atlantic, a difference ascribed to the peculiar tidal currents on the Atlantic side. The highest point of the line surveyed between the lake and the Pacific is 46 feet above the level of the lake. The river San Juan will feed this part of the canal. Records of tidal variations were kept at several points, which will be the basis of a better knowledge of that subject in those seas. The temperature varied from 78 deg. to 87 deg. in the shade, and rose in the sun to 103 deg. On the whole the climate was delightful.

One day Dr. Whately was walking with a young officer of artillery who was allied to him in blood, when the latter proposed the following riddle, 'What is the difference between a donkey and an archbishop?' Whately gave it up, and received the following reply, 'the one carries his cross behind, and the other before,' referring to the marks of the cross on the back of the domestic ass and on the apron of an archbishop. 'Very good, indeed,' laughed Whately. 'And now can you tell the difference between a donkey and a captain of artillery?' 'No, indeed, I cannot,' replied the officer. 'There is none whatever,' rejoined the archbishop.

REMITTANCES Received on Subscription to THE VOLUNTEER REVIEW up to Saturday, the 17th inst:—

EXETER, Ont.—Capt. James N. Howard, \$1.
FRANKVILLE.—Capt. Alfred Lauder, \$2.
RONDEAU.—Capt. Conrad Rowe, \$2.
ST. HILAIRE, N.B.—Capt. Maximo LeBel, \$2.

CONTENTS OF No. 33, VOL. VI.

POETRY.—

The Chimes of Old England 190

EDITORIAL.—

Canadian Militia 392
The *Glatton* and *Holapur* 393
The *Glatton* 393
Reviews 394
The News of the Week 397

RIFLE MATCHES.—

The Ligar Rifle Matches—Manitoba 390
Hastings Rifle Association 391
Wimbledon—Canadian Victories 390
Canadians at Wimbledon 390

SELECTIONS.—

Krupp Guns 398
The Militia and Volunteers 390
Von Moltke's Plan for the War of 1870-'71 395
The Great Sea Tunnel 395
The *Glatton* 390
Bradlock's Fate 393S. M. PETTENGILL & Co., 87 Park Row
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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, AUGUST 19, 1872.

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

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

ONE of the most important questions which has agitated the public mind in Great Britain is that of the Coal supply, on which her very existence as a manufacturing power depends. Royal Commissions have been organized to investigate the probable extent of mineral fuel in Great Britain, and notwithstanding a somewhat favorable Report the excitement consequent on the agitation of the question of limitation of supply has been by no means allayed.

To complicate matters more the strikes of the Colliers and Ironworkers have culminated, in the words of a contemporary,—“In

consequence of those "strikes" the iron-master in the district of Wolverhampton, England, "is paying to-day 100 per cent. more for his coal than he was paying last August and September." But the iron master has to contend not only with strikes in the coal trade, but in his own; and the result is, that pig iron, which sold at \$20 per ton, now commands \$45. There is nothing that contributes to the production of iron, whether material or labour of any kind, which is not largely increased in cost, so much so that the *Scottish Mail*, of last month, says.—“A comparison of prices with quotations of eighteen months ago, shows that in this short period the value of iron has increased from 50 to 80, and in some instances to 100 per cent. There is every reason to warrant the belief that prices are not yet so high as to threaten a break in the market by causing an appreciable falling off in the demand.”

Without waiting to analyze the effect on the development of the Belgian, French, Prussian and Russian manufactures of iron, or the impulse given to that of the United States, the bearing of this rise in prices in Great Britain on our own interests cannot but be very momentous and important.

It is evident that the investment of capital in those industries in Great Britain has been over-done, and that a portion of it must be withdrawn to be invested elsewhere. As the Dominion of Canada possesses in the Provinces of Nova Scotia, New Brunswick, the North West Territories and British Columbia immense and practically inexhaustible deposits of coal, and in all the Provinces (including Quebec and Ontario) valuable ores of iron, including all varieties of the mineral from magnetic ore, yielding 75 per cent of smelted iron, to the cheaply mined argillaceous ore yielding 35 per cent.; British capital which cannot find profitable investment at home in the iron trade should be induced to seek it here.

This change of prices will increase the cost of constructing the *Pacific Railway*, but it has also rendered it more than ever a necessity, because it will bring the magnetic iron ore of Ontario, the hematites of Lake Superior, the argillaceous ores of the North West, and the Saskatchewan coal fields together.

One great disadvantage of our democratic, monarchical government is the impossibility of executive action for the good of the people, capital in the hands of individuals is a monopoly, and the development of the national resources of a country is effected thereby at the expense of the working class.

In Russia these matters are better understood, the mines of the Oural Mountains and Siberia are worked by the Government with convict labour in part, and for the benefit of the State. The superior quality of the article produced is well known, and it will bid fair to replace Great Britain in the world's economy in the production of that necessary article.

If our Government could aid the development of iron manufacture, either by bonus or otherwise, they would be doing the State a service. The Saskatchewan is navigable for 900 miles, a series of broken water communication for 420 miles connects it with the Lake Superior mineral region—the problem to be solved is whether the iron is to be brought to the coal or vice versa or both to be carried to the point where the broken and interrupted navigation meets to be manufactured.

Whatever may be necessarily decided in this case will be the result of some deliberation, but there need be none about giving direct and speedy encouragement to the manufacture of iron in Nova Scotia and New Brunswick, a liberal bonus, freedom from fiscal arrangements for a given period, and such other encouragements as may be necessary to establish the trade on a large scale.

It will be a grievous mistake if we allow this opportunity to pass without taking advantage of it, and the Provincial Legislatures should offer to pay the cost of the necessary buildings and plant to induce bona fide English *Iron-masters* to invest capital in the manufacture of iron in Canada.

“The opinion gains ground in France, as well as elsewhere, that powerful gunboats will in future form one of the most important branches of the marine, and Admiral Pothau is engaged in organization of special corps of workmen, founders, fitters, and engineers trained in the building, fitting, and refitting of gunboats for river and other service, but especially the former, where in future the employment of such boats should, it is said, be general. The maritime prefects of Brest, Cherbourg, Rochefort, and Toulon, have received instructions to furnish all possible information on the subject, and this fact proves pretty clearly that, although stress is laid on gunboats for river service, the new organization is not to be confined to them alone.”

The above extract from an exchange, furnishes a pretty fair indication of what the cruising vessels of the future Navy will consist—Gunboats—light handy vessels heavily armed, swift under steam and canvas, with small draught of water and good spars.

A squadron of properly found vessels of the class indicated would be able to go anywhere despite amour-plated monitors or torpedoes.

The people of the United States, the inventors of the first named nondescript, (for they are neither ships nor floating batteries) appear to have found out their defects and quietly allowed the system to pass, out of their service.

