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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. VIII.

OTTAWA, (CANADA,) TUESDAY, OCTOBER 27, 1874.

No. 43

NEWS OF THE WEEK.

Hon. Mr. Vail, the recently appointed Minister of Militia, was on the 22nd elected for Digby N. S., by the decisive majority of 300 votes.

The Earl of Dufferin was entertained at Delmonico's on Monday night the 19th inst. Conspicuous among the guests were Messrs. John Jacob Astor, A. T. Stewart, William Butler Duncan, August Belmont, Albert Rierdstaff, Major General Hancock, and Bishop Clark of Rhode Island.

Capt. Harry J. C. Italy, 2nd East Norfolk Militia, has been appointed extra aide de camp to his Excellency the Administrator of the Government, the appointment to date from the 12th inst.

Mr. Kirkpatrick, just returned from the Pacific Survey, has found a practicable route for the proposed road about seventy miles north of Lake Superior.

The steamship *Nova Scotian* has arrived at Quebec with three hundred and sixty six passengers, and general cargo for Quebec and Montreal.

The Brazilian Government declines to admit Canadian vessels permanently to the coasting trade of their country.

Three and a half million feet of lumber, valued at \$40,000, cleared from the Ottawa Custom House on the 20th.

An important case was decided at the Court of Assize in Ottawa, on Tuesday last. The suit was brought to settle the title of a lot on the By Estate, which was claimed by Mr. John Fitzsimmons, the property having been in the peaceful possession of this person for over twenty one years. After hearing the evidence in the case, the Court decided that John Fitzsimmons was the legal owner of the land. The property is valued as being worth \$50,000.

The Premier and Mrs. Mackenzie gave a dinner party on Tuesday evening, the 20th inst. Invitations were issued to the Commandant of the Forces, Major General Smyth, his aide de camp, Captain the Hon. Miles Stapleton, His Lordship Judge Wilson, Hon. D. Christie, Speaker of the Senate, Miss Grey, of Toronto, the Minister of Customs and Mrs. Burpee, the Postmaster General and Miss Macdonald, the Minister of Justice, the Minister of Agriculture, the Minister of Finance, the Minister of the Interior, the Receiver General, the Minister of Inland Revenue, the Secretary of State, the Deputy Adjutant General and Mrs. Powell, the Clerk of the House of Commons and Mrs. Patrick, the Premier's Secretary and Mrs. Buckingham.

Mr. R. S. M. Bouchette, ex Commissioner of Customs, was entertained to a farewell supper on Monday evening the 10th inst. at the residence of Mr. J. R. Audy, prior to his departure for Quebec. There were a great number of guests present, amongst whom were the following gentlemen. — Mon Messrs. Mackenzie, Burpee, Scott Fournier, Goffrin, Letellier de St. Just, Mr. J. M. Currier, M. P., Messrs W. A. Himsforth, Clerk of the Privy Council, R. Lemoine, Clerk of the Senate; G. W. Wicksteed, J. Johnson, Lieut. Colonel Joseph Aumond, H. V. Noel, D. S. Eastwood, Col Powell, Col. Chamberlin, Z. Wilson, and J. W. Peschy. Addresses were delivered by several gentlemen. The Hon. Mr. Burpee bestowed high and well merited compliments on Mr. Bouchette, for whose services as Deputy of his Department he expressed the highest regard. The evening was spent in the most pleasant and sociable manner, and, on parting, Mr. Bouchette was tendered the best wishes of all for his future happiness and welfare.

Intelligence has reached Quebec of the total loss on the Island of Anticosti of the ship *Shandon*, from Glasgow, with a general cargo for Quebec and Montreal. The captain and crew were saved.

An Associated Press despatch says. — It is stated that the British Charge d'Affairs at Washington, is awaiting a reply from the Home Government to a query by the American Government whether Labrador is to be considered a part of Newfoundland or Canada, with special reference to the importations of fish, as to whether that province is entitled to the benefits of the Washington Treaty.

A special to the London *Times* from India says Nana Sahib has been captured in Gwalior. He has been identified beyond a doubt by the Maharajah of Scind, and is now a prisoner in the Maharajah's Palace, and a political agent has taken his confession.

A terrible tornado passed over a large portion of the United Kingdom on the 21st, doing great damage to the crops, shipping, etc. Houses in many places were blown down, trees uprooted and telegraph poles prostrated. Owing to the general interruption of communication by telegraph, the full extent of damage cannot be ascertained. It is feared that serious loss of life has been occasioned by the tornado.

A despatch from Janeiro states that the rebels in Buenos Ayres have sustained a defeat and their commander has been taken prisoner. The Government offers a large reward for the capture of the rebel steamers. The *Morning Post* reports that Germany has definitely proposed to the powers the adoption of an international maritime code.

A special to the *Times* says Lunine prevails in the Russian provinces of Kherson and Bessarabia.

A Berlin despatch to the *Standard* says legal preliminaries in Count Von Arnim's case is almost completed. It is believed the Count will be released on bail in a few days.

Monsieur Montour, formerly private Chaplain of Napoleon III., died on the 21st. He has bequeathed 150,000 francs to the *Prince Imperial*, and the same amount to the Pope.

It is said that the Emperor granted an audience to Count Arnim Bertzberg. This signifies that a crisis has been arrived at in Von Arnim's affairs, and victory depends on whether Prince Bismark or Arnim's family possesses greater influence.

Mail advices from Mexico, state that Germany is intriguing to obtain a foothold on Mexican soil. A Colony of Germans are offering to loan money with conditions to obtain a colonial tract.

The trial of Von Arnim will begin early in December. Prince Bismark will be the principal witness for the prosecution.

A despatch from St. Petersburg, Oct. 24th, announces that a destructive fire was raging in Tiflis. The theatre and upwards of one hundred stores had been consumed when the telegram was sent.

The Republicans have captured an important strategical position at Cimita on the southern borders of the Province of Cuena. They intend to fortify the place and make it a basis of operations against Carlists in Cuena and Valencia.

The Turks in Montenegro continue their outrages on Christians. They have killed eight Montenegrins and some Serbian residents in the neighborhood of Radogozza, and burned a village. The Christians were compelled to flee to the mountains.

The London newspapers unite in demanding that exemplary vengeance be visited upon Nana Sahib.

The twin or double hull steamship *Castalia*, built to overcome the effects of the English Channel, and intended to ply between Dover and Calais, has made a trial trip from it to Calais. She proved to be a most comfortable boat neither rolling nor pitching.

The *Maggie* from Dundee for Ringaan was wrecked on the Hebrides during the late gale and twenty-four persons on board drowned.

The Representative Assembly proposed for Alsace and Lorraine will at first possess its deliberative character. Its functions will be to advise the Imperial Government on all subjects of local legislation and to examine the budget for Provinces.

THE NEW RED BOOK AND THE CHANGES IN DRILL.

In our last we very briefly noted a few of the changes in the new and reserved edition of the "Field Exercise." As we then stated, the alterations are not many, and most of them have been given out in orders during the past two or three years, and the greatest changes are in making the text of the new edition conform to the authorised amendments. There are, however, one or two amendments worthy of note besides those we mentioned last week. It is not our intention to produce a key to the changes as our space would hardly permit such a course, and already two able elucidators of Drill are in the field with keys and glossaries of the changes since the publication of the New Drill in 1870. We refer to our experienced friend, Captain Orr, of Airdrie, and Captain Multon, both well recognised as authorities on Drill. Their works are elaborately got up for the purpose of minute detail, which we can hardly undertake in the form and space of a leading article. The first change we may notice is that skirmishing is now to be practised occasionally by the sections of a company—a very useful and judicious course of training. We have already noticed that supports are to be practised in open files, with two paces interval; also a judicious change. Then we have on the same page (96) of both old and new books, considerable new detail as to skirmishing, but nothing very important except that the paragraph as to relieving skirmishers retiring is modified; the fighting line as we noted last week, never being relieved, unless when halted out of fire, and in case of over-fatigue or failure of ammunition. This is an approach to the German idea of using up the fighting line, the reserve being retained for the purpose of feeding that line as it is expended. Under breech-loading fire relief would be all but impracticable, and the greatest care is taken to make the fighting line take every possible advantage, of course, never moving from one sheltered position till a dash can be made to another.

In battalion evolutions it is enjoined that when noise or wind rendered the colonel's voice inaudible, the word of command must be repeated by the mounted officers, whose duties are also somewhat modified in various particulars in taking up points; while line formations are recommended to be frequently practised without foot-points, and in front forming into line at the halt on points at all are to be given (pp 102 to 126). In double column all words of command will now be given by the senior captain of the double company instead of as formerly by the captain on the left, except when otherwise directed. Double columns may now be formed from quarters column, and vice-versa, by the left companies making time and falling into their places, and considerable care has been taken with the formation of columns of double companies from line, both from the centre and on a flank. There are a few new words of command, such as in changing position:—"Change position quarter (or half) left, or right," and in forming line from echelon in an oblique position, "Line quarter (or half or three quarters) left or right on No. —." But what seems to us to be the most important alteration in the new mode of a battalion in line forming square. We must say, we always regard the plan adopted in 1870, as awkward and clumsy, especially after having participated in experimental drill years ago on much the same plan as now adopted. In place of all but the two centre

companies now going fours outwards, and wheeling on the flanks of the two centre companies and then turning to the rear, the companies which are to form the sides of the square go to the right about, the flank companies who have to form the rear face go fours inwards, on the word "quick march," the companies that are turned about, wheel inwards, and on the word "forward," form on the inner or centre company of their half battalions; when they get the word "halt front," they fix bayonets and the side faces, the flank companies move across in fours so as to form the rear faces, when they will get the word, "halt, rear, turn," the whole fixing bayonets as they come into squares. To reform line the movement is simply reversed, while column of double companies can be formed as exactly as if the square had been formed from double column, namely, by the side faces going right about and wheeling inwards, halting and fronting, and the rear faces stopping out their proper distances, halting and fronting. We regard this mode of forming squares from line much more to the purpose than the mode of 1870. At page 278, we have laid down new rules for half battalion double company formations, while in brigade drill there are a few changes which, however, do not effect the necessary routine drill either of company or battalion. In certain respects, it seems to us there is a return, in some particulars, to old methods. It would appear that the manual exercise at inspections will be performed with fixed bayonets, but we should not be surprised to see the rule modified for all troops armed with, or drilled after the method of the short rifle.

Really, after all, there is very little essentially new in the New Red Book. It is simply, in almost all respects, only a corrected edition of the old, but the difficulty of mastering details, so little marked, whatever be their importance, will not be the less annoying for a time, and the most difficult to master. The Commander-in-chief forbids any deviation from the New Red Book, and it is a pity that a new "Volunteer Regulations" is not forthcoming which would cancel all previous orders and be something like an accurate *code mecum* of Volunteers demands and duties.—*Volunteer News*.

THE BRAZILIAN IRONCLAD INDEPENDENCIA.

