Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- ☑ Bound with other material/ Relié avec d'autres documents
- ☑ Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- ☐ Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- ☐ Coloured pages/ Pages de couleur
- ☐ Pages damaged/ Pages endommagées
- ☐ Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached/ Pages détachées
- ☑ Showthrough/ Transparence
- ☑ Quality of print varies/ Qualité inégale de l'impression
- ☑ Continuous pagination/ Pagination continue
- ☐ Includes index(es)/ Comprend un (des) index

Title on header taken from:/ Le titre de l'en-tête provient:

- ☐ Title page of issue/ Page de titre de la livraison
- ☐ Caption of issue/ Titre de départ de la livraison
- ☐ Masthead/ Générique (périodiques) de la livraison

☐ Additional comments:/ Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐

The Volunteer Review

AND MILITARY AND NAVAL GAZETTE.

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

VOL. VI. OTTAWA, (CANADA,) MONDAY, JANUARY 8, 1872. No. 2.

We are indebted to our gallant and talented correspondent "G.W.G." for the following able article on the history of the Canadian Army:—

The close of the year 1871 forms an epoch in the history of the Army of Canada, at which it will not be amiss if we pause for an instant to contemplate what were its rudiments previous to the latter part of 1866; what it has become during the period which has elapsed since the end of that somewhat memorable year; and what are the reasonable hopes for its future, deducible from the progress made during the interval.

Previous to the month of September, 1866, less than twenty battalions bore a regimental organization. Before the end of that year above thirty more, identified with their counties, and bearing numbers and badges which we may well hope will become historical, were added to the list.

Although, therefore, Sir George Cartier's Militia Act did not come into operation for two years afterwards, the year 1866 may be taken as the epoch of inauguration of the National Army as it exists to day. The very perceptible steps which have been made since 1866 towards both system and efficiency have, however, mostly been effected in the last three years of that period.

Whatever may be the varieties of individual opinion as to the merits or demerits of the Act, or as to the conduct of the organization for which, at all events, it has enough elasticity to give scope, we cannot but think that a comparison of the past with the present will tend to mitigate those fears and forebodings as to our immediate military future, which are again beginning to have weight with some zealous officers of the Force.

We know that time is necessary to perfect an elaborate structure, and our experience of what has already been done leaves us in no doubt as to the certainty of future progress.

If we compare the scene of confusion and delay which pervaded the Toronto Drill Shed when the host of independent companies which then formed the bulk of the Volunteer Force, poured in, in June 1866, for the defence of their country against the Fenians, with the orderly assemblage of far larger masses in the camps of 1871—the men proud of their regiments, their colors, their mottos, and their badges—pleased to meet their comrades from distant parts of their counties—knowing, and known by, their officers—both men and officers with more advanced ideas of discipline, and greater knowledge of duty—with ample camp equipments, and with Quartermasters up to their work: if we compare the thoroughness of their drill (however inefficient in amount) now performed in camp, with the desultory and often inefficient instruction formerly given at Company Head-Quarters, we cannot but discern the substitution of an "Army" for a chaos of isolated Companies.

Within the period we have mentioned two Expeditions have been fitted out for probable hostilities in a distant Province, and it is but justice to say that the equipment of both reflects credit on the Head Quarters' Staff: while it is satisfactory to know that the second—organized in a week, entirely by Canadian officers, has achieved with brilliant success, a task which seems to have been attended with hardships exceeding those of the first.

Within the present year the scientific instruction of that important branch of the service—the artillery, has been provided for on a satisfactory basis, and we trust to see a Staff College inaugurated before the year is out.

That much has yet to be done—that some fundamental reforms are imperatively demanded, is not sought to be denied; but we will not here occupy time or space by expatiating on them or even indicating them, because the letters of "Centurion" are before the readers of the VOLUNTEER REVIEW, and the talented officer who so signs himself has accomplished so complete a summary of, and so exhaustive a commentary upon, the amendments required, as to render unnecessary any other recommendation of them.

But even should reforms and improvements of organization not be accomplished quite so soon as we would gladly see them, let us remember that many of us have already, more than once since 1866, taken gloomy views of the prospects of the Force, and that time has, on each occasion, proved our fears to be more or less unfounded.