With a thoroughly defenceless coast line of vast extent it would seem that the whole attention of their naval administration is directed to perfecting a system of torpedo boats.

A Lieutenant BUCKNILL of the Royal Engineers has been enlightening the world on this subject. The *United States Army and Navy Journal* thus discourses of his pamphlet:—

"Lieutenant Bucknill of the British Royal Engineers, after a visit of six weeks to the United States, has returned to England to write a pamphlet on the torpedo, in which he gives us credit for much greater advancement in the study and practical introduction of that instrument of defence than the English have so far shown. To use his own words, he found that in the United States "three special torpedo vessels were commenced, whose speed, it is hoped, will attain seven or eight knots per hour; that ten powerful steam-tugs were fitted with telescopic outrigger torpedoes, to be worked from the interior; that the monitors, about thirty in all, were fitted with boom torpedoes; that every vessel, whether corvette, frigate, or gunboat, in the United States Navy carried a number of outrigger and towing torpedoes, to be worked from the vessel itself; that the officers of the Navy were being thoroughly instructed, in classes of twenty at a time, in the art of practical torpedoing, the course of instruction lasting several months"; and "that many of the most experienced officers in the United States Navy believe that the torpedo is to be the principal weapon of future naval armaments." While the Italian, the Russian, the German, and other navies are like ourselves furnished with a weapon which tends to bring the strength of the weak maritime powers up to that of the stronger ones, the British seagoing fleet is not furnished with a single torpedo, and its officers have therefore no opportunity of acquiring skill in torpedo tactics, or of studying the manoeuvres which may prove most suitable to the successful application of this novel weapon to offensive warfare at sea."

The possibility of employing such an agent of warfare has been often questioned, and we quite agree with the following opinion from an English paper of high standing:—

"Experienced iron shipbuilders," says *Naval Science*, "though, perhaps, not with much experience as to torpedoes, have expressed the opinion that as the explosive power of the torpedo may be increased without limit, and as the stroke from even a very moderate charge is proved to be so destructive, any attempt to make an ironclad ship "torpedo proof" must be abortive; greatly more so, in fact, than to make her "shot-proof"—to a constantly increasing power of gun, because to the increase of the latter some limit is set by the nature of materials and otherwise, whereas there is little or no limit to the power of the torpedo. And those of this opinion come at once to the conclusion that it is not by further loading the already overburdened ironclad ship with a still stronger hull, or an armor-plated one, that we should proceed; but by contriving means, whether carried by the ship or otherwise, to push aside or away to a safe distance from the hull the torpedo which is encountered, permitting it then to explode or not; or by some means for fishing them out, or otherwise disabling them or their igniting apparatus, by "dredging" or "sweeping" from a distance. All that the more intelligent proposers of any of these methods can say is, that so far as they may be effectual, they oblige the opponent to employ a more powerful and expensive torpedo." The discussions on this subject which have from time to time appeared in the technical and military journals (in England at least), and that raised at the late meeting of the Institution of Naval Architects on Torpedo Papers read before it, evinced such loose or imperfect notions as to the nature of explosion generally, and the laws which govern those subaqueous torpedoes, that real progress either in more effective structural

resistance to, or in keeping off to the minor limit of safe distance marine torpedoes, is not to be expected until the fundamental conditions of their explosive stroke become better understood generally. Here, as in every other branch of engineering, if we are to make much or safe progress, we must begin by distinctly grasping the conditions of our problem as presented to us by the properties of the substances and the play of the forces concerned."

But that there may remain no doubt about the value of the proposed system, we give a letter of Lieut. Bucknill to the *Broad Arrow* in which his views are given with considerable emphasis:—

"Sir,—In each number of the *Broad Arrow*, for the first two weeks in June, you have taken prominent notice of a pamphlet on "Torpedoes versus Heavy Artillery." As the pamphlet was published for private circulation only, but few of your readers can refer to it after reading your criticisms. I think it possible to point out a few things in which you have apparently misunderstood me.

"To commence with your first leader. In no part of the pamphlet are "many comparatively light guns advocated versus few heavy artillery," nor is it considered "that the 7 inch gun would be more suitable for defending torpedoes from a hostile *Sullan* or *Glatton* than a heavier gun which could pierce the sides of those ships"; but it was distinctly stated as an opinion that submarine mines, whether electrical or mechanical, can protect themselves against the larger vessels, but that smaller craft sent in to grapple for or otherwise destroy the mines or render them harmless, should be kept at bay by other means, in order to save the mines; and that comparatively light guns, properly placed, could perform this duty. It was shown how it would be possible to protect such guns from the heavy artillery of a hostile fleet by arranging the mines in a line with the forts, and by placing huge traverses and blindages to protect the guns which sweep them from the fire of an enemy outside the line of defence obtained by the mines. This plan is in direct opposition to that generally advocated, in which the mines are spread out in front of the forts with intention to assist in their defence. But if the mines thus placed be also within such distance that heavy artillery in the forts can sweep the mined waters, then heavy artillery of the same power on board the vessels just outside the mines can also reach and in time silence the fire of the forts. Now, nine out of ten forts are more pregnable to capture from a land than from a sea attack. If then greater attention be devoted to making the forts as impregnable as possible to capture from assault, and the guns therein, as well as the electrician's operating room, secure from the fire of an enemy, we at one and the same time guard the mines from attack by small craft, and hold the key of the position by a stronghold which can only be taken after a tedious siege. It is not considered probable that commanders of costly ironclads will run the risk of destruction by taking their vessels into waters which are even only supposed to be mined, before the latter are thoroughly searched or the electrician's headquarters captured. Should commanders be so rash, the mines protect themselves.

"The application of submarine mines to "wide spaces and open roadsteads" may be possible, but in the pamphlet you criticise it is evidently opined that the narrowest portions of a navigable channel are the proper places to defend, the mines being placed as close as possible to their supports. You

state that "a number of mines separated by a wide expanse from the firing stations could only be managed by single cables; they could only be exploded by contact." This is not so; mines can be fired singly by contact, although several are grouped on one cable, the explosion in no way destroying the subsequent efficiency of the remainder; and mines can be fired by cross bearings at considerable distances with much accuracy—in which case, however, single wires are necessary.

"Again, the difficulties you mention with regard to strong currents and great rise and fall of tide have been overcome. In the pamphlet I recommended that important harbours should be permanently defended by mines; but the whole point is lost by filling the cases, as you propose, with sand or coal-dust. It would be as tedious to raise and load such mines as to lay down new ones. An electrical submarine mine, with quantity of fuzo incapable of being accidentally ignited by currents induced in the cables during thunderstorms, is fully as safe as a loaded cannon without the friction tube inserted. If it occupies ten days or so to load and lay our guns, should we not keep them ready loaded, but the friction-tubes under lock and key?"