The unfortunate situation of this vessel gives interest to the following particulars:—"The *Independencia* is a ship 300ft. long 63ft. broad, and of slightly more than 5000 tons burthen. She therefore compares in size very closely with our own finest ironclads *Hercules* and *Sulton*. She is 10ft. broader than the ill-fated *Captain*, and in bulk, displacement, or total weight exceeds her by more than 2000 tons. She is of the turret type, and in many respects intermediate—especially as regards free free boards between the last named ship and Mr. Reed's *Monarch*, the height of her side above water being 11ft. at load draught, the *Captain's* having been (as intended) 8ft., and the *Monarch's* 14ft. Much of the armour upon her sides is no less than twelve inches thick, and that upon her turret is to be thicker. The turrets, which are already built and on board, but without armour, are to be armed with 35 ton guns of the Whitworth type. She is to be powerfully rigged and is to be propelled under steam by Penn engines of the largest class, driving a single screw. It follows from these particulars

that we have here the most powerful, although not the largest, rigged, sailing ironclad yet constructed for any Government. In preparing her designs the Brazilian officers who came over to this country to construct her had the assistance of J. E. Reed, M. P., in whose office her drawings and specifications were prepared. When the contract for building her was made, however, the Brazilian officers took into their own hands the responsibility of seeing her properly built and launched without the assistance of Mr. Reed or of an English staff of overseers. This circumstance is of great importance at the present moment, because it is quite unusual in the case of ships of so much importance building for foreign Governments. At the present moment, in the neighbouring establishment to that in which the *Independencia* lies, two fine ironclad frigates, each of about equal tonnage with her, are building (one recently launched) for the Imperial German Government, and although German overseers are present, Mr. Reed is in responsible charge of these ships, and has a trained staff of overseers always supervising the work. A little lower down the river, at the Thames Ironworks Company, two equally large ships, are building for the Turkish Government, and these again are under the care of English overseers, appointed in this case by our own Admiralty. In the case of the *Independencia*, this element of British skilled and independent supervision of the building and of the launch has been wanting, and we think it only fair to ourselves as a nation that this important fact should be clearly understood, as it makes a striking departure from usual practice.

"In the next place, it is to be observed that the launching arrangements of this ship were very unusual, no less than six sliding ways and cradles, three on each side of the keel, having been employed, whereas one only on each side is usual. It is difficult to see in the character and circumstances of the ship herself any necessity for so large a departure from the ordinary practice. It is quite true that the *Independencia* is a broad ship, but she is no broader, or broader only by a few inches, if at all, than the German ironclad *Kaiser*, one of the two frigates which we have already referred to, and which was launched recently with perfect success upon the usual two slides only. The second German frigate, of equal size and similar build, will be launched, we understand, within a month from the present date, and in the same manner, and, we trust, successfully. If there were features in the proportions, form, or construction of the Brazilian ship which rendered it desirable to reduce the pressure upon the launching ways, the most obvious course would have been to avoid placing much of the armour upon her until she was afloat; but, instead of this, it is easy to see that by far the larger part of the armour-casing of the ship proper was put upon her before the launch, and a very considerable quantity of iron plates and other weighty things that are not even fastened, and therefore obviously not in any way strengthening the ship, were also placed on board. The novel increase in the number of the launching ways was, therefore, probably due either to the nature of the ground, or the position of the piling, or some proposal for improving upon the usual method of launching large ships. What the declivity of the launch was, and whether the usual curvature was given to them longitudinally precisely according to recognised methods, we cannot say.

"It is next to be remarked that the very

serious injury which the ship has undergone does not appear to have risen in any degree from the strain thrown upon her during the actual launch as far as it proceeded, nor even from the strains occasioned by the overhang of the hull, notwithstanding the necessary weakness of its bottom as compared with its armoured sides and deck, seems to have withstood with marvellous resistance. It was only as the tide gradually fell away from her, and left the enormous overhanging hull to sink and brings its whole contracted weight upon one place, that, after hours of resistance the bottom yielded and crushed upwards, driving with its pillars, bulkheads, beams, and indeed, all but the massive vertical sides, the gird action of which is now so well understood.

"A determined attempt to float the ship from her present position is to be made, as soon as the necessary preparation can be completed. As far down under her as workmen can get at low water new sliding ways will be laid, and new cradles placed upon them. But, as the ship herself lies at so great a declivity, with her heel stuck down into the bed of the river, and as the further launching must of necessity be downwards, one of two things must be done; either the bed of the river must be dredged out deeply enough and far enough out from the shore to let her descend as much further as the launch may require, or else the stern must be raised before the launch. There are great difficulties in the way of dredging the river bed as suggested, and there are other objections to the former plan; while, as regards the latter, although it is obviously easy enough to raise the stern by the lifting power of the rising tide, it is equally obvious that this must be done only on the very tide into which she is to be launched, and, therefore, the ship has to be both lifted into her cradles and launched within a very short space of time indeed. It will be seen from this that the future launch of the *Independencia* will be a critical proceeding, and one which will deservedly awaken much public interest. We have said this notwithstanding its difficulty, this further attempt to launch the ship ought to be made. We say this because, even if she were already condemned to be dismantled and taken to pieces, it would be very undesirable to seek to effect these operations where she now lies, protruding far into the river, catching the full strength of the tide, and obstructing in some degree the navigation and traffic, while if she is ever to be repaired her previous launch is, of course, absolutely indispensable. Of course there is one contingency to consider—that of her being launched but proving so leaky when launched as to overpower her pumps and sink into the river. In that case, she would probably have to be blasted to pieces and raised piecemeal.

"The cost of the *Independencia*, when completed, engined, armed, and equipped for sea, would probably not fall short of half-a-million sterling. It is said that her hull only, as it stood ready for launching, was insured for half that amount, at charges varying from 2s. 5d. to 5s. per £100 as an ordinary launching risk. For a fee of about £500, therefore, the insurance office have incurred a claim of a quarter of a million, or, at least, of an amount equal to all the loss occasioned by the failure to launch the ship, and of the expense of restoring her to her former state."

The new Brazilian ironclad *Independencia* has at last been successively launched. It will be remembered that repeated attempts

were made to launch the big ship after her completion, but all without success until last Thursday. The launch was first attempted on the 16th July last at the spring tide, but the ship would not move. On the 29th of July, the next spring tide, another attempt was made, but it was equally unsuccessful. On that day all sorts of appliances were brought to bear to effect the launch, the result was that the ship went safely down the slips about her own length and then stopped, and when the tide fell she settled down with her stern in the bed of the river, about a third of her length having only left the ways. In this position she remained until Thursday. The Admiralty offered all the appliances at their command. Several powerful hydraulic rams, cranes and other appliances were forwarded from Chatham to Cubitt Town. The weight of the ship was decreased by the removal of some of her armour-plates, and other measures were taken with a view to effect the launch. This was fortunately accomplished in the presence of many officials, ship-builders, and others; and the vessel is believed to have sustained no injury that cannot in a short time be repaired. The *Independencia* is 320 feet long, with a beam of 63 feet, and has been constructed for the Brazilian Government. She is 5000 tons burden, builder's measurement, which is equal when armed and afloat to a displacement of 10,000 tons. Her sides are covered with a belt of 12-inch iron armour plates to a depth of about fifteen feet, with an inside lining of teak. As nearly all her armour-plates were fixed while the ship was on the stocks, her weight is about 6000 tons, and the operation of launching is felt to be one of unusual difficulty.—*Broad Arrow*.

THE BOUNDARY COMMISSION.

After two seasons labour, involving a considerable outlay upon the part of the American and British Governments, the work of locating the northern boundary line from Lake of the Woods west to the Rocky Mountains, a distance of 703 miles, has been completed so far as the field work is concerned. The party of engineers under Major Twinning arrived in this city last night. All the officers of the survey save American Commissioner Campbell are now in the city. It is needless in this connection to restate in detail what the commission have performed more than to say that they have located the boundary line which has long been in dispute, westward to the summit of the Rocky Mountains. Of the work performed, 300 miles has been completed since the commission left here on the 10th of June. From Major Twinning, the chief astronomer, it is learned that there are no points of contention between the British and American government, but a year will be required for the engineers to work up their notes before making their report.

The party, consisting of sixty-five persons, that arrived here last evening, were accompanied to Fort Buford by two companies of infantry that have acted as escort. Those that are in the city besides the engineers are their assistant chain men, axemen, teamsters, etc. All look brown and harty after the season of roughing it. They report the British Commission as having started for Embina overland, and that they will probably arrive there about the 10th of this month, and probably pass through this city to Canada. Mr. J. E. Bings, the Secretary of the Commission; Major W. T. Twinning, Chief Astronomer; Captain J. F. Gre-

gory, and Lieut. F. V. Green, Assistant Astronomers; L. Boss, First Civil Assistant, and V. T. Gillcuddy, M. D., D. Crowther, Second Assistants; and Captain O. D. Lattley, Quartermaster; and Dr. Elliot Coues, the Surgeon and Naturalist, are among the learned gentlemen of the expedition at the different hotels. All express themselves as right glad the work is completed, and to return to civilization again. The gentlemen will remain in the city for a time, and proceed on to their homes in the East and to Washington, to write up their notes.—*St. Paul Press*, Oct. 1.

CONTINUOUS NAVIGATION FROM ST. PAUL TO THE ROCKY MOUNTAINS.

BUFFALO, N. Y., Sept. 26, 1874.

"A project mooted some years ago of connecting the navigation of the upper Mississippi with the Red River, and the lakes of British America and its rivers, was revived on reading an article in your valuable journal, speaking of improving the navigation above St. Paul.

"There are interlocking streams, the Crow Wing, Sauk, and perhaps others, which could be joined by short canals to waters leading to the Red River, for small expense, and thus establish a long river leading to the Rocky Mountains and the Hudson Bay.

"What a vast internal system of inland navigation could thus be formed?

"The locks to connect the waters ought to be long enough and wide enough to accommodate steamers, say 200 feet long, 25 feet wide and 5 feet deep or draft. Such steamers could afford the cheapest means of transport. The project is entirely feasible, and some day, not far distant, will be accomplished.

"A survey by the government engineers ought to be had, and it is for the interest of your rising city to have it made."

As the writer of the above says this is a revival in a somewhat new form of an old project. But the old project was not to connect the affluents of the Upper Mississippi with those of the Red River, though some of them are so closely interlocked that it would no doubt be feasible, but on account of the ridges of hilly country dividing the Mississippi from the Red River basin it is much less feasible, because much more expensive than to connect the Red and Minnesota rivers. Lake Traverse, in which the Red River proper takes its rise, lies within a mile or two of the Big Stone Lake, which is the chief supply reservoir of the Minnesota river. They are both situated in a nearly level plain on the western border of our State, and in very high water it is possible to pass from one to the other in canoes and batteaux. The project, a favorite one of the late Hon. J. R. Brown, who used to have a trading post on Big Stone Lake, was to connect these two lakes by canal, to deepen the channel of the Upper Red river, to overcome the occasional rapids and shallows of the Upper Minnesota by means of locks and dams, and thus, with similar improvements on the Saskatchewan, to form a continuous chain of navigation for steamboats from New Orleans to the Rocky Mountains.

Of course the project is perfectly feasible, given the necessary expenditures, and it would be well worth the while. We agree with our correspondent, that if such a system were established we would forever hold the trade of the great central region of British America. Slackwater improve-

ment of rivers, with short stretches of canal and locks, are comparatively cheap, and are performable to long canals for practical navigation. For coarse and bulky produce time is not of much consequence. Low rates of freight are what is wanted, and those can only be had by water carriage. Railroads never can give transit. Iron rails and machinery wear out—water never. One of the most productive wheat regions in the world is that which is drained by the Red River and Sackatchewan. But to make wheat raising profitable in that region, some cheaper mode of transportation must be provided than by rail, and at a very small fraction of the cost of building a railroad the project above mentioned could be carried out, and the commerce tributary to over three thousand miles of navigation poured into the lap of St. Paul.—*St. Paul Press.*

LEATHER CANNON.