For instance, in 1867, "volunteering," to use a current, but objectionable term, fell absolutely flat. The Fenian excitement, and that of the demonstration of the Thorald camp, had passed away, and not only were the crokers open-mouthed in pronouncing the Active Force to be in a state of atrophy, but many who were resolute to remain in it, and support it, as long as it would hold together, began to fear that it was doomed.

In 1868 many Battalions met at their Head Quarters, and, although, there was a good deal of growling, and it was very generally supposed that the coming into operation of the new Militia Act, would deplete the ranks of nearly all the old hands, somehow or other large numbers signed the new muster-rolls, and the establishment of the camp system in 1869 seemed, after allowing for all drawbacks, to have infused new life into the Force.

We are now warned that the completion of the first triennial period of service under the Act will be signal for the retirement of the majority of members who have served that time, and that, unless the Act is amended the muster of next year will show a lamentable falling off.

Judging from the past it would seem not improbable that such expectations might, under any circumstances, be falsified, but, in view of the unjust pressure of the present purely voluntary system, it is to be earnestly hoped that the people of Canada will have plainly set before them the primary and imperative obligation of military service.

This will be the more necessary from the probability that the Manitoba fiasco will be the last act of the Fenian folly and wickedness; and, should it prove to be so, the rabid economists will be prompt to urge the absence of present necessity for expenditure for military purposes. In fact we really owe a debt of gratitude to our ruffinly friends; for their playful little incursions have done much to disturb the stolid serenity, and scare the obstructiveness of the dollar worshippers. It can scarcely be too often urged that the nation which, in peace prepares for war, is precisely the nation which is likely to re-

main at peace, and it will require all the patriotism we have, to enable us to hold our own a few years hence. But, fairly considered, the progress of the last five years in the organization of our National Army is full of promise for the future, and we doubt not that the present year will see such measures of improvement as to satisfy the most exacting that as much as possible has been done within a given time. Let us hope, and persevere, and let the officers of the Force realize fully that they are the officers of an "Army"—not of a Militia and Volunteer Force, in the usual acceptation of the words.

It may seem a trivial point to urge in this connection, but we think that more importance should be attached to the, at least, yearly issue of a Canadian "Army List." A feeling of brotherly connection, even where personally unknown, as well as of pride in the service to which they belong, is fostered more than is generally thought, among men who find their names associated year after year in such a publication, but it should be differently arranged to those hitherto published, and it would be a discredit to officers if a proper and reliable List should fail to the ground for want of patronage at a sufficient price.

CHEESEPARING BY THE GLADSTONE GOVERNMENT.—The following extract from an English religious newspaper, the *Rock*, furnishes a brilliant example of economy as understood by the Gladstone Government, the slaves of the manufacturers, who (not the aristocracy) are the real grinders of the faces of the British poor.

The "Royal Military Asylum," Chelsea, is, as is well known to Londoners, an institution founded by the Duke of York, for the education of 500 orphans of soldiers. It is admirably conducted on military principles, and is the one thing that sheds a lustre on the memory of the somewhat unscrupulous commander-in-chief. About 50 per cent of the pupils enter the army on the completion of their term of scholarship:—

"Wishing to see the boys at public worship, we went last Sunday to the School Church—a very plain structure at the North West corner of the grounds. A stained-glass window over the Communion Table is the only particle of ornament it possesses. The north gallery was occupied by the servants of the asylum, who looked quite smart in their scarlet gowns and blue ribboned bonnets, and the bright uniforms of the drill sergeants and other officers were conspicuous in the midst of the few civilians who were present. At a few minutes before eleven, the lively strains of the brass band playing a march were heard in the distance, and presently the little soldiers made their appearance with the jaunty step imparted by the music marking the progress to their respective seats. We were very much surprised to find them dressed in short loose coats of rough blue material, which detracted very much from their usual picturesque appearance. We missed the little red jackets and thought the children looked more like little sailors than soldiers. The red jackets are now only worn on fine days, the economical arrangements of the Government not having spared even those little boys. As some little saving could be effected, appearances were disregarded."

THE WOOLWICH INFANT.