"Allow me now to add a few remarks on your second leader, June 8th, in which the naval questions raised in the pamphlet are more especially criticised. Torpedoes proper, as applied to cruising vessels, differ from submarine mines and from torpedoes as applied to small craft for coast and harbour defence, in this: that the former are utterly untried and unknown, except experimentally, whereas the latter have been practically proved as most successful in actual warfare. All arguments, therefore, on offensive torpedo warfare must to a great extent be shrouded in theory, all opinions hypothetical. Your statement that the torpedo vessels proposed in the pamphlet would be "easily sinkable" and "fragile," is an opinion, as was my statement that she would be extremely difficult to sink; and I cannot pass without remark that you emphasised the thin skin above the water-line, but omitted to mention the double and collular skin below it, as well as the proposed armour for protecting the engines. As regards automatic torpedoes, discharged from the side of a vessel at a foe, I did not think it necessary to state that they would not be used over waters "traversed alike by friend and foe." In Captain Colomb's late paper on the attack and defence of fleets, it is conclusively demonstrated that the attack by means of "a narrow front with small depth" was superior to any other. The arguments he uses apply equally for automatic torpedoes as for guns, and the waters on either side of each vessel are not then "traversed alike by friend and foe." Should the attack be made in single line abreast, or by groups in line, your remarks are quite called for. There is another weapon you hardly mentioned in your leader, and yet it is the very torpedo of all others which the Americans seem to place most reliance upon. I mean the telescopic outrigger torpedo. As I said in my pamphlet, they have already fitted it to several of their own tugs, and I have reason to suppose that it is intended to fit such a contrivance to the beak of the new torpedo vessels they are now building; but in your paper for June 15, is found, "We do not hear that anything is yet decided as to the manufacture of Harvey torpedoes, and yet these are the only weapons of the kind that can be used with safety or effect in offensive operations at sea." Take the word of one who has lately seen the telescopic apparatus which is used in the American Navy

for outrigging torpedoes from the bow of vessels below the water-line, and which is worked entirely from the interior of the vessel, that it is a very efficient weapon for use "in offensive operations at sea," and can be applied with ease to the projecting beaks of the vessels now existing in the British Navy.

"Yours faithfully,

"J. T. B., R.E."

The first point of importance made in the letter is the reluctance of the commanders of costly ironclads to venture into a position mined or supposed to be—allowing that the physical difficulties presented by rise and fall of tides, currents, gales, &c., were overcome and that the mines were in position—is there anything to hinder them from being dredged or trawled out by gunboats of light draft properly constructed?

The effective range of shot and shell may be set down at three miles, ironclads could protect gunboats from the direct fire of shore batteries at that distance, and if the mines were once fired they could not be recharged till the action was over. Therefore the question of harbour defence is just where it was before the gallant lieutenant saw the United States.

The value of torpedoes against a fleet in action is not altered by the Yankee telescopic outriggers—there can be no doubt about the ingenuity of the mechanism—but naval actions are not fought at thirty paces, very few of the torpedo boats would exist after the first fire, and the survivors would be in no hurry to close.

The energy imparted to the 600 lb. shot of the *Hotspur* was that of 6,000 tons at two hundred yards, with a charge of 85 lbs. of pebble powder, a very easy calculation will show that the same charge in a torpedo at a depth of ten feet will have to lift three thousand five hundred tons of water before it strikes a blow near the surface, at the same time the energy of force is expending through a widely and rapidly increasing area.

If the defence of England is to be limited to torpedoes the Kaiser might fight the "battle of Dorking" whenever he could catch enough of British steam vessels in German ports to enable him to throw his first divisions ashore at Deal.

The City of Quebec is the principal seaport of Canada proper, the larger proportion of sea-going vessels visit it, and as usual in all similar cases its population is largely composed of the classes which gain a living by the sea, ship-carpenters, seamen, pilots, stevedores, dock laborers, crimps, &c., and as a general rule, not the most orderly at elections.

During the late elections a series of riots of a very grave character indeed ending with loss of three lives and serious bodily injury to a number of people, and disgraceful in every ordinary degree to the principal authorities as well as the local Government have occurred.

It should be a matter for the consideration of the Privy Council of the Dominion

whether the general Government of Canada should not take the conservation of the peace of our great cities out of the hands of the municipal authorities and the local government, for the simple reason that the police as now constituted are a mere set of partizan tools, and the evil will be growing worse.

The organization of a proper police force, under the control entirely of the General Government of the Dominion and directed by a stipendiary magistrate in each city, so organised that no member or any one connected with the force should be permitted to hold property in the locality in which they served, is a necessity of the hour.

Such occurrences are deplorable in every respect, but they are aggravated by the comments of at least one journal in the Province in which the outrages are perpetrated—the *Northern Journal*, true to its creed improves the occasion to show us how vastly superior is the system that has produced Tweed and Conolly, Jim Fisk and Stokes, that has deluged the streets of New York with the blood of countless victims of lawlessness and mis-government, and appalled the world by unheard of atrocities.

That there may be no mistake about the matter, the following from the organ of the Montreal Republicans, will at once apprise the people of Canada of the truthfulness of the Political Gospel of which it is the herald.

"This is the usual style of elections at Quebec; riot and murder. And riot and violence are not confined to Quebec. We remember something of the kind at Montreal. There is something of the same trouble in the old country. We are happy to say, however, that at each election these scenes are becoming less frequent.

"In the United States, outside of the Slave States, they ceased years ago. At the intensely exciting elections in 1864, in the midst of civil war, from one end of the Union to the other there were neither mobs nor violence. It will be the same next November. If there be any exception it will be caused by the partizans of the white aristocracy in the late Slave States.

"And yet we Canadians talk as if we were orderly and the Americans were riotous. We have heard this stuff so long that we have come to believe it.

We are safe in stating that there are more revolvers carried in Canada than in the States bordering upon Canada, in proportion to the population.

The people of New England are the most quiet, orderly and law-abiding people in the world, and they are the most democratic. Revolvers are carried only in the aristocratic States and by the aristocrats. Disorder in America is confined to the South and South west. Even New York, filled as it is with the poor of Europe, is as orderly as Montreal. Boston far more orderly. It would be well for us if we would take the trouble to find out the truth about these things, instead of persisting in refusing to see, and charging every one who tells the truth with Americanism. The truth is that as far as pertains to peace and order and obedience to the law we are behind our neighbors, and we ought to know it.