It is generally supposed that leather cannon were invented and first used by Gustavus Adolphus, with the view of facilitating transportation by reason of the light weight. Undeniable evidence, however, of their earlier existence, though of a smaller size, is found in the *Landeshuter Harnisch-Kammer Inventarium*, of 1562, in which mention is made of a "lange lederne Buchse mit Kugel-modell." Although Gustavus Adolphus improved and perfected the leather cannon which he introduced into his army in 1626, and used in the siege of Wormditt, yet neither he nor the German Freiherr Melchior v. Wurmbrandt, nor the North British Baron Robert Scot,* can be regarded as the inventors. The invention is evidently of much earlier date.

A leather mortar for firing shells, on exhibition in the Arsenal at Venice, was, the Venetians assert, made in 1319; it is very likely, however, that its origin is somewhat earlier. One is here reminded of the many substitutes for metal ordnance, especially of the wooden cannon (entirely bound with iron hoops), which are frequently mentioned in the period from 1525 to 1530.

The leather cannon varied from one to four pounders. The bore consisted of a copper cylinder, of the thickness of three fourths of the diameter of the ball used. The length of the cylinder was sixteen ball diameters, cascabel and breech were screwed into the cylinder. The vent of copper, was screwed into the breech. The entire length of the bore was covered with iron hoops, over which were wound a number of ropes, which, in turn, were covered with several layers of varnish. Over these layers another round of ropes was wound, and over this was spread a layer of cement. The process was repeated until the coat was of the thickness of two calibres—the last coating consisted of tarred leather, which gave the cannon its name. The charge amounted to one-fourth, nearly one-third, of the weight of the ball; the cannon was loaded only with canister. The canister shot, until that time only used in sieges, was introduced by Gustavus Adolphus into the field service, and consisted mostly of musket bullets, though old pieces of iron were often used. The shot was put into wooden and tin boxes, linensacks, and sometimes only in rude wicker baskets. The leather cannon of ninety pounds weight, with its light carriage, was easily drawn by two men.

The leathern cannon, however, by no

* Both M. v. Wurmbrandt and Baron Scot served in the Swedish Army under Gustavus Adolphus.

means met the high expectations entertained of them. Already in 1631 the Swedes ceased using them, because at the battle of Breitenfeld the cannon not only became so overheated that the charges ignited of themselves, but they also gave only very short and unreliable ranges.

In 1629, a certain Lieutenant Wolf Muller, of Chemnitz, circulated the report that he was in possession of a secret for the construction of a leather cannon, which had many and decided advantages over metal ordnance. The Elector of Saxony ordered Colonel von Schwalbach to investigate as to the lieutenant and his secret. The report of the colonel being favourable—"because owing to their light weight, easy transportation, and saving of powder, as well as the advantages they offer in the field against the enemy, and in mountainous and swampy regions, in which latter places heavy cannon can seldom be used at all, such pieces cannot be too highly regarded, &c.," the elector ordered the construction of two leather cannon, for which were given "fifty seven florins three groschen ready money; seventeen florins, three groschen for sixty pound powder; fifty one florins three groschen for two and one-fourth hundredweights refined copper. Of the copper the copper-smith received two hundredweight, with which he made a tube four and one half ells long, weighing ninety pounds, and used twelve pounds for muzzle and vent. The waste in melting twice amounted to sixteen pounds, the remainder was left to the smith as pay for his work." The trial with these leather cannons could not have been very satisfactory, if we may judge from the following item in a record of weights of the armoury at Dresden, June 14, 1630: "Inventory of the weights of copper and powder of the burst leather pieces in the Elector's armoury at Dresden;—Copper, one-half hundred weight, twenty-six pounds; powder, thirty four pounds."

No mention being made of them at a latter period, we must take it for granted that this one failure was thought sufficient to cool all enthusiasm for leather cannon.—*Artillerie Archiv.*

THE YEOMANRY OF IRELAND IN 1793.

At a general meeting of the Royal Irish Academy, held on the 22nd ult. Dr. William Stokes, president, in the chair, the treasurer, Mr. J. R. Garstin read an interesting antiquarian military paper, being a letter of Bishop Bennet, of Cloyne, addressed to Dr. Porter, Bishop of Clogher, describing the French landing at Killala in 1793, and their subsequent progress. The letter is somewhat valuable, as it affords an insight into opinions held respecting an historical affair, the result of which had an important bearing on the future of Ireland, dating from the event in question. The landing of the French at Killala has been described from different points of view, but in the light of this letter we dare say the opinions of many people will undergo a change. It is, however, not our province to point a political moral or draw conclusions thereon. The letter, which was sent by J. G. Vesey Porter, Esq., of Belleisle, was as follows:—"Dublin, August 31, 1793. My dear Lord,—As you will probably be very anxious to hear about Ireland, I send you a few particulars of our unpleasant situation. On the 22nd, at seven in the evening, four French ships appeared in the Bay of Killala. It was visitation day, and the bishop so little expected an enemy, that the gentlemen

with him did not rise from table, and two of his sons took boat and went on board them. The French landed 200 men, who were resisted for a few minutes by some Fenibles and Yeomanry, but two or three of the latter being killed, the rest threw down their arms, and the bishop with his family, dear Thompson, Dr. Ellison, and, I believe, one or two more of the clergy, were made prisoners. The French next day pushed on to Ballina, skirmishing all the way with the Yeomanry and Carbineers, of whom we lost George Fortescue and three or four more. The country being alarmed, the enemy pressed no further on that road, but advanced on the side of Sligo, and Mr. O'Hara, with the Yeomanry of that part of the country, after some ineffectual resistance, prepared to abandon Sligo itself; but the French stopped short and retreated again to Killala. By this time their force was known to be under 1800, with nine or ten pieces of cannon; their ships sailed away. General Taylor, from Enniskillen, secured Sligo and Boyle; Hutchinson, with the garrison of Galway, advanced to Foxford Lake, with about 20,000 men and seven pieces of cannon, lay at Castlebar; and the Lord-Lieutenant collected a considerable force at Athlone to support all the three. This was a very good plan, and we all expected to hear the enemy had re-embarked or been all taken; but they were better commanded than we expected, for before our troops could contract their circles so as to act in support of each other the French left Ballina, crossed the mountains by Lake Con, where 200 men would have stopped their whole army, and fell suddenly upon Lake, with numbers nearly equal to his own. As the mountain road was so bad they could only bring two guns with them, and our artillery played on them as they advanced with considerable effect; but the Kilkenny and Kerry Militia, from cowardice or treachery, or perhaps both, took to their heels, without firing a shot. Some say they were followed by a regiment of Scotch Fusiliers (the Frasers), but this has been since denied; it is, however, certain that our army retreated in the utmost disorder, with the loss of their cannon and baggage to Tuam, and all Mayo is in possession of the French. Yesterday morning Lord Cornwallis was to advance from Athlone with 7000 men, at least 4000 of whom are British. It is quite uncertain what the enemy intend doing. Some think their point is Galway; others, that they will stand action; a third party they will push for Dublin. This much is certain, that if Lord Cornwallis receives a check, not only our property but our lives will be in great danger. The French were not joined before the action by any very considerable number of the Irish, but I fear they have increased their numbers since. We are also in fear of fresh troops from France landing every day in some other quarter; in short, you are a very lucky man to have all you love on that side of the water. Adieu! Our fate will be decided in a few days, or perhaps hours. As yet the country is quiet, and if we can master these fellows before they can get sufficiently reinforced, the expedition will strengthen instead of hurting us; but we are by no means so sanguine as we were. The French officer is a man of great talents. Before the action of Castlebar, he made his own troops and his Irish allies change coats, so the flower of the French Army got close to our troops, while we took them for a set of ragamuffins. I am afraid he will prove too hard for us.

Yours faithfully, Wm. CLOYNE."

—Broad Arrow.

A MILITARY INVENTION.

One of the practical military lessons of the war was the importance of rapid field intrenchments for infantry. When troops had once captured an important position, perhaps at great loss, and had been dislodged for lack of cover against a counterassault, they were quick to avail themselves of the neglected precaution on the next occasion. During the Virginia campaign of 1861 a line was no sooner formed on a field of actual or probable battle than the work of intrenchment began, no matter how many times the labour had proved to be useless. A great want was an intrenching tool at once effective and portable. The pickaxe and spade were effective, but heavy for infantry to carry; and the bayonet and fingers, so often used, were portable but not effective. The spade and pick were useless, too, in many cases where only stealthy, noiseless movements would ensure success.

Such an occasion, for example, arose one night soon after the assault on the Petersburg lines in June, '64, when a Massachusetts regiment crept across an open field, and, lying low and silently plying bayonets and fingers in the soil, threw up breastworks on a low crest within less than a hundred yards of the enemy, unnoticed and unsuspected. The use of spade or pick would have drawn upon the workers an almost annihilating fire. Not long after the battle of Spotsylvania small short-handled spades were issued in the army of the Potomac, every eighth man in the ranks, we believe, being required to carry one in addition to his ordinary accoutrements. An effort has been made recently by Brevet-Lieutenant Colonel Rice, U. S. A., to supply the needed implement by the invention of the "trowel-bayonet," ten thousand of which are in process of manufacture by the government of the Springfield armory. Numerous experiments have been made by officers in different parts of the country, in accordance with instructions from the War Department, and it appears from their reports that with a modification (since made) of the shank or handle the new bayonet will fully answer its purpose.

In the course of these experiments single ranks of infantry have thrown up works affording them protection from musketry fire in twenty, fifteen, ten, and even in nine minutes; and in two special experiments the men covered themselves in four and two and a half minutes. The objections to the trowel bayonet are that it cannot be used to stack arms, and that it is unsightly. The first objection is practical, but as the Rice Merrill and Rice Metcalfe hook bands and swivels, for stacking arms without the use of bayonets at all, having been adopted by the government, it is not a serious one. The second objection is hardly apposite unless it is admitted that an army is maintained more for show than for use. Officers in the Indian country commend the bayonet warmly. General Miles, who commands the expedition sent from Fort Leavenworth against the Comanches in Texas, has requested the War Department to furnish him as soon as possible with five hundred of them, and Capt. Lyman of the fifth infantry wrote to a friend in this city recently: "I had a staving fight for three days—9th to the 12th [September last] with Comanches—400. We made rifle pits and drove them away at last. If I had only had the Rice trowel bayonet we would have beaten them off sooner."

In connection with his invention, Colonel Rice has prepared a system of shelter trench and pit exercise for troops in line of battle

and for skirmishers, rendering the bayonet almost double effective. Indeed this offensive defensive weapon bids fair to play no unimportant part in future operations on the plains.—*Boston Daily Advertiser.*

RIFLE COMPETITION.

MILITARY vs. CIVILIAN.

This match took place on Wednesday the 30th ult., the military coming off the victors by ten points. The teams were composed of eight on each side, but owing to the non-appearance of two of the civilians, an arrangement was made that two of the team should shoot over again, one with a different rifle to that used in the first five rounds at each range. At the 200 yards range the wind was very strong from the right and caused only average shooting. Before arriving at the four hundred yards range, the wind dropped, which was signalled by the repeated use of the bull's eye disc. On completion of the firing at this range the wind rapidly increased from the left, so that at 600 yards it required about twelve feet windage allowance to hit the target, which necessarily caused rather wild shooting. Ranges—200, 300, 400, 500, and 600 yards. The following is the score made by the respective teams.

MILITARY.