The trials of the 35-ton gun to determine the size of the bore and some other details having passed the preliminary stage, the question arose as to the most suitable carriage upon which to mount it for naval purposes, the gun having been especially designed for the armament of the new ironclads. Arrangements were therefore made for the gun to be fired on Thursday week at the proof butts adjoining the Royal Arsenal from a carriage constructed for H. M. S. ship *Decastation*, armor-plated turret-ship, and a platform erected for the purpose. This carriage is massively built of wrought-iron plates, having one bracket considerably longer than the other, as it is designed to put two 35-tons into each turret, and the long bracket on one gun carriage will correspond to the same one on the opposite side of the other, so as to suit the shape of the platform upon which the guns recoil. Considerable changes have been made in the "saddle" and other apparatus for effecting the "muzzle-pivoting" arrangements. It was essential that the saddle itself, upon which the entire weight of the gun depends, should be constructed in the strongest possible manner. As, however, it was found impossible to forge so large a mass in one piece, the jaws of the saddle and the trunnion blocks have been manufactured of cast steel. In the sides of the brackets, and directly underneath the trunnions of the gun, are huge wrought iron slots for the saddle to rest on. These are removable at pleasure after the weight of the gun has been lifted off them, and smaller ones can be inserted in their places, thus lowering the axis of the trunnions. The saddle itself is raised or lowered by an hydraulic press immediately beneath its centre. Another hydraulic press is situated below the rear of the brackets, which elevates or depresses them, thus raising or lowering the breech of the gun. Hence it will be seen that the axis of trunnions and the breech of the gun can be elevated or depressed to any required angle, while the muzzle of the gun remains in the same constant position. This is the principle of "muzzle-pivoting," and through its agency we are enable to dispense with the necessity of having large portholes. Connected with the rear rollers of the carriages are two eccentrics and an endless chain, by which the brackets when elevated in rear are thrown entirely upon the rollers, enabling the gun to be brought forward after its recoil with the greatest possible ease. The slope of the platform on board ship will be three degrees. The carriage will be fitted with Scott's compressors to both brackets, in order to check the recoil, which it is anticipated, will not exceed six or eight feet. This is a most cleverly contrived apparatus. A stout bar of wrought iron in the shape of a horseshoe passes through the base of the bracket and round the platform slide, and by means of a hand wheel and screw grips tightly the compressor plates beneath the platform. For Thursday's experiments the carriage was mounted upon a steeply inclined wooden platform with iron "ways" having a buffer of wood attached beneath which would come in contact with an enormous block of timber connecting the slides at the summit of the platform in case the gun should attain that position in its recoil. This precaution, however, turned out to be quite unnecessary, for the "Infant" in its most violent struggles did not get more than 8 ft. up the inclined plane, which was at an angle of 8 degrees. A number of persons were assembled to witness the experiments. Sir David Wood, the Commandant of the Garrison, and all the heads of department in the Arsenal, together with many other officers holding various positions, anxiously watched the progress of affairs. The result of the firing was most satisfactory, both as regarded the behaviour of the gun and carriage. The initial velocity of the projectiles registered during the experiments was exceedingly good. With 115lb. of pebble powder (Waltham Abbey) 1284 feet in one second was obtained, while with 120lb. of the same material the high figure of 1322 was reached, being two feet in advance of any hitherto registered with this powder. It has not been decided that the calibre of the 35-ton gun is not to be increased over the 12 inches, the result of the series of experiments, which terminated about three weeks since, having been so entirely satisfactory to the committee.—*Broad Arrow.*

REPLY TO SIR CHARLES DILKE

The annual soiree of the members of the Mechanics' Institution of Halifax, England, was held on the 4th inst., in their hall which was densely crowded. The chair was taken by the Hon. Robert Lowe, Chancellor of the Exchequer. After the reading of the report and the distribution of certificates to the successful students, Mr. Lowe delivered a long address on 'Primary Education' embracing reference to current topics. Referring to Sir Charles Dilke's attack on royalty, he said:

A member of Parliament, of whom I have no desire to speak in terms of displeasure, has seen fit in the exercise of his duty to call the attention of a public meeting in the north of England to the manner in which the Government has dealt with the Civil List to the Royal Household, and to the private conduct of the Queen. I do not deny, and shall not take upon myself the duty of censuring that gentleman for bringing forward such things. It is a matter in his own discretion and judgement, but it happens that I am the person upon whom it devolves to answer for the department which administers the Civil List, and for myself I shall throw no obstacle in the way of a most searching investigation to any member of Parliament who may demand it in the proper manner, and to any member of Parliament who may seem fit to bring it forward in the proper quarter. The member I have referred to is one of whom I have some knowledge. I esteemed him as a man of promising abilities and I think it a pity he did not devote those abilities to what I conceive a better purpose. I may remark that I think his conduct deserves very severe censure. Having formed the opinion he had—and no doubt he has formed them conscientiously—it was his duty to raise the question in a proper place.