"Witness the Sorel trip on Dominion Day. Then read the story of the immense crowds at the Boston Jubilee. These crowds were composed of the common people, that is to say, they were not confined to, or chiefly made up of the better educated classes.

"There is nothing like facts, if we can get at them."

The rowdies of the Bowery, the thieves and murderers of New York are the aristocrats alone that can carry revolvers according to the *Northern Journal*, that truthful sheet conveniently forgets that there is a law in existence in Canada making it a penal offence to carry concealed weapons, will it tell its readers whether any such enactment exists in the States.

As the political creed taught by the *Northern Journal* is founded on a falsehood it is not to be expected that its advocates or exponents will stick closely to truth, and in the article before us there are full as many falsehoods as there are lines—Montreal should be congratulated on the success of such a publication.

A PAMPHLET of a dozen pages has been issued under the title of "Suggestions relative to the Dominion of Canada," from the Government Emigration Officer in London, containing a great deal of useful information particularly valuable to intending settlers, and also some of a very objectionable character.

The Emigration Agents of this country at home or abroad, should recollect that they are not ambassadors or sent abroad either to suggest or debate questions of International policy, and in this pamphlet there is a suggestion which might be productive of much present mischief to the interests of Canada, especially when it is considered that the "Manchester School" of politicians are in the ascendancy at home, and their favorite doctrine would be the annexation of British America to the United States, the following paragraph from the pamphlet in question show what an efficient weapon the ignorance of the writer places in their hands.

"The guarantee of peace afforded by the Treaty of Washington is cited as a reason why an uninterrupted career of prosperity to the Dominion may be looked for, and the consideration is urged that guarantees in favor of a common highway for the commerce of both nations from West to East are also assured. It is suggested that surely an arrangement might be made between Great Britain and the United States, by which the lakes and rivers which traverse the territory of the Dominion and the United States might be made more perfectly navigable by a joint guarantee, of interest on the capital necessary to make them so, which a very light toll on the navigation would amply secure and recoup; and for the furtherance of civilization and the promotion of peace and good will a convention might be made similar to that of the Suez Canal, which would render these lakes, rivers, and canals neutral for the commerce of all nations in time of war."

The man who coolly proposes to deliver Canada bound hand and foot into the power of the United States, as this pamphlet does, has certainly betrayed a great want of knowledge; and in zeal entirely overlooked his duty.

The safety and national existence of this country depends on keeping the St. Lawrence and our canals entirely free from the political conditions surrounding the Suez Canal; it is our line of defence; and the means whereby this country could not only successfully resist aggression from her powerful neighbour, but also be of the most value to Great Britain. It is in fact a guarantee for the peace of this continent, and our neighbors over the lines fully understand the fact.

It would be well if writers whose peculiar forte lies in the direction of a universal peace-at any-price would confine themselves to subjects they did understand, and not meddle with those beyond their comprehension.

It would be well if our Minister of Agriculture and Emigration would give his subordinate agents instructions to avoid politics, and moreover, submit every pamphlet emanating from them before it was published.

For good and sufficient reasons there can be no partnership in the navigation of the lakes, rivers and canals bordering different nationalities on this continent; it would be about as sensible to neutralize the High Seas, and as far as this country is concerned, far more profitable, there is an old proverb to which we would invite the pamphleteer's attention, it is *ne sutor ultra crepidam*.

A very pleasant incident occurred at Rio Janeiro on the occasion of Her Majesty Queen Victoria's birthday. The only English national vessel in the harbor was a store-ship stationed there with supplies, but no armament. This vessel as is the custom on such occasions, was trimmed from stem to stern with flags, and as a matter of course was saluted by the guns from the Brazilian forts. The commander of the United States steam-frigate *Lancaster* being in the harbor, and seeing the dilemma, hoisted the English flag and returned the salute, an act of courtesy fully appreciated by the English residents of the city.

The above paragraph from the United States *Army and Navy Journal* is one of those pleasing and gratifying incidents of good feeling which tends more to establish a national *entente cordiale* than all the shams of diplomatic courtesy. Our contemporary should have published the name of the commander of the United States frigate that the English people might do him honor.

"Blood is thicker than water," is an old and true proverb, and we are only sorry our gallant cousins withdrew themselves from the shadow of the Old Red Cross.

"In an able and interesting article on the subject of the Imperial Russian navy, by Mr. E. J. Reed, C. B. in the *Naval Science*, he says: "The concern felt by the Emperor himself in his navy is sufficiently attested by the fact that every new experiment of importance in naval matters is certain to be attentively witnessed, even in its early stages, by his Imperial Majesty—a thing which cannot be truthfully said, probably, in the case of any other monarch. Although a military officer, and devoted by birth to the widest interests of the Empire, the Cesarewitch, the heir to the throne, takes a great personal interest in the navy, and is well acquainted with every change which affects it. His brother, the Grand Duke Alexis, like our Prince Alfred, Duke of Edinburgh, is a practical naval officer, commanding his own frigate, and mastering for himself the mysteries, as they may be called—of the modern warship. His Imperial Highness, the Grand Duke Constantine, who has long possessed a world-wide reputation as a naval officer, is so devoted to naval interests that he retains the Lord High Admiraltyship of the fleet in addition to the Presidency of the Council of the Empire—the latter being, probably, the weightiest administrative office in Europe. Whatever may be the merits of the system which has given the supreme control of the British Navy into the hands, first of Mr. Childers, and then of Mr. Goschen, and eminent as may have been the qualities which marked them out to Mr. Gladstone's eye as to the most capable persons in all Great Britain for performing the highest duties of the Lord High Admiraltyship of our navy, it must nevertheless be conceded that the Russian system, which gives the charge of the navy into the hands of a man who adds to a very remarkable keenness and power of mind, business habits of the first order, large naval experience, and both naval and social rank of the first degree—it must be conceded we say, that the system which gives the control of a navy into such hands has also striking advantages. We cannot, at any rate, doubt that the construction of the remarkable ships which Russia is building is due in no small degree to the close interest in the navy taken by the Imperial family, and more especially, no doubt, to that member of it who presides over the fleet."

Mr. Childers, we believe was a trader in a general way, Mr. Goschen a manufacturer, and Mr. Cardwell an attorney; qualifications under the Whig Radical regime sufficient to place the two first in the position of Lord High Admiral of England for which their previous training in political economy eminently qualified them to look after the dock yard, spun yarn and candles, and the third as Field Marshal, Commanding-in-Chief the Army of England, as it wanted the fostering care of a lawyer in a small way.

There is nothing new under the sun, their great prototypes, the canting roundheads, appointed a committee of *lady tryers* to decide on the qualification of cavalry officers at the first formation of the Parliamentary Army in the great Rebellion, England's Army and Navy just now gives conclusive evidence of the administrative abilities of *old women* carefully mixed up with sharp attorney practice.