	Total.
Major Irvine	54
Capt Tschereau.....	61
Sergt Chapman	59
" Young	61
" O'Callaghan.....	40
" Watson.....	55
" Lookhart.....	69
" Scarrow.....	61
	469

CIVILIAN.

	Total.
A McMicken	58
Lillie.....	56
McIntosh	58
Chambers.....	62
Parr.....	60
Brown.....	59
Lillie	61
McMicken.....	45
	459

—*Manitoba Gazette.*

PROVINCIAL ASSOCIATION MATCH.

FIRST DAY.

The First Annual Prize Meeting of the B. C. Rifle Association began at Victoria on Thursday. A new range had been prepared for the occasion on Henley's Point, a few hundred yards east of Bacon's Hill. The range is quite open and without shelter, on all sides, and the targets, being situated on the extreme end of the land, are backed by the sea. The average shooting throughout the day, especially in the first two matches, was poor—probably because the range was new to everybody.

The first match, open to all members of the Association, 200, 400, and 600 yards, drew together quite a number of competitors. There were two prizes—£20 and \$5. The first was taken by Mr. P Woollacot, Victoria, with a score of 43, Mr J C Brown, New Westminster, coming in second with 39.

The second match, open to all enrolled militiamen, 200, 500, and 600 yards, prize (1) a Martini-Henry rifle and 500 rounds of ammunition, (2) entrance fees, was the most exciting of the day. The shooting was not very good, and three or four of those who shot first (the men shoot two & two) finished with 33, and were thought to stand well. Lieut. Colonel Houghton, however, scored 15 at the last range and ran up a total of 39, which was considered "safe," as the only man who had not completed his firing. Ens. Peole, of New Westminster, had been unfortunate at the first range, scoring only 10. Mr Peole had volunteered to assist the markers, and was not on hand when the second range was fired, so that he had to shoot off the two ranges after the other competitors had completed firing. At 500 he put 18 to his score, bringing it up to 28, and at 600 he scored 3, 2, 4, (37) and missed. The fate of the match, therefore, depended on his last shot, but Mr Peole was equal to the occasion, and put in another centre, bringing his score up to 40, and winning the first prize by one point.

The third match open to all members of the association, 300 and 500 yards, prizes \$20 and \$5, was the best of the day, in so far as the shooting was concerned. At 500 yards especially some very good scores were made. The prizes were carried off by Messrs. Kennedy and Woollacot, Victoria, both of whom scored 30.

The matches to be fired yesterday were—All Comers; Effective Militia (Nos. 4 and 5 on Programme) and the match for the Governor's Challenge Cup. The United Service match (No. 6) is postponed today, when, we believe the remaining matches, Nos. 7, 8, and 9, will also be fired.—*Dominion Pacific Herald.*

49th BATTALION RIFLE CLUB MATCH.

The second competition for the Subaltern Silver Challenge Cup, came off on the ranges of the Hastings Rifle Association on the 19th inst., and the utmost attention was paid to secure good shooting on the part of those engaged therein. Everything passed off with the very best of good feeling, and all were satisfied with a good day's shooting. The ranges were 200, 500 and 600 yards, 5 shots at each. The following scores were made:—

	Points.
Hospital Sergt Bennett	42
Sergt McColl.....	37
Corp Hilton.....	30
Sergt Marsh.....	31
Pte Tammadge	21

Hospital Sergt Bennett being the winner of the Cup, was challenged by Pte Tammadge, and in answer to the same begs to state that he accepts the challenge, and will be prepared to shoot on Saturday, Nov. 7th. All those interested will please take notice. We believe a few of our best shots intend visiting Bath on Thursday, 22nd inst., to attend their Annual Rifle Match. May success attend them.—*Belleuille Intelligencer.*

A special to the London Times from India, says Nena Sahib has been captured in Gevalior. He has been identified beyond a doubt by the Maharajah of Scindia, and is now a prisoner in the Maharajah's palace. A political agent has taken his confession.

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The Volunteer Review,
AND
MILITARY AND NAVAL GAZETTE

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

OTTAWA, TUESDAY, OCT. 27, 1874.

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 at 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.

LEUT. J. B. VINTER, of Victoria, is our authorised Agent for Vancouver Island, British Columbia. As is also Captain H. V. EDMONDS for New Westminster and adjacent country.

"The London Army and Navy Gazette announces with satisfaction the definite settlement of the "field service Shrapnel" question. After a series of exhaustive experimental trials with variously improved specimens of both the 9 and 16 pounder natures, which have extended over a period of two years, a form and construction of Shrapnel shell have at last been decided on, which answer perfectly all the requirements aimed at, and obviate all the difficulties that arose with earlier patterns of these projectiles. A field service Shrapnel shell, being designed to act against troops in the open, should break up easily into a great number of pieces, the explosion of the bursting charge, and should have a wide cone of dispersion.

In order to secure these ends the wall of the shell in the original pattern was made very thin, and was grooved longitudinally to weaken it further. The head, moreover, was lightly secured to the body, so that it might fly off at once, and permit the bullets behind to proceed forward to a certain distance in an unbroken mass. The effort to obtain such conditions was the origin of the defects found in these shells. Practically, they were found too weak to bear the shock of discharge, and broke up prematurely in the bore of the gun. In many instances, also, the heads became loose in the limber boxes. The defects were more apparent in the 16 pounder Shrapnel than in the 9 pounder, but neither was considered an effective projectile. In the new pattern which has now been sealed and approved, and an immense number of which have been tested at Shoeburyness to the entire satisfaction of the "Special Committee on Rifled Shell Guns," the following differences in construction are found:—The walls of the shell are considerably thicker, and extend up about 1 inch further towards the apex of the head, the body and the head thus overlapping each other to a great extent. In order to make room for the bullets with this extra thickness of wall in the 16pd, the gun metal fuze socket is replaced by a tin one with a tapped ring upon the top, thus assimilating to the original pattern of the 9 pounder. The latter remains the same in this respect. The fuze sockets of both 9 and 16-pounders are bevelled at the top so as to form a continuation of the coned head and present no abrupt angle. The longitudinal grooves, which were intended as lines of weakness to facilitate the bursting of the shell, are also discontinued in both natures."

The foregoing paragraph shows that the question of shell practice with rifled artillery has been solved as far as field artillery is concerned, it is also claimed in an article on ocean warfare in a late number of the *Edinburgh Review* that Sir WILLIAM PALMER had perfected a shell for heavy artillery which has left nothing to be desired. The solution of which has hitherto been looked on as a most difficult problem will, doubtless, cause a revolution in the style of vessel to be used in future as a war ship. If no thickness of armor will keep out shell it is useless to cover a vessel with a mass of iron. The protection of her battery or armament is alone necessary; increased speed and a reduction in size will alone give a chance of safety, and the best gunner, all other things being equal, will be sure of victory.

"The Foreign Office has now published correspondence respecting the Brussels conference, which bears out the suggestions we made a fortnight ago. The answer of the Russian Government to Lord Derby's letter is by no means satisfactory, and that it is not so regarded by our Foreign Secretary is seen in the actual instructions given to our delegate, Major General Sir A. Horsford, so far as they are reported in the general circular, dated 25th ultimo, which Lord Derby has despatched to our representatives at courts sending delegates to the conference. The logic of M. de Westmyn's despatch is worth notice. The scheme, or list of clauses, drawn up and published in *Le Nord*, has been presented by the Russian Government, so he says, 'as a point to start from, and

not as a definite work." *Herein lies its real danger*; and when he afterwards refers to "limits," he seems to forget that no limits can be assigned to conclusions which "start from" certain suggestive hints until the conference has them. It is "understood," he adds, that "neither maritime operations, nor naval wars, nor the relations of belligerents at sea" shall be brought forward. How little Lord Derby trusts to this understanding his instructions declare. Our delegate is to guard carefully against entering *in the course of deliberations on other matters*, into any discussions which may, *however remotely*, affect the subject of maritime war; and, if any papers are attempted to be presented to the conference or any statements made refer to it, to protest against any such papers or statements being received, and to apply to Her Majesty's Government for instructions." Cautions of this nature were needless, as we have to deal with wily diplomatists as well as hard headed military officials, who are able to appreciate the naval bearing of military rules, not specially guarded against application to maritime warfare."

Broad Arrow of 15th August, is responsible for the foregoing paragraph, it shows the danger of a nation like England entering into philanthropic engagements whose ultimate end would be to disarm her altogether. In fact the Brussels conference reminds one of the old fable of the beasts of prey holding a council, in which the beasts of chase, and especially the domesticated animals, were invited to participate, under the assurance that their interests alone would be considered. England has had enough of philanthropic politics for the next two hundred years; as the Roundheads gave her such a strong dose of Republicanism that she has no stomach for a repitition, so that one sentimental treatise quite enough to digest for the next century or two. It would be a curious study to gauge JOHN BRITON'S mind on the subject. The Peace Preservation Society, of which he is such a distinguished orator, would doubtless like to obviate the sufferings consequent on war, but Lord DEUBY, as a hard-headed politician, knows how to separate fancies from facts.

One of our esteemed and gallant correspondents some time ago expressed some doubts of the value of the Martini-Henry Rifle. Since then it has been firmly attacked in England and alleged mechanical defects pointed out. The following article contains at once sensible suggestions and a practical way of finding out the real merits of the case.

The *Pull Mall Gazette* observes that:—"It is quite natural and proper that our weapons of war should have to run the gauntlet of public criticism, and in the case of a weapon which, like the Martini-Henry rifle, will in time come into use among the volunteers, and which, when it established its pre-eminence in the Government trials, necessarily created many enemies, it is probably inevitable that this criticism should be close, vigorous, and sustained. Nor, on the whole, is such criticism to be deprecated. It is, of

course, open to question how far objections which present themselves under the guise of impartiality when they are practically *ex parte* expressions of opinion of interested opponents or of rival inventors are of any substantial value—if, indeed, they are not absolutely hurtful and misleading; and there are unfortunately, indications that some of the criticisms which are directed against the accepted Government weapon possess this character. But really independent, intelligent critics of our war material is to be welcomed, not only because it tends to bring to light whatever may be defective and to promote progressive improvement, but because the knowledge that each new weapon will be exposed to a vigilant examination at the hands of independent experts acts at once as a salutary check and stimulant upon those who are immediately responsible for its introduction. On these grounds we are very far from regretting that the controversy as to the merits of the Martini-Henry rifle has been revived in the *Times*; but as it is not unlikely to go on for some time, it may be useful to point out to those who are engaged or may hereafter engage in it that they would do well to break up the subject in their own minds into its elements, and avoid mixing up matters which have no necessary connection. It is worse than useless, for example to urge in condemnation of the breech action that the barrel becomes heated in rapid firing, that the arm fouls rapidly, and that there is an inconvenient recoil—points which have no more connection with the breech action than they have with the color of the rifleman's coat. It is also unfortunate when objections are urged on what may be called theoretical grounds, such as the spiral spring does not give a blow but a push, that the extraction leverage is less than it is in some other weapons, and that other nations have preferred some other rifles to the Martini-Henry rifle. What we really want to know is in what does the Martini-Henry fail, and what are the grounds for reopening a competition which was so recently brought to a conclusion after a very large expenditure of time and money? Except in the matter of recoil, which with a given weight of charge and bullet, will probably be found to be rather a matter of lengthier form of stock than of anything else, has there been anything of the nature of a failure on the part of the Martini-Henry? Is it not, on the contrary, notorious that on the whole the arm has given satisfaction in the public trials—we do not say to the inventors, or other systems, or to the riflemen who have conceived a preference for some other arm—and that, the percentage of misfires and of failures to extract has been below the average with breechloaders? As regards the statement that every nation in Europe, except the Turks, has practically treated the decision of our Small Arms Committee with contempt, and has adopted some weapon of its own—this, if it proved anything against the Martini-Henry, would be equally fatal to the accepted weapon of every other nation, seeing that no two nations have adopted the same arm, and that the contempt of the French, Germans, and Russians for the decisions of foreign Small Arms Committees has not been limited to that of the English Committee; and, further, if we are not misinformed, both the Mauser and improved Chassepot rifles have been signally worsted by the Martini-Henry in some recent trials. In short, what we want, and what so far as we know, has never been attempted, is a careful and dispassionate examination of the alleged defects of the

Martini-Henry rifle by the light of our now not inconsiderable experience of the practical working of the arm. We should like to know, for example, distinctly whether the spiral springs, against which so many successful objections have been urged, have or have not discharged their duty—whether the extraction is or is not satisfactory—whether the breech action has or has not worked in damp, cold, heat, and dust—whether the cartridge doors do not fulfil the expectations which had been conceived of them, and then we should like to know precisely upon the firing of how many rounds this experience is based, a "Fien," turning to the barrel and bullet as distinguished from the breech action, it would be satisfaction to know whether the shooting of the gun—not merely of a dozen or rounds or so, but of a large number of rounds, not merely with a clean barrel, but of long continued firing, not merely at one particular place but under varying circumstances and in various hands—has sustained or has not sustained the reputation of the Henry rifle. If the correspondents of the *Times* will give us their experience on these points, they will be doing better than by raising theoretical objections which have been answered, over and over again, by talking glibly of mechanical and unmechanical breech actions, and by oblique recommendations of rival systems. And if it be urged that the necessary data on these points could not be collected except by a Government committee, then we would gladly welcome the appointment of such a committee of investigation; but pending such an examination of facts, as distinguished from fancies and theories, it may reasonably be objected that the strenuous exhortations which have been addressed to the Government to reopen the whole competition are at least premature. It is also worth while to observe that the competition, if reopened at all, must be reopened comprehensively, and not merely framed to bring two or three diligently puffed rifles into it, and that to do the thing thoroughly probably about eighteen months or two years would be required, during which time the manufacture of a smallbore breechloader for our troops would have, we presume, to be suspended. Finally, it is to be remarked that, even assuming that there exist at the present moment one or two rifles slightly better than the Martini-Henry, it is reasonable to anticipate that these rifles in their turn will be surpassed by others; and if we are to wait to rearm our troops until such time as we get a rifle which cannot be improved upon, the rearmament will have to be indefinitely postponed. It is, therefore, not enough to show that during the two or three years which have elapsed since the Martini-Henry rifle was adopted improvements have been made in breech actions and barrels; that is of course to be expected; but it must be shown either that the Martini-Henry is defective in some essential, or that it is relatively so much inferior to the improved arms as to justify the suspension of manufacture, the reopening of the trials, and the conversion of the whole plant of Enfield and Woolwich. The critics of the arm will excuse us if we say that their criticisms have as yet fallen short of what alone would warrant so costly and inconvenient a decision.

The utterances of men who have filled the high position of Premier of Great Britain are naturally looked to as oracular to a certain extent, and seem to be commented on as in

a certain sense political prophecies. In this respect Mr. Gladstone's speech on the annexation of the Fiji Islands has failed to give the satisfaction to the British people which might be looked for from their late idol. The speech itself is only characterized by that commercial spirit which governed the actions of his administration in respect to its foreign and colonial policy and is commented on as follows by the *Saturday Review*—

"Mr. Gladstone fears that the cost and loss of life which were incurred in the wars with the Maories may be reproduced in the Fiji Islands. If this argument has any meaning he must imply that the settlement of New Zealand was an impolitic measure resulting in a preponderance of disaster. Before the voyage of Captain Cook the islands which now bear the name of New Zealand contained no wild or domestic quadruped, nor did they produce any kind of grain. 40 years ago the inhabitants, though by nature mainly an intelligent, were cannibals & pagans, and the elements of civilization were unknown. It is, unfortunately possible that the native race may disappear, but the existing tribes have adopted Christianity and civilized institutions and practices, and a prosperous society of Englishmen occupies regions which were formerly a useless wilderness. The harbors of the islands are thronged with shipping, there is a large and a rapidly growing trade, and European productions are to a great extent supplanting the native vegetation. Before the end of a century from the colony New Zealand will contain many millions of Englishmen enjoying the fullest advantages of the latest forms of civilization; yet the sight of what exists, and the certain prospect of a brilliant future, offer to Mr. Gladstone's mind no equivalent for the expenditure in native wars of 10 or 11 millions. If it were certain that the Fiji Islands would present as large a return for the sacrifices which may be incurred by annexation, Mr. Gladstone would be serious in his reasoning, still object to the addition of a few annual thousands to the Colonial Estimates, and to the possible risk of occasional skirmishes with the barbarous highland tribes.

In the *Times* of the 11th August is to be found a letter containing a suggestion from an ex member of the British House of Commons, which, taken as its fair value is harmless enough, but a little closer inspection of its contents will dispel the illusion. The fleets of Great Britain are engaged in defending the commercial interest of the Empire, which interests centre in England. The commercial interests of Holland have each its appropriate centre in the colony where it is produced or exists; therefore, that colony or possession must be made self-supporting to pay. In the case of her colonies Great Britain protects her own interests in that of the colonial possession of Holland. The Dutch protect the interests of the colony first, and the interests of their country secondly, because the same rule will not apply.

The Dutch colonies are governed and legislated for, from Holland, they are not immediately incorporated with the Kingdom, than the English colonies with the Empire.

and hence have no separate interests. As our colonies are not represented in the Imperial Parliament it would not be fair to make us pay for what is really an Imperial expenditure, demanded by Imperial necessities, if measured by the service done us our proportion would be about sixpence per pound sterling in the outlay. There could be no objection to the plan if we were represented in the British parliament, and had a voice in the dispatch of Imperial matters concerning ourselves. Mr. GARSTON and ex M.P. had better devote their energies to this desirable consummation in the first place, and they will find the colonists willing to do their duty.

Sir,—Allow me to ask the attention of Lord Carnarvon and Sir Stafford Northcote to a subject of special interest to them, and of some general interest to many of your readers.

When a Dutch ship of war clears for any of the Colonies of Holland, all the expenses become chargeable on the Colony for which she is bound. But a British ship of war cruising in Colonial waters is paid for by the taxpayers of the United Kingdom.

Until a recent period the definition of a "self supporting Colony" with us was "a Colony that paid the whole cost of its civil establishment." Now, a Colony is not regarded in Downing Street as self-supporting unless it pays the whole cost of its military as well as its civil establishments. But even this is hardly a correct definition. In the Colonial Office at the Hague I found that a self-supporting Colony was defined to be one that paid for its own civil establishments as well as for all its military and naval expenses. How many of our Colonies, according to this definition, can be regarded as self-supporting? Not one.

Some of our officials of the old school are supposed to call the Straits Settlements a self-supporting Colony. But a few hundred miles from Singapore is the Dutch Settlement of Western Borneo, which the Dutch say is not self-supporting, and yet the latter actually distributes more to its own support in proportion to its expenses than the former. The British Colony pays for its civil establishment and contributes a respectable sum, though not the whole cost, towards the expense of the Imperial troops. The Dutch Settlement on the Kapuas pay for their civil establishments and for the whole of their troops, and they contribute likewise to the cost of the men of war on the west coast of Borneo. But as a portion of this naval expenditure falls upon the exchequer of Java, Dutch Borneo is not yet regarded as self-supporting.

Java is even more than self supporting. It pays all its civil, military, and naval expenses, and also sends to the Imperial Treasury a respectable contribution.

Without aspiring to the perfection of Java in this respect, is not worth considering whether our Colonial Empire may not be made entirely self supporting, and whether this may not be done by a plan which would be acceptable to the Colonists, and even heartily welcomed by them?

My visits to the Dutch settlements abroad and to Colonial headquarters in Holland convinced me that, whatever grumbling the Dutch Colonists may indulge in as to the labour question and the appropriation of the Colonial surplus, there is no objection

whatever to the mode by which the Colonies pay for the Navy.

It is, in truth, one of the most popular parts of the Colonial expenditure I found in the *Kupees* three men-of-war, two properly belonging to the Dutch Navy and one the property of the Colony. The expenses of all three were charged against the Colony, and the Dutch members as well as the native traders said they were entirely satisfied with this arrangement. They said the naval strength of Holland was their best protection, and the most natural link between them and the Netherlands. They were glad to see the extra ships of the Dutch Navy in the river, because they believed the presence of the ships in many ways counterbalanced their cost.

Having been employed for some years at Colonial work in Asia, Africa, and America, I can venture to assert that our Colonies would readily bind themselves still closer to England by following, in this respect, the example of the Dutch.

Nor would the system be unpopular in our Navy. It is a matter of complaint that extra allowances are not given in the Navy for the extra risk and labor undergone in our tropical possessions. No doubt, in adjusting Colonial and Navy expenses, this just complaint might be remedied.

The present moment is, perhaps a favorable time for working out the details of such a plan, for Lord Carnarvon's general policy commands the confidence of the Colonies. The late Government, too, as far as Mr. Knatchbull-Hugessen's utterances bind them, appear disposed to unite the Colonial Empire still closer to the Mother Country.—I am, Sir,

"An ex-M.P."

London, August 10.

In another page our readers will find an article on "North West Mounted Police," from the *Mail* of the 8th September, which realises all the fears we expressed on the subject at the time the expedition started, and we then stated that it was not a mere police but a well disciplined and organized military force which the service required. With what party the blame of organising such a puerile expedition rests we neither know nor care, but we wish to call attention to the assertion of the *Mail* that it was as a police force in deference to the susceptibilities of our neighbors who would be offended is a soldier approached their borders. What is in a name—may well be asked in this connection? If the mounted police ever reach the scenes of operations and have anything to do in the way of using Snider Easfield rifles we suppose it will be in a civil and not military fashion, and there will be all the difference in the world in shooting a scoundrel down if it is done by a policeman—well and good—if that pleases people we are content, but we think Her Majesty's subjects in the Dominion have good cause to ask why a deference to the wishes or fears of the United States should be allowed to interfere with the conduct, organization and equipment of a local expedition for purposes brought on either by their supineness or weakness of that power. This is a question affecting all parties alike in Canada, and should be an-

swered to the satisfaction of the people whose relatives and countrymen's lives are jeopardised by official sentiment and folly. We cannot coincide with the *Mail* in allowing any blame whatever to attach to the Commissioner, we know him to be a brave, capable, and experienced soldier; quite as well able to judge of what man or horse can do as any other officer, and with a thorough knowledge of his work much less likely to overdo either, seeing his reputation to say nothing of his life may rest on such action; but the organization of the force was defective and the commanding officer should not be held accountable for errors over which he had no control. We are quite certain that there will be no failure as far as he is concerned, and we know he has some of the best officers of the Canadian Army in his command; but we hope it will be a lesson in organization not thrown away on our military departments, and one exemplification of the folly of allowing any department of the Government to usurp the functions of that of War. The main facts of the article are borne out by private advices and they concur in saying that the organization was defective from the first. Individual incapacity in appointees is an evil attaching superlatively to all acts of representative Governments, but it is after all only local and can be remedied.