It is very evident that the system which

places power in the hands of individuals, liable to such fearful abuse is wrong, the safety of the country, to say nothing of its honor or interest is not safe for an hour in their hands.

The difference between the Emperor of Russia and Mr. Gladstone, and of the systems administered by both is just this, the first is a despot in name, an able administrator and a practical statesman, seeking the honor and profit of his whole people, not his own or family aggrandisement. The latter is nominally the Minister to a free people, in reality alternately the despot and tool of a faction and a mob bound to administer the affairs of the country, not for its honor or the interests of its people, but for the profit of the faction by whose aid he climbed into power, without practical knowledge, a mere metaphysical dreamer, and a good professor of rhetoric.

Russia has, undoubtedly, the best of the systems practically.

REVIEWS.

The *Edinburgh Review* for July, has been received from the Publishers, LEONARD SCOTT & Co., 140, Fulton Street, New York, it contains:

- Complete Works of Bishop Berkeley.
- The Stuarts at St. Germain's.
- Help's Thoughts upon Government.
- The Pope and the Italian Humanists.
- The Southern Slave States since the War.
- Memoirs of the Marquis of Pombal.
- Researches on Life and Disease.
- Reformers in Japan.
- The Bennet judgment.

As the list of articles shows this number is an exceptionally good one.

It seems strange to hear of the importation of coal into England, yet this is what has been arrived at, owing to the increase of prices. The Manchester, Sheffield, and Lincolnshire Railway Company have, says the *Manchester Guardian*, taken the practical step of drawing upon the Belgian coal-fields where they consider they can be more economically supplied than from our pits. Their coal bill for the last half year showed an increase of about £6,000. The Company's steamers are now occupied in carrying over cargoes of Belgian coal, and if the fuel proves good, the example will probably be followed by other boards. It will be interesting, says the *Pull Mall Gazette*, to watch the progress of this movement and of others which are now taking place in a like direction. While coal owners, coal merchants and colliers are quarrelling over a division of the profits gained by the late rise in prices, consumers are busy in devising means by which they may become less dependent on the disputants.

THERE IS NO DEATH.

BY LORD LYTON.

There is no death! The stars go down
To rise upon some fairer shore,
And bright in heaven's jeweled crown
They shine forever more.

There is no death! The dust we tread
Shall change beneath the summer showers
To golden grain or mellowed fruit,
Or rainbow taintd flowers.

The granite rocks disorganize,
And feed the hungry mosses they bear;
The forest leaves drink dai y life
From out the viewless air.

There is no death! The leaves may fall,
And flowers may fade and pass away
They only wait through wintry hours
The coming of May day.

There is no death! An angel form
Walks o'er the earth with silent tread,
And bears our best loved things away,
And then we call them "dead!"

He leaves our hearts all desolate;
He plucks our fairest, sweetest flowers,
Transplanted into beds they now
Adorn immortal bowers.

The birdlike voice, whose joy was tones,
May glad these scenes of woe and strife,
Sings now an everlasting song,
Around the tree of life.

Whether he sees a smile too bright
Or heart too pure for taint and vice,
He bears it to the world of light
To dwell in paradise.

Borne to that undying life,
They leave us but to come again;
With joy we welcomed them the same,
Except their sin and pain.

And over near us, though unseen,
Thou dear, immortal spirits tread;
For all the boundless universe
Is life—there is no death!

It is of the utmost importance that the people of Canada should be prepared to take advantage of all just criticism, whether relating to their Government, military organization, laws, or social customs, as it will enable errors to be corrected and mistakes rectified.

Acting on this principle we re-publish the following article from the United States Army and Navy Journal, premising that the letter has been written by a Canadian, all its incidents are exaggerated, most of its statements untrue, and malicious in all; our force is gradually acquiring discipline, it is not composed of professional soldiers, and the remarks of the critic, therefore, are without value.

The cry that the force only exists on paper has become a nuisance, it is like other popular delusions, the stock-in-trade of a few discontented spirits; and although their prophecies have repeatedly been proven false, they still continue the whine about the inevitable collapse of the system.

In the matter of equipment and clothing, the fault lies with the House of Commons, if money will be placed at the disposal of the Militia Department, all that can be rectified; in the matter of strategy and tactics we shall gradually acquire sufficient knowledge to please a critical eye, and in the meantime, it is evident, the writer feels we need not be ashamed of the Canadian Army.

"From a letter to the World we glean the following interesting particulars relative to

the militia of the Dominion. The number of volunteers or active militia in the Dominion is as follows:

Engineers.....	232
Field Artillery.....	40
Garrison Artillery.....	3,844
Cavalry.....	1,571
Infantry.....	85,571
Marines.....	174
Garrison in Manitoba.....	318
Attending military schools.....	479
Staff.....	34
Total.....	43,174

Of these men, last year 34,414 performed their annual drill 22,500 in camp for sixteen days, 5,200 in camp for eight days, and the remainder at their headquarters.

The camps of instruction have just been broken up, and as I visited several of them, both at Quebec and Ontario, a few remarks upon the subject may not be inappropriate. The infantry are generally young men, apparently in good health, and able to stand work. They are more soldierly looking than the average American regular; better "sized," too. On parade, however, many irregularities strike the eye of one accustomed to see regular troops. Unbrushed boots, missing buttons, and similar little things, display an absence of strict discipline and soldierly pride, and there is a proneness in the rank and file to follow with their eyes, if not with actual craning of necks, the passage of the reviewing officer and staff. They march well, but judge distances badly in wheeling into column of companies, one company frequently overlapping another, or having to dress several steps to make up its distance. Between officers and men the difference is not sufficiently marked, a fact too frequently resulting in a relaxed discipline and disorderly camp. The men do not know how to surrender their individuality, and obey orders like machines, but seem to halt, question, and discuss with themselves. The officers, as a general rule, are wholly ignorant of all things military, that are not in the books, and flurry about like children at a picnic. As a specimen of thoughtlessness, I saw one man parade his guard in great coats, with the mercury up in the nineties. The arms furnished are good, and in good order, and the shooting of the men is more than fair. Officers and men, however, are neglectful of practising in the art of judging distances—a very important matter in the open field, where one has not the range measured off and announced in advance. The uniforms, generally, are badly worn; in some instances men were without regulation trousers or shakos.