MAJOR GENERAL SELBY SMYTH, accompanied by his Aide-de-Camp, left Ottawa on Wednesday for London, Ontario. It is his intention we believe to visit the several Military Districts in Ontario and Quebec previous to the commencement of winter and, will probably be absent from the capital for some weeks.

We see by our exchanges that Lieut-Col. RICE's trowel-bayonet is attracting universal attention in the United States. All the leading papers throughout the Union speaking in glowing terms of it—as being the arm *par excellence* of all the inventions yet made. It is more than probable that the United States troops will be armed with it; and indeed we would not be surprised to see it introduced into some of the European armies, if not all of them. We copy from the *Boston Daily Advertiser* an article on the trowel-bayonet which will be found in another column.

We copy the following in reference to the new Commander-in-chief of our Canadian Forces, from the *Broad Arrow* of Oct. 3rd.

"Major General Edward Selby Smyth proceeds in a few days to take up the duties of his appointment in chief command of the military forces of the Dominion of Canada, for which he has been selected by His Royal Highness the Field Marshal Commanding in chief, under the Militia Act passed in the last session of the Colonial Parliament. Major-General Smyth served as brigade major to the forces in the Concan and Sawant Warree Country during the campaign of 1844

and '45, and was present at the attack and capture of several strong stockades, as well as in the operations before the mountain forts of Monolhur, and at their final assault; also at the forcing of Kivavoo Pass and subsequent occupation of the country below the Ghats. Served also in the Kaffir war of 1851-2 (medals), and mentioned in general orders for cobliness and intrepidity in command of a column in action in the Fish River Bush (brevet of major); with the expedition north of the Orange River in the Second Division; and subsequently as deputy adjutant general and deputy quartermaster general to the Forces in South Africa, from January, 1854, to July, 1860. While commanding the troops in Mauritius he was twice sworn in, and acted as Governor in 1870 and 1871. He was appointed major general, 6th March, 1868. Having had so much Colonial experience, Major-General Smyth cannot fail to win the confidence of the Canadian Forces. The appointment is under the five years rule."

THE NORTH WEST MOUNTED POLICE.

Considerable interest was evoked during the organization of this force from the somewhat romantic mission to the remote districts of the great North West as the pioneers of law, order, and civilization among the border ruffians and savages who inhabit that Great Lone Land which has fallen to us as an inheritance. Rumours of repeated violations of law by organized bands of whiskey traders, of the establishment of forts where law and order were set at defiance, of systematic cheating and robbery of poor Lo, and the disastrous consequences of disease and starvation that ensued, rendered such an intervention of strong armed justice desirable, if not necessary; and few questioned the advisability of action on the part of the Government. Respecting the organization and constitution of the force, there were, however, diverse opinions. It was considered advisable, for political reasons, that the force should be a police, and not a military force, and it was attempted to organize and discipline a large body of men, held by a mere civil contract between master and servant, rather than risk a complication with the American Government, in case the pursuit of the whiskey traders should lead an unwary trooper across the border. The consequence has been that in the endeavour to enforce military law upon police constables, there has been considerable disagreement between officers and men, and upwards of fifty deserted, or rather left the force before they left Capat Dufferin.

This is considered a proof that the organization of the force was defective, and that it should have been constituted under the militia law of the country, and held liable to the pains and penalties of military service. As a regiment of cavalry there would have been law, order, and precedent to guide in the organization, and men would have been warned before joining of the duties they were required to perform, and of the discipline to which they were required to submit. But there were no recognized rules to guide the police formation, and owing to the anxiety of the Government to prevent serious consequences from following Mr. Archibald's unfulfilled promise to the western tribes of Indians, there were excessive haste in the organization of the force; the result of which is only too plainly apparent.

Urged, it may be supposed by the impetuosity of haste entertained by the Government, the Commissioner who, while on ser-

vice in Ontario was supposed to be an energetic and capable officer, has been betrayed into many errors, the result of which may be fatal to the Force. Borne away, doubtless, by the immense preparations that were necessary before a force of three hundred men could be launched on the prairies for a year, perfect in equipment, clothing and food, there was an indifference to detail, and a laxity of management that was apparent to an experienced eye even before the Force had left Toronto. The march from Fargo to Dufferin was made at the rate of thirty-two miles a day, for five days, under a scorching sun. More than a dozen horses were left dead or sick en route, and the remainder reached their starting point on British territory collar galled, broken-spirited, and jaded. The loads might have been eased by sending all heavy goods by steamer to Dufferin, but the Commissioners overruled this suggestion, though made by an old and experienced campaigner. Then the stampede—by which several animals were more or less injured, and many more irretrievably broken down in the pursuit. Irretrievably, because the fortnight's delay at Dufferin was insufficient to build them up for the work which lay before them. The last point from which intelligence reaches us, some 250 miles due west from Dufferin, has been obtained by heavy forced marches, and one half the horses were made skin and bone. No oats could be provided for them and the halts for two or three days, at intervals of six or seven, were insufficient to recruit power so far run down. So much for the management of the horses. Hurdled organization and the inhumane handling way in which they were purchased, filled the complement with indifferent or unsuitable animals, and the difficulties with which the Force has had to contend have not been diminished by the number of bawky and vicious horses they took away with them. The heavy marches from Fargo to Dufferin with these untrained and unruly beasts, coming immediately after a long railroad journey, broke them down at once and prevented their further usefulness, whereas by judicious treatment they might have been gradually accustomed to the collar and the fatigues of the road.

Next, we are brought face to face with the crying evils of political appointments without due regard to efficiency. It needs no military knowledge to understand how much the comfort, the health and the efficiency of a soldier depends on the Quartermaster. Of all regimental duties his are perhaps the most vital. Yet a person was appointed to this position, unable to speak English, in a force of 300 men (of whom perhaps a score might understand French), absolutely ignorant of and inexperienced in the duties he was called upon to perform, of utter business incapacity, and otherwise totally unfitted to fill the office. Of course, after having involved the accounts in inextricable confusion and caused serious discontent among the men, he was removed—and another gentleman, almost similarly incompetent, appointed.

Though proceeding on an expedition of a character that might be hazardous, inspectors and sub-inspectors were appointed without the slightest reference to capability or experience. Three or four were raw lads from England, who knew nothing about the country, and owed their position to interference from men of high position in the Motherland. One gentleman was imported from Ireland for the express purpose. Many never bestrode a horse before they joined and most were completely ignorant of their du-

ties. Was it not absolute cruelty to place such men in such positions? Striking exceptions there were, but the leaven was small in comparison with the lump. Yet there were twenty good appointments for every position in the Force, and the Government might have picked the country for experienced officers, so popular was the expedition.

The men were, as a rule, a good lot, and only required judicious training to develop into a serviceable force. But they were harassed by fines for following the example of looseness set them by their officers, and grew careless and disheartened. It is not the bad men who have deserted, but on the contrary. Two or three Sergeants and Corporals, the Farrier Major, and many of the stoutest men have left.

The arrangements for pay have not been good, and have caused dissatisfaction. No authority existed for paying men in advance, so that they might make some provision for their families, as is always done in the Imperial service, and was done on the Red River Expedition. Surely if the Department of Justice did not know how these things should be done, they should have learned from the Militia Department—or is it true that a jealousy as to the organization prevented the latter from giving co-operation and assistance to the former, at the expense of the poor fellows now lying unsupported and half provided, in the midst of the boundless prairie?

Under these circumstances it needs no oracle to predict that the expedition will fail in the accomplishment of its object, and it will be well if no disaster follows failure. However, *adieu*! Whether the Mounted Police reach the Belly River and return to their winter quarters at Fort Ellice in safety, or whether they succumb to the hardships and privations they are now enduring, and are frozen up in the inhospitable wilderness, a grave responsibility will rest upon those who have sent them upon a perilous errand without due preparation, without experienced leaders, and without support in case of disaster.—*Toronto Mail*.

JAPAN PREPARED FOR WAR.

SAN FRANCISCO, Oct. 21st.—The steamer Japan brings Yokohama dates to September 29.

The largest review of troops yet seen in Yeddo took place on the 19th in one of the suburbs of Yeddo. Some 10,000 infantry, artillery, and cavalry were inspected by the Mikado and his uncle.

Affairs between Japan and China remain precisely as they were. Yokohama papers contain positive announcement of war, and equally positive announcements of a perfect understanding, all of which are unauthorized. The highest patriotic spirits is exhibited throughout the country. Nobles have offered a large part of their revenues to the Government; the populace of every province are forming into volunteer regiments and the mercantile class has expressed its desire to serve both by contributions and in the field in case war should be declared.

The Mikado gave a breakfast on the 22nd inst. to all foreign diplomats at his own residence. This was the first entertainment at which the sovereign has freely mingled with foreign guests, and received them at his table.

General Garibaldi has accepted the nomination as candidate for Parliament from Rome. It is stipulated that he is to attend the Chamber only when he thinks his presence necessary.

DEMOCRITUS AT BELFAST.

(See Report of Professor Tyndall's Inaugural Discourse to the British Association.)

(From Punch)

Tyndall, high-perched on Speculation's summit,
May drop his sound-line in Nature's ocean,
But that great deep has depths beyond his plummet.
The springs of law and life, mind, matter, and motion,

Democritus imagined that the soul
Was made of atoms, sober, smooth, and fier;
Plato conceived it as a radiant whole—
A heavenly unit baffling man's enquiry.

Indolent Gods, immeasurably bored,
Besound the blast of Boreas and Eurus,
Too lazy man to punish or reward,
So much was the Heaven conceived by Epicurus.

If, as the wide observant Darwin dreams,
Man be development of the Aspidian,
Methinks his great feeds and poetic dreams
Scarcely square with his molluscous pre-meridian.

But, even as Milton's demons, problem tossed,
When they had set their Maker at defiance,
Still "found no end, in wandering mazes lost,"
Splits it with our modern men of science.

Still in the "Open Sesame" of Law,
Life's master-key professing to deliver,
But meeting with deaf-ear or scorn-clench jaw,
Our question "Doth not law imply law giver?"

Between the Garden and the Portico,
Thou, vacillating servant, often fittest,
And when we seek the source of law to know,
Giv'st us a phrase, "survival of the fittest."

Pray who may be the fittest to survive,
The spark of thought for coming time to kindle
The sacred fire of science keep alive?—
Plato, Agassiz, Humboldt, Huxley, Tyndall?

If Tyndall's last ward be indeed the last—
Of Hope and Faith hence with each rag and tatter
A black cloud shrouds our future as our past;
Matter, the wise man's God: the Crowd's—no Matter.

TRIAL OF THE SCREW FRIGATE RALEIGH.

The unarmored screw frigate *Raleigh*, 22 guns, 4780 tons displacement, 6000 indicated horse power of engines, Captain G. Tryon, C.B., shortened in cable and got up steam in her boilers at Spithead on Tuesday in readiness to enter upon her trial of six hours' continuous steaming at full power, but the trial was deferred owing to the violence of the weather, a hard south westerly gale prevailing in the Channel. It was decided, however, that the trial should be made on the following day, whatever might be the condition of the weather, and cable was therefore shortened again into three shackles on Wednesday morning by breakfast time, and steam was again got up in the boilers in readiness for the day's work. Nixon's steam navigation coal was to be burnt in the furnaces, and as there was considerable delay in receiving the requisite quantity of coal from the shore, it waited largely half an hour to noon before the *Raleigh* could weigh her anchor to steam out south-east from Spithead for the Channel to commence her trial. Consequently it was half an hour after twelve before she could actually begin the six hours' steaming. Captain Waddilove, as the officer in command of the reserve at Portsmouth, had the official conduct of the trial, with Captain Tryon assisted by a staff of naval engineers and superior officers, latter including Mr. Bannister, from the office of the engineer-in-chief at the Admiralty; Mr. Oliver, chief inspector of machinery afloat to the Portsmouth Steam Reserve; Mr. Durston, representing the Factory Department of Portsmouth Dockyard, the Shipwright Department, &c. The wind was strong at a force,

according to naval code, of about four to five from S.W. to W. When abreast of the Head of Dúnnoose, at the back of the Isle of Wight, the frigate was started on her three hours' outward steaming on a Westerly South course, bringing the wind nearly right ahead. Returns were made of the work of the engines every half hour; the principal items in which score as follows:—first half hour indicated horse power 6009.84; revolutions of the engines per minute 69.9; mean steam pressure from diagram, 18.75; second half hour indicated horse power, 5477.11; revolutions of engines per minute 68.92; mean steam pressure, 18.75; third half hour indicated horse power, 5771.58; revolutions of engines per minute 68.10; mean steam pressure, 18.9; fourth half hour indicated horse power, 5675.44; revolutions of engines per minute, 68.53; mean steam pressure, 19.65; fifth half hour indicated horse power, 5833.22; revolutions of engines per minute, 9.03; mean steam pressure, 20.05; sixth half hour indicated horse power, 5657.27; revolutions of engines per minute, 68.67; mean steam pressure, 19.65. As soon as the outward course had been accomplished by the completion of the sixth half hours' steaming, the ship's course was reversed, and her head laid on the back track for Spithead, the wind and sea being then brought nearly right aft. The home-ward steaming finishing the trial was concluded when the frigate had arrived off Sandown Bay, in steaming in from the Channel for Spithead. The results of the six half hours' work homeward were—seventh half hour indicated horse power, 5649.35; revolution of engines per minute, 69.63; mean steam pressure, 19.24; eighth half hour indicated horse power, 5362.47; revolutions of engines per minute, 70.43; mean steam pressure, 19.75; ninth half hour indicated horse power, 5877.35; revolutions of engines per minute, 58.8; mean steam pressure, 18.2; tenth half hour indicated horse power, 5219.30; revolutions of engines per minute, 68.06; mean steam pressure, 18.45; eleventh half hour indicated horse power, 5372.17; revolutions of engines per minute, 68.63; mean steam pressure, 18.6; twelfth half hour indicated horse power, 4930.24; revolutions of engines per minute, 67.23; mean steam pressure, 17.4. The results were considered most satisfactory by the officers conducting the trial. In the three hours' steaming outward and against wind and sea, the common log gave the frigate an average speed of thirteen knots an hour. In steaming back before the wind and sea, the patent log from four to five p. m. gave the ship a speed of 14½ knots per hour, but the figures require verification at the measured mile. The engines which are from the factory of Messrs. Humphreys, Tennant, and Co., of London, worked without a fault throughout the trial. The fires were attended by seven stokers from the Portsmouth Steam Reserve. Rumours, if not exactly disquieting, yet certainly not too favourable, have been in circulation for some time respecting the *Raleigh*, and on the 31st of July last, Captain Bedford Pim, the Conservative member for Gravesend, from his place in the House of Commons, put some questions on the subject to the First Lord of the Admiralty, to which Mr. Hunt replied that the *Raleigh* had received 180 tons of ballast on board without any inconvenience being occasioned by its stowage, and that the frigate possessed the required stability. Changes had been made in her while she was being built, and her armament had been increased very much in weight, and the consequence then was that she drew 16in. more

water than she was originally intended to draw, but Mr. Reed was not responsible for any changes made in his design of the ship. Mr. Hunt spoke according to the statements given in by his professional adviser, and pretty correctly described the position of affairs in the *Raleigh* at that time, but Captain Pim's questions were no doubt intended to deal more in detail with the changes made in the design of the frigate while she was building, the cause of the ballasting and the change made in her armament, as well as the precise conditions under which she would eventually go to sea with all her weight on board. It is understood to have been the original intention to place a certain quantity of ballast in the bottom of the ship, but from the increase in the weight of material over the estimated weight during the time she was building, and the increased weight given by the change of her main deck armament from fourteen converted 64-pounder guns of 71cwt. each, for fourteen of the 115-pounder guns of 90cwt. each, the ship was found necessarily deeper in the water than was wished for, and it was decided at the time not to put the ballast on board. Some time afterwards, however, when the frigate was lying in the river, commissioned, between Chatham and Sheerness, she exhibited such unmistakable signs of "crankness" that she was taken into the steam basin at Chatham, and there "inclined" by the Admiralty officials to obtain the exact angles of her stability. These angles, on being subsequently worked out, were found to be not quite so satisfactory as could have been wished. Looking upon the ship simply as a gun platform, the old proposition for ballasting the ship was again resorted to, and some 180 tons, as Mr. Hunt states, were put on board. Now the result of all these alterations and additions of weight put on board has been to give the *Raleigh* as nearly as possible the increased immersion mentioned by Captain Pim. Her draught of water when she got under way from Spithead for her six hours' trial on Wednesday was 21ft. 11in. forward and 24ft. 10in. aft. A mean draught of 23ft. 4in., with fifty tons weight in water and stores, yet to be taken on board. Her original mean draught, as designed by Mr. Reed, was 21ft. 6in., but Mr. Reed designed the *Raleigh* as an unarmored frigate, to have an exceptional rate of speed, and to carry a few only of the largest armour piercing guns that could be carried and worked on board. Now she undoubtedly is a swift ship, but not so swift as she was intended to be; and instead of a few large armour piercing guns she carries a large number of weak shell guns. With two exceptions only, the *Raleigh* has been tried at the Maplin Sands measured mile for speed, but she was tried at her original designed draught of of water, it being the engine contractor's trial, a mean of 21ft. 6in., and therefore about 2ft. less than her draught. The trial was made on the 2nd of April last, and a mean speed with full boiler power was attained of 15.503 knots per hour, half boiler power giving her a speed of 13.455 knots per hour. The engines under full boiler power indicated 6157 horse, or 157 horse in excess of the power contracted for. The engines drove a "Hirsch" propeller of two blades after leaving the Medway, and during her passage from the Nore to Spithead this screw became damaged, and has been replaced, at Portsmouth, by another of the same kind, but with greater strength in the two blades near their junctions with the boss. The present armament of the *Raleigh* is

arranged on the following plan:—Upper deck.—Two 12 ton 9-inch revolving guns, mounted one under the fore-castle and one under the dromi-poop. These guns throw 250lb. shot and shell, with a charge of 50lb. of pebble powder. The projectiles have "chilled heads," are of course armour piercing, and have an initial velocity of 1425ft. The energy of the shot per inch on its circumference in foot tons is 124 tons at the muzzle of the gun, and ninety four at a distance of 1000 yards; bursting charge of shells, 18-5lb. The *Raleigh* also carries four converted 71cwt. 64-pounder guns, two side guns, and two as chasos. The shells for these guns are, as the designation of the gun implies, of 64lb. weight. Each of the powder charges is only 8lb. of rifle large-grain powder as full charge, and 6lb. as the reduced or ordinary charge. The shells have a bursting charge of 7lb., and the highest initial velocity obtainable is 1170ft. These 64 pounders are built up from the carcass of an 8-inch cast iron gun bored out and fitted with a steel tube. They are useful weapons for light shell work mounted on a ship's upper deck, as supplementing heavy guns, but for no other purpose. Colonel Fisher, R.E., recently described at Shoeburyness the 64-pounder as being a good shell gun for land service with shell up to 2000 yards, but as being useless as a shot gun. Main deck.—Two 64 pounders as chasos-guns, and fourteen of the n-w pattern—115 pounder 7-inch 4½-ton shell guns. The 64-pounders we have already described as part armament of the upper deck. The 90cwt. 115 pounder shell gun is a copy, reduced 2 tons in weight, of the smallest of our navy armour piercing guns, the 6½ ton 7-inch gun, which fires chilled shot and shell with a 30lb charge of pebble powder at an initial velocity of 1525ft. The *Raleigh's* 7-inch guns fire common shell only with a full charge of 14lb. of rifle large grain powder, and a reduced or ordinary charge of 10lb. The greatest initial velocity is calculated at 1216ft., but it is doubtful whether the shells in their flight reach even this comparatively low figure. The total weight of the guns, with their carriages and slides, carried by the *Raleigh* is—guns, 108 tons 16cwt. 1qr. The change in the maindeck armament from fourteen 71cwt. 64 pounders to fourteen 90cwt. 7 inch 115 pounders has given an increased weight of nearly 39 tons. The *Raleigh*, like the other frigates of the group to which she belongs—the *Inconstant* and the *Shah*—is a perfectly built iron ship, divided internally into water tight compartments, and with an outer casing of double wood planking, the inner skin of wood planking being lapped on to the iron hull with iron screws, and the outer skin on to the inner wood skin with joints broken. On this outer wood skin is nailed the copper sheathing of the hull below the lead line. The consumption of coal averaged 10 2/3 tons per hour. The *Raleigh* is fitted with three coal ports on each side—an idea imported from America—opening into shoots on the lower deck which lead direct into the bunkers below—a very excellent arrangement for several reasons. She, however, has no steam capstan or steam steering apparatus. It was nearly 8 p.m., before the *Raleigh* anchored at Spithead, on her return from the trial.

MILITARY BALLOON EXPERIMENTS.

The experimental balloon ascent from Woolwich Arsenal took place on Saturday afternoon under very favorable circumstances. The strong westerly winds which had prevailed for a week previously, and rendered an ascent out of the question, especially for the purpose in view, had quite abated, and there was almost a dead calm, the best possible conditions under which a trial could have been made. The apparatus to be tested was, as already briefly explained, the invention of Mr. C.A. Bowdler, who hoped by its means to accomplish that which had long been a desideratum with scientific aeronauts, to steer the balloon in the air at an angle by deviation more or less deflecting from the direction of the wind. Major Beaumont, the president of the Army Balloon Committee, was authorized to represent the War office in the ascent. Major Beaumont is an officer of the Royal Engineers, and one of the members of Parliament for Durham. For many years he has applied himself to the science of ballooning, and has made numerous ascents, several of which has been made with Mr. Coxwell, while he has even extended his experience to the use of ballooning in actual warfare, and witnessed from the skies a battle before Richmond during the civil war in America. He may, therefore, be safely pronounced the most competent individual to have conducted the experiment. The balloon employed was a nearly new one, in which Mr. Coxwell has made three previous ascents, and it has been christened the "City of York" by the lady mayoress of that city. Its height, independent of the car, is eighty feet, and it contained, when inflated, 60,000 cubic feet of gas, so that it is a large balloon—too large, the inventor thought, for a fair trial of his steering apparatus. As, however, it was necessary to accommodate four persons and same machinery in the car, it was necessary to have a large balloon, and Mr. Bowdler, sanguine of success, simply stipulated that any results he might obtain should be reckoned slightly above their value in consequence of his being at this disadvantage. At three o'clock, the hour fixed for the experiments, the balloon was fully inflated, and there were assembled a large number of spectators, among whom were General D'Aguilar, commandant of Woolwich Garrison, General Sir J. Lintorn Simmons, governor of the Royal Military Academy; Sir John Mayron Wilson, Bart., General Philpotts, R.A., General Benn, R.A., the Hon. Colonel Gage, R.H.A.; Colonel Wolsey, R.A., Colonel Field, superintendent of the Royal Carriage Department; Major Markham, R.H.A.; Captain J.O. Browne, R.A.; Captains Noble and Jones, of the Ordnance Select Committee, Captain Owens, Royal Gun Factories, and many other Gentlemen connected with the scientific branches of the army or the manufacturing departments. The four passengers in the balloon were Major Beaumont, Mr. Coxwell, Mr. Bowdler, and a sapper, Sergeant T. Murray, to assist in working the steering machinery. This was fixed to the car in a few minutes. A tall frame of wood was lashed inside, containing a few small cog wheels and a common crank handle, while outside and above the car were fixed in connection with it two fans or screw propellers, precisely like the screw of a ship, and made apparently of tin or zinc. The simple nature of the contrivance and its immense disproportion to the balloon, which towered above it, suggests a very general doubt whether it could have