In the sham fight which I saw, the effect was more satisfactory to the general public than to the close critic. In throwing out skirmishers they advanced too rapidly; indeed in almost every advance the advancing forces got out of reach of their supports. The skirmishers distained notably such shelter that did not force itself into their eyes—small stumps, hillocks, and loose stones, any one of which would have covered a man, being ignored. The firing was too fast—it always is with new troops. Two grievous errors made themselves conspicuous at one camp, where one wing of a battalion, numbering 150 men, undertook to retreat from an untenable position, exposing its full flank to a battery of two guns and a force twice as strong as its own, and where a troop of thirty sabres, "without any visible means of support," as the indictments for vagrancy run, took a bridge in front of the enemy's centre, on which—setting direct defence out of the question—every opponent of the

attackers could have converged fire, making this bridge a position akin to that described by an Irish engineer as "perfectly impregnable, and untenable if taken."

The men generally are dissatisfied. Between the English and the French there is much ill-feeling, the result of national prejudices never yet overcome, and now intensified by the fact that the Minister of Militia is popularly supposed to have condoned, if not actually to have instigated, the Rebellion in Manitoba, in which the French exult as a victory over Protestant influence in the northwest. Further, the term for which the volunteer militia agreed to serve has now expired. They find that the glass has worn off with the general public, that employers no longer encourage their employees to volunteer, but stop their pay during their absence on duty or discharge them. Again, they complain that they are obliged to give their time and trouble while hundreds of their fellows are at home. Almost every officer says that a half or two-thirds of his men will not serve again, and that the balance must be resorted to to fill up the ranks. Here comes the trouble. The Government has the power to ballot, but dares not exercise it. To draw 20,000 or 30,000 men from the reserve, and compel all who were drawn to serve, would raise a howl from those able to afford substitutes, while to permit the engaging of substitutes is to fall out with the poor devils who can't afford to serve or to buy substitutes either. How they will get out of the mess remains to be seen. At any rate the active militia will be reduced at least 20,000 men.

The reserve militia of which so much is said is composed of the following classes:

1. Unmarried men or widowers without children.....	222,000
2. Same, thirty to forty five.....	33,500
3. Married or widowers with children eighteen to forty five.....	287,500
4. Men from forty five to sixty.....	151,000
Total.....	694,000

These men are "militia" merely in the sense that every citizen of the United States capable of bearing arms is a soldier. They undergo no drill, are unarmed, and are brigaded on paper. The only provision for an emergency has been in preparing some hundreds of mere schoolboys at "military schools" by taking diplomas after studying "war" from four to ten weeks to act as officers in the reserve militia in case of war."

The following extract is from Broad Arrow of 27th July, detailing the distribution of the prizes won at Wimbledon.

The reception of the Canadian Volunteers were quite as gratifying as their success to the people of this country, and it will, no doubt, please our readers to find that H. R. H. the PRINCE OF WALES, has retained vivid recollections of the loyal and warm reception he received from the Canadian people twelve years ago, which he did not fail to mention to Major WORSLEY, who has good reason to be proud of the service on which he has been engaged, and the success of which is due in a great measure to his able and prudent management.

We feel quite certain our militia authorities will not forget the service he has rendered, nor fail to show their appreciation of conduct calculated to reflect honor on the

military service of Canada and enhance its value in England.

The members of the detachment deserve the credit and approbation of their country, and every person connected with it should be entitled to a *brevet* accorded for this special service as well as the thanks of the Commander-in-Chief.

"In front of the Grand Stand was erected a tent before which was a raised and covered dais of crimson cloth. The principal prizes were ranged on a table right and left of the dais, the various international and other trophies having a prominent position, whilst the Elcho Challenge Shield of oxydised silver, of the value of £100 was placed on its stand immediately on the right of the elevation. In the tent were Earl Ducie and a number of ladies and gentlemen, including the Secretary of State for War and Mrs. Cardwell, the First Lord of the Admiralty and Mrs. Goschen, Lady Ducie, and a distinguished circle. A few minutes before four the Duke of Cambridge and staff arrived at the tent, and immediately afterwards the hoisting of the royal standard at the saluting base announced that the royal party had entered into the enclosure, and directly afterwards two open carriages with outriders in the royal liveries, and accompanied by an escort of the 9th Lancers, drove round the enclosure amidst the cheers of the populace to the tent facing the Grand Stand. There were also a number of distinguished persons in the Grand Stand, including members of the Burmese and Japanese Embassies and a number of foreign officers, and amongst them Lieutenant Col. Meder and a number of gentlemen in the service of the King of Holland, in the military uniform of the Netherlands army. Prior to the arrival of the royal party, the various prizes men, who were to have the honor of receiving their prizes at the hands of the Princess, were ranged in the order in which they were to march up for their prizes on the right of the dais; whilst in the rear the London Scottish, as the battalion to which the credit is attached of carrying off the Queen's prize, headed by its pipes formed a guard of honour; and on the left was also a guard of honour of Marine Artillery under the command of a naval officer. In a few minutes the Princess of Wales was handed on to the dais by the Duke of Cambridge amidst the loud cheering of the gentlemen and the waving of the handkerchiefs of the vast assemblage of ladies in the Grand Stand, the London Scottish pipers playing the National Anthem on their bagpipes. The Prince of Wales, who immediately followed, and was also warmly greeted, was attired in the uniform of the Civil Service, of which regiment he is honorary colonel, also Prince Arthur, wearing the uniform of the London Irish, of which corps he is also honorary colonel, and the royal party were shortly joined by His Serene Highness the Duke of Teck, who wore the uniform of the 1st Surrey Artillery, of which he is also honorary colonel. After a few observations from Earl Ducie, the president of the National Rifle Association, who, with the other members of the council and Captain Mildmay, the secretary, were in attendance, and the Duke of Cambridge, his royal highness undertook the duty of reading the prize-list, and explaining to the princess the nature of the various competitions, and the distribution at once commenced. There was little interest attached to the presentation till the well-known figure and face as well as stalwart frame of Mr. E. Ross, of the London Scottish, the first winner of the Queen's prize at

Wimbledon and other honours, stepped from the ranks and received his first prize of £20 won in the first stage of the Albert, and subsequently for his prize of £100 as first in the second stage of the same competition, and a third time to receive at the hands of the princess the Any Rifle Wimbledon Cup, which he had won with the excellent score of 56 out of a possible 60. Lieutenant Dodds, of the 5th Northumberland, who had won the Snider Wimbledon Cup, also came in for a fair share of applause. The next prize of importance presented for the best squad at volley firing was the Belgian Challenge Cup, which had been won for a second time by the 1st Leicestershire team. The team on presenting themselves to receive this elegant trophy, were loudly cheered. The enthusiasm, however, was still more exuberant when the Cambridge team, in the modest volunteer uniform of their university, stepped forward to receive that stupendous work of oriental art, the China Cup, of the value of £525. The young gentlemen composing the team did not attempt to carry this monster trophy, but it was pointed out and explained to the princess, who on acknowledging the salutes of the team again elicited loud applause.

The Burmese Cup, won by Mr. Hayes, of the London Rifle Brigade, with 19 out of a possible of 20, Sergeant Ferguson, of the 1st Inverness, who won the *Daily Telegraph* Cup with the highest possible score of 20, also elicited on their presentation great applause. Upon Sergeant Turnbull of the Canadian team, coming up to receive the first of the prizes given by the Secretary of State for War, he was loudly cheered, as was also Sergeant Croft, of the 34th Regiment, upon stepping up to the dais to receive the Army and Navy Challenge Cup of the value of £100. At this stage great interest was created when the youthful team representing Winchester College, in their quiet and unpretending knickerbocker suits of drab and black facings, paraded to the front to receive the Ashburton Challenge Shield of the value of £140, which they had won in the Public Schools match, with the capital score of 313 out of a possible score of 440; but the *furor* was increased as the little fellow, Private Cowan, of Cheltenham College, received at the princess's hands the Spencer Cup, connected with the same competition, which he had won with the famous score of 23 out of a possible 28. Whatever exhibition of feeling, however, had previously been exhibited by the assemblage, its enthusiasm increased to almost the highest pitch when the time came to distribute the Canadian prizes. The first was the beautiful specimen of the silversmiths' art—the Medallants of London Cup, of the value of £160, which went to the province of Quebec with the splendid score of 70 out of a possible score of 80 marks; again when Ensign Adam, of the 13th Canada, and Private Smith, of the 30th Canada, received the money prizes of £30 and £20; but the greater demonstration of approval was reserved for the Canadian team when they marched up in a body to receive the two magnificently parcel gilt and silver vases, designated as the "Rajah of Kolapore's Imperial Challenge Cup," and the National Rifle Association's prize of £100, which they have won against the crack teams of picked shots of the mother country, and which they will carry with them as a trophy to their homes on the other side of the Atlantic. The team was headed by Major Worsley, the captain of the team, who, having in the first instance, been congratulated by the Duke of Cambridge, was warmly shaken by the hand by

the Prince of Wales, who addressed him, and who, it was understood, begged him to convey to the people of the Dominion how pleased he was at the success which had attended the visit of their representatives to this country, and how deeply impressed he was with the kindness he experienced at their hands. Again was the enthusiasm of the assemblage excited when the modest looking Cambridge team made their appearance in front of the princess to receive the Chancellor's Challenge Cup, presented by the late Earl Derby and the Duke of Devonshire, as chancellors, for competition between the University Volunteers of Oxford and Cambridge. Colonel the Hon. C. H. Lindsay, who stood near in his uniform as commander of the St. George's Rifles, now headed the St. George Challenge Vase to the princess, and it was presented to the winner, together with the Gold Jewel and a purse containing twenty-five dragon sovereigns to Sergeant McMe, of the 3rd Lanark, who made for it the highest possible score of twenty; and subsequently the Dragon Cup to Lieutenant Eddison, of the 7th West York. Next came the English Twenty, headed by their veteran, Captain Field, of the Hon. Artillery Company, carrying with them that beautiful piece of art, the International Challenge Trophy, which they exhibited to the princess, who went through the form of presentation in the most graceful and dignified manner, amidst reiterated plaudits; and a similar ovation awaited Private Wyatt, of the 13th Salop, as the winner for England of that also beautiful work of art the International Irish Trophy. Now came the turn of the English Eight, who are the winners of that most magnificent trophy, the Elcho Challenge Shield, headed by their Captain, Mr. Wells, M.P. The trophy having been pointed out to the princess, she made the formal presentation, and as four of the most stalwart members of the team took the trophy on their shoulders, and marched past the dais with it they were loudly cheered. After the presentation of the Duke of Cambridge of £50 to Captain Pixley of the Victorias, and the Prince of Wales's prize of £100 to Sergeant Metcalf, of the 12th North York, the prizes were commenced to those present made in the first stage of the Queen's, and Private Cortis of the 1st Sussex, the silver medalist of the year was well applauded. The grand ovation, however, was reserved for the winner of the blue riband of the meeting, the Queen's Prize, Color-Sergeant Michie, of the London Scottish, who wins, in addition to the £250, the gold medal and gold badge of the London Rifle Association. The gallant sergeant in his costume of the London Scottish, stepped jauntily up to the dais, amid the cheering strains of "Highland Laddie" from the pipers of the regiment and the enthusiastic and general applause of the vast assembly."

During the five years preceding Confederation, the imports of the Port of Halifax amounted to \$1,178,482, or an average of \$8.57 per cent. During the five years of Confederation, our imports (including, as before, the imports from the neighboring provinces) amount to \$64,391,400; and the duty paid amounts to \$5,068,918, or an average of \$7.87 per cent. These figures demonstrate clearly that in a financial and commercial point of view Confederation has proved successful.

A NEW CANNON.

The "Woolwich Infant" is no longer a prodigy. The public has become familiar with its appearance and performances; and also with some ngly rumours about the effect on it of charges which were probably unduly and unfairly large. We have now nine or ten of those monsters. But a new gun is about to be produced—a gun of thirty six tons, which will be some three feet longer than the "Infant," and be otherwise greatly improved in shape. Any one who has seen a member of the Infant family must admit that, whatever may be their strength a more ugly, squat thick set race never existed; while on the other hand the proportions of the newly-designed cannon will be so slender and tapering as to be almost graceful in appearance. It will be calculated to stand a greater charge of powder, and be doubtless more true in aim at long distances than the 35 ton gun. The new gun is to be employed on land for harbour defence most probably in some of the new forts at Plymouth, while the use of the Woolwich Infant will be confined to the navy. Of these latter, it will be remembered, the iron-clad *Devastation* and *Thundered* are each to carry four, in armoured turrets, the guns being mounted in pairs side by side, two in each turret, so that their whole force may be brought to bear at one time, if necessary. In this way nearly a ton and a-half of metal—for the shot weigh 700lbs, each—will be discharged at once; a greater weight than was ever thrown in a broadside by the old first-class men-of-war carrying their 120 or 130 guns. And how much more effective the projectiles from these heavy rifled guns will be, it is easy to imagine. The reasons which have led to the construction of a still heavier gun are based no doubt, on the desire to employ more powder, and thus to expel the shot with greater velocity, and perhaps more certainty. As it is, the penetrative power of the present gun is equal to piercing an armour plate 14½ inches in thickness at 50 yards, while at the distance of 1000 yards or more the shot would go clean through the side of the *Hercules*, one of the stoniest ironclads afloat, which has solid iron walls 12 inches thick. These results are obtainable with 80 or 90 pounds of powder, and if this charge is increased in the "Woolwich Infant" to any great degree—say to 100 or 110 pounds—no corresponding energy is put forth, for much of the powder is then thrown out to the muzzle unburnt. By lengthening the gun therefore, and without enlarging the bore, it will of course be possible to burn more powder before the shot issues from the gun, and it is hoped a higher velocity and greater battering force will then be obtained; the full power of the weapon being, in fact, put into requisition. Instead of 90 pounds of powder, 110 may be employed, while the strain upon the inside, or core, of the gun will not be greater than before. Again, it is feared by many that the bore of the present 35 ton gun—twelve inches—is greater than is compatible with its perfect safety. It will be remembered that, in the first instance, its diameter was but 11.6 inches, but that afterwards the tube was bored out (and consequently weakened), in order to take a 12 inch projectile. No divided opinion, however, exists as to the capability of the new 36 ton gun to throw with safety such a projectile; and, therefore, while the weapon will not perform a heavier task than its predecessor, that task will be performed with more efficiency and safety. As the gun will not be employed afloat, there need be no restrictions as to length, and consequently all conditions requisite to its proper manufacture