any influence or control over the course which the balloon must take, if left free to sail before the wind; and opinions were expressed by those who have studied the question that the object aimed at can never be attained until some agency more potent than manual power can be carried with the balloon—some engine capable of driving an arrangement of fans a high speed, but weighing only a few pounds. Mr. Bowdler's apparatus was but 3ft in diameter, and its rate of motion was but twelve or fourteen revolutions per second. Delome's apparatus, designed by the French naval architect, is to have a screw 16 feet high, and a much more rapid speed is calculated upon, but it is difficult to see how it can be obtained, except by largely augmenting the motive power. The second screw in Mr. Bowdler's machine was fixed vertically just below the other, and with this he proposed to raise and depress the balloon, and it was decided to try this first. Major Beaumont, mounted in the rigging, took command, and Mr. Coxwell, by a careful expenditure of ballast, got his balloon, which was held captive by a guy rope, to a nice balance about 20 feet from the ground. The major gave the order, and the inventor and his soldier assistant worked vigorously at the crank, while the vertical fan spun round, but no other effect was produced, the balloon neither rising nor falling, to all appearance, a single inch. Mr. Bowdler, somewhat disconcerted, confessed that his contrivance had not shown the power he expected, but Major Beaumont suggested that perhaps he had turned the handle the wrong way, and proposed another trial. The balloon was brought to a balance again, this time close to the ground, and when the machinery was set going it slowly, but unmistakably, began to rise, and rose until it was checked by the guy rope about 40 ft. from the ground. And, what was even more convincing, as soon as the crank ceased to work, the balloon began to descend, and descended till it touched the earth. Mr. Coxwell was satisfied at once that the screw had lifted the balloon, but the Government representative, perched up on the notting and taking notes, was not so sure, and ordered the experiment to be repeated, which was done several times, and always with the same result. The balloon rose when the fan was at work, sometimes very slowly, but it always came down when the apparatus stopped. Major Beaumont having formed his own conclusion upon this part of the trial, the order was given to release the balloon in order to try the propeller in the higher air. It ascended almost perpendicularly, the Major still in the shrouds, and Mr. Coxwell standing on the edge of the car. The spectators below were unable to see what effect the steering apparatus had, as the balloon soon attained a considerable altitude and disappeared in misty clouds as it wafted away north eastward.

After the balloon had ascended about 1000ft. the steering apparatus was tried, but failed to have any apparent effect on the course of the balloon, but it developed one quality which was not expected, and which may or may not be of value. It enabled the aeronaut to make the balloon revolve either to the right or to the left, according to the way in which they worked it; but in the opinion of the Government officer it failed to fulfil its original object. After making a low dip over the Essex marshes, by letting out gas and repeating the trial, some ballast was discharged, and the balloon ascended to an altitude of two miles

PREPARING—The General Elections in the Province of Ontario, are expected to take place early in Spring; and already the politicians on both sides are bestirring themselves and making ready for a fray.

The sky being hazy, this carried them through a thick cloud, which quite hid the earth from sight, and gave the voyagers a splendid view of the sun's effect upon the upper surface of the clouds. After enjoying this for a while, they opened the valve and dropped down through the clouds, alighting safely at seven o'clock on the farm of Mr. Morris, at Cray's Hill, nine miles from Romford, and four from Pitea Station, on the Tilbury and Southend Line.

Mr. Bowdler has written a letter to the following effect:—

"The balloon not rising in the first experiment was in consequence of the grapnel dragging on the ground. When properly balanced it rose each time the fan worked. It was not proposed to work the fan 800 revolutions per minute; only fourteen to one of the winch, or about 500 revolutions per minute, which it did.

"No part of the apparatus broke down in this experiment; it went up with the balloon quite perfect. There was no unexpected quality developed. The balloon was turned purposely to the right and then to the left by the small disc or rudder (which has not a superficial surface of one square yard) by the force of air produced by the propelling fan, according as the rudder was turned. The force of the propelling fan was, therefore, very evident.

"The machine is purposely adapted for a balloon of 12,000 feet of hydrogen gas. It was made twelve months ago for a small balloon of Mr. Coxwell's. The latter was, however, found too small to carry up the necessary weight, and the trial was deferred. On the Government consenting to supply the gas, the only balloon available was the City of York, of 60,000. I expressed previously to the trial that I expected but slight results with so large a balloon.

"Major Beaumont said he could make a fan, about eight feet in diameter, to be worked by four or six men in the car, that would propel the balloon eight miles an hour. If so, my principal is correct."

The Military Balloon Committee is at present directing its attention more especially to the best method of inflating a balloon on the field of battle—an operation which is attended with considerable difficulty. It has been decided that war balloons may be employed as a valuable adjunct to an army in the field. At a height of 200 yards, the entire landscape over a radius of about forty miles can be seen on a clear day, and the general in command would, therefore, find a balloon of great service to do the work of scouts, and to ascertain the position and movements of the enemy, on the other side of a hill, wood, or town. During an action captive balloons may be employed in like manner to observe and report by signal or otherwise the manœuvres of the enemy, and the character of the country for many miles in advance can be fairly ascertained.

THE DEVASTATION TURRET SHIP.

A writer in *Chambers' Journal* gives an interesting sketch of a visit to the Devastation. While investigating the upper part of the vessel he suddenly found the side spin round with enormous speed. An officer turned a small wheel with his finger and thumb, and the massive turret, coated with enormous plates of iron, the two thirty-five ton guns and their carriages, and some twenty men, were sent round as easily as a boy can twist a teetotum. The boat the visitor arrived in was hoisted by steam, the

turrets were turned by steam, the guns were raised or lowered by steam, the ship is steered and ventilated by steam, the cable is worked by steam, and the vessel, of course, is moved by steam. The writer was on board during firing exercise at a target. "A terrific shock to our whole system occurred, a deafening roar, and then whirr r r, a shot, looking like a sea bird, speeds just over the target, just touches the sea, sends up a jet of spray a hundred feet in the air, grander-looking than the largest fountain at Sydenham, and whiter than driven snow. On rushes the shot, its wicked, vicious noise distinctly audible, and again it strikes the sea, after a bound of about two thousand yards. Another column of water rises in the air, and slowly descends in spray. A third fountain arises as the shot thus 'ducks and drakes' it along the sea; and then the iron missile, that weighs a third of a ton, having lost its velocity, sinks beneath the surface, and is no more seen."

After several rounds had been discharged, a new method of firing was tried—namely, firing both guns in a turret by electricity. The captain or officer intimates that there will be electric firing of one, two, or all the guns; these guns are loaded and their vents connected electrically with the wires in the iron building on deck. Either by steering, or by the movements of the turrets, the guns are kept trained on the target. The officer who is to fire stands watching the distant horizon, and when all is ready, and all clear he presses down a small connector, and the electric current immediately ignites the tube, and discharges the gun or guns. We had already heard two guns fired quickly, one after the other, we were now to experience the result of two guns being fired simultaneously. We stood anxiously watching the target, and in an instant there was the same concussion of the deck, the same 'jumpy' feeling all over us, and away went the two shot, racing with each other, striking the water, and sending up their splendid fountains, and one shot curving round to the right, the other to the left." The four monster guns were afterwards discharged at the same instant. The visitor noted that the Devastation, while sailing, tolled most palpably, although there was very little sea on. Still she is managed very more easily; she is turned in a circle of not more than two hundred and fifty yards in diameter, and obeys her helm like the puniest yacht. The vessel requires seventy stokers, and uses about twenty four tons of coal per day for a quiet day's work. If working up to full power all day, she consumes one hundred and fifty tons of coal, and she can work up to five thousand five hundred horse power.

QU'APPELLE ESCORT.

The detachment of troops from the garrison at Fort Garry which were detailed for service at the Qu'Appelle Treaty, under the command of Lt.-Col. Osborne Smith, D. A. G., arrived here on Sunday last, after a march of three hundred and fifty miles, which was made in sixteen days and a half.

Just before the force reached the new barracks the notes of the band warned their comrades in quarters of the near approach of the force. When every one not on duty turned out to welcome them which was done by such cheers as only British soldiers know how to give upon such occasions. As the men marched into the barrack square their appearance denoted that they had been on

service, every one being well bronzed by exposure to the sun and the whole force marching with that steady step that tells on a long march. The force was halted on the parade ground of the barracks when they were addressed by Lt.-Col. Osborne Smith, who complimented them on their good conduct and the manner in which they had performed so lengthy a march, that it spoke well for them for the future when he could say that no man had been in rear of the rear guard, and that no crimes against military discipline had been committed or anything that could demand the slightest punishment. All these showed that Canada might well be proud of the soldiers composing her army.

The men were then dismissed to their quarters where they were again welcomed by their brethren in arms, who had prepared for them a good and substantial dinner at which those who had been compelled to stay at home acted the parts of hosts making the bronzed lads feel that they were really at home, were pleasant smiles and genial companionship awaited all who had done their duty so well.

The average rate of marching from Qu'Appelle is somewhat over twenty miles per day. For steady and continuous marching we doubt if this can be beaten.

All the force are in excellent health and full of spirits as a long course of physical exercise under a clear atmosphere could make them.—*Manitoba Gazette*.

In reference to the camp of instruction which the French Government proposes to create in the immediate neighborhood of Compiègne, it is not uninteresting to note that the ground selected by the present Minister of War has already been utilized for the same purpose. Nearly 200 years ago, Louis XIV., wishing to give the young Duc De Bourgogne some insight into military matters, gave orders for the execution of a series of manœuvres at Compiègne and 50,000 men were collected there upon the command of the Marshal Duc De Boufflers. The King, accompanied by King James II., of England, and a very numerous retinue, paid a visit to the "Camp of Coudun," as it was termed, and contemporary chroniclers relate that he was received with magnificent hospitality by the Marshal De Boufflers. Louis XIV., after reviewing the troops, dined with the Marshal, and found the fare so good that he declared "he had never eaten so much before;" while the Marshal himself, if we may trust some complete composed on the occasion by the young Duc De Bourgogne, had quite as much wine as was good for him. It cannot be a matter for surprise, if with such a reputation for hospitality, the Commander-in-Chief received the visits of many military men from all parts of Europe, and it is perhaps excusable under the circumstances, if the troops did not get through much hard work. Another camp of instruction was formed near Compiègne in 1847, when some 15,000 troops were placed under the command of the Duc De Nemours. Imitating the example of his royal predecessor, Louis Philippe and several members of his family paid a visit to the camp, but his Majesty, with a due regard to economy, did not expect his son to renew the hospitality of the Duc De Boufflers, and the only "entertainment" provided was a theatrical representation at the Chateau de Compiègne.