can be complied with. It is to be built like the other upon the Frasersystem—that is to say, with a steel tube and wrought-iron jacket. The solid pillar of steel, which is bored out to form the tube, is a very costly affair and by itself is valued at £500. About 50 tons of wrought-iron will be employed for the outside jackets, or cylinders, to clasp round the steel tube, as much as 30 tons of metal being required for one part alone. These cylinders are made as the reader may know, by heating long bars of iron somewhat resembling railway iron, and coiling them when at a white heat round a huge reel, so as to form a spiral of glowing metal. This spiral is afterwards put into a reverberatory furnace, and then hammered or welded under a steam hammer until it forms a hollow cylinder, and these cylinders are then placed round the steel tube, thus forming the gun. The bar of iron for making the principal cylinder in the 30 ton gun will be upwards of 1200 feet in length, and the furnace in which it is placed, when twisted into a spiral of coil, is a roomy apartment in which twelve or fourteen people might dine comfortably. As a matter of course, forgings of this gigantic nature necessitate machinery of a most stupendous character, and arrangements are now being actively carried on at the Royal Arsenal at Woolwich for the erection of a 30 ton steam hammer, which, with a full jet of steam, will be capable of striking a-blow of several hundred tons.—*Daily News*.

ARMOUR OR NO ARMOUR.

Captain Edmund Wilson, R.N., has addressed a letter, under this title, to the First Lord of the Admiralty, in which he urges the importance of submitting his system of *inside armour* to a fair trial. He says, "Many officers are of opinion that armour of sufficient thickness to resist shot from a 12-ton gun cannot be carried with safety on the outside of a ship; and it therefore only becomes a dangerous incumbrance, from the innumerable splinters of iron, like so much langridge decimating the crew who stand behind it, when pierced by a shot. If, therefore, it is considered desirable to have no armour still our navy cannot consist of wooden ships, owing to that dangerous missile, the shell which experience warns us has set many on fire; neither can we have the commonly-bought iron ship, which, although free from the above disadvantage, would still labour under even a greater viz, that no gun's crew could do their duty, amidst the innumerable splinters caused by a shot striking iron plates. Those, therefore, who are advocates for no armour, must see the necessity for adopting the composite principle of ship-building, it is in fact, the only safe method as regards the damage a shot or shell might occasion on entering the side of a ship."

In the case of a turret-ship, the abandonment of armour outside would render it necessary to find some other means of defence for the toward part of the turret. This could be done by inside armour carried down to the orlop deck. Captain Wilson continues—

"There are many officers in favour of central batteries in preference to the turret. Now these central batteries can be heavily armoured, and the armour carried down to the orlop deck, as specified in my model submitted to the Admiralty in 1863—also in a model likewise submitted by me in 1858 having two circular batteries.

"There is another peculiar feature in inside armour, which is that as the plate required no planing or landing, they might be kept in store in all parts of the world, and

put in place without going into dock; so that should war suddenly break out, a fleet might be clothed in and incredibly short space of time; and when blockading an enemy's port, or proceeding to a distant station, some of the compartments might be filled with stores and coal."

Captain Wilson further expresses his opinion that what we require is:—

"Firstly, a very fast class of ships, heavily armed, on the composite principle, wholly unarmoured.

"Secondly, a fleet of central battery ships, on the composite system, combined with internal armour, a maximum rate of speed of eleven knots.

"Thirdly a class of turret ships to cooperate with the fleet.

"The unarmoured class would be eligible for the protection of our commerce, and to take their place with the fleet, as our frigates did in days of yore. The ship composing the fleet should be of similar dimensions and steam power, not exceeding three hundred feet in length, by sixty-four in breadth: this proportion would ensure good sailing qualities, and admit of the armour being placed six feet in-board, as well as the central battery with its sixteen twelve-ton guns. The turret class should be composed of sea going ships, and those for coast defence. A sea-going turret ship must have grate speed, so as to be able to harass the enemy's rear should they decline battle; and in a general action, the captain of a turret ship possessed of sound judgment and skill, would have it in his power to inflict severe punishment on the enemy, which might probably result in their surrender."

In conclusion, he observes that "we have at present no fleet of iron-clads that could well manœuvre together; some are too long others have their guns too near the water; most of them steer badly; none are shot-proof, and all had sea boats!" For these defects, however he does not think the authorities are blameworthy, as they could not know when the fleet was suddenly transformed, as we know now, what was necessary for efficiency.—*Broad Arrow*.

Heracles, who lived in the sixth century collected twenty-one jests under the general title of the Podants.

Among these ancient jests is the account of the man who for fear of drowning determined not to enter the water until he was master of the art of swimming; of the man who complained that his horse died just as he had taught it to live without food; of the philosopher who carried a stone about with him as a specimen of his house; of one who stood before a glass with his eyes shut, to see how he looked when he was asleep; of the man who bought a crow, to see whether it would live two hundred years; and of one who went into a boat on horseback, because he was in a hurry. Here we find the ever-new story of a man who, meeting a friend, asked whether it was he or his brother, who was buried; and the blundering excuse of the person who having attended to the request of a friend, said when he met him, 'I'm sorry I never received the letter which you wrote to me about the books.' The Rev. Mr. Hartley, of Philadelphia, must, we should imagine, have come fresh from the perusal of Heracles when he forwarded to M. Thiers last year one of the original bricks of Independence Hall in that city, 'with the earnest prayer that the legislators of beautiful France may derive from it such an inspiration as shall lead them to erect a republic whose dignity, justice, and purity shall be the admiration of our age, and which shall prove a model for other nations in securing the rights and liberties of their people.