Of course it is easy to come before an audience not versed in the matters to be brought before them, and to create cheers by reading over a list of the quaint offices of the Royal household which had been handed down from reign to reign for centuries past. It is very easy to make strong, rash, and I will say unfounded statements before an audience in which no one was prepared to dispute the truth of these statements, or to make any reply. I submit that when such charges are to be deliberate

ly made before an audience, as he has recently, they ought only to be uttered after due notice of the same, so that information be received from the Ministers of the Crown on these matters. Notices of such statements being about to be made ought to be made in presence of those whose duty it is to answer and who are prepared to answer those charges. My explanation of these charges, I believe, will be most satisfactory to the public, and I will not fall into the error I have censured him for.

One thing more on this question I must mention, and I am ashamed to mention it; it is the statement that the Queen has never paid income tax. I say I am almost ashamed to take notice of such an observation, unfounded as it seems to me, that every one who knows what the Queen is will be able to acquit her with a moment's consideration. The Queen is no stranger in public—is no novice in Government. She has for four and-thirty years reigned over us, and maintained during that time a high, honorable, and stainless character. I really feel ashamed to say what I am going to say; that is that I have every reason to believe that all the promises made by the Queen have been fulfilled. I state to you being a person from whom such a statement would come with proper official authority, that Her Majesty has paid income tax. I am not going into details, but the sums thus paid by Her Majesty since the year 1842, when the promises were made were counted in hundreds, and thousands. (Applause) I have selected that as a simple instance, and if the honorable gentleman in question should bring it forward in the House I shall be most happy to give the fullest explanation, and I have no doubt the country will be satisfied with, as in other things that the Queen in her office has been high and honorable; and that Her Majesty has been true to herself and the worthy representative of all English people.

I should think it degrading myself if I were to take part in any discussion as to the respective merits of monarchy or republicanism. Politics are not speculative or metaphysical, but a practical and indicative science. The test of politics is what has answered or worked well. The English monarchy, which has existed since the time of William the Conqueror, has obtained for the English people more order connected with liberty than has been granted or been the privilege of any other people on earth. (Cheers) I do not misread the feelings of my countrymen when I say they will not discuss or be disposed to take into consideration the property of changing our constitution under which they have derived so many benefits which no other country in the world has been favored with or enjoyed. (Cheers.)

COLONIAL FORCES IN NEW ZEALAND.

An interesting report appears in the papers received by last mail from New Zealand, affording information as to the condition of the military force which has been raised for the defence of that colony to take the place of Imperial troops recently withdrawn. A capitation allowance is granted to all enrolled Volunteers who may qualify themselves as "efficient," consisting of £3 to cavalry and artillery, and £2 10s. to ordinary riflemen. The provision of this allowance has had a most satisfactory effect, for from a statement published by the Inspector of Militia and Volunteers, it appears that the proportion of the "efficients" to "enrolled" Volunteers, "has increased from fifty-one per cent. in 1869 to seventy-four per cent. in the present year." The encouragement given to the whole movement by the liberal grant of the Legislature towards the colonial prize-firing has also contributed to its success. "In June, 1870, the strength of the Volunteers in the colony was 5107, of which number 3811 qualified themselves for capitation allowance. On the 31st of March last there were 6568, of which number 4880 were efficient." Hence it would appear that New Zealand, at least possesses a very tolerable armed force and one which may be considered fully proportioned to the strength of its civil community; for the principal object in maintaining such an armed force and disciplined body is to protect life and property from the incursions of the hostile natives, and when these existed in far greater numbers than at present it was not deemed necessary to employ for their subjugation so large a proportion of Imperial troops as those now available in New Zealand.—*Broad Arrow*

THE "SESOSTRIAN SYSTEM" FOR RECRUITING.

When Sesostris, the renowned Egyptian monarch, was preparing for the invasion of Syria, he sought to assemble a mighty host composed, according to the historian Diodorus, of 600,000 foot, 24,000 horse, and 27,000 chariots. But, no doubt much to the indignation and surprise of the royal autocrat, he found himself opposed by an unexpected obstacle. His faithful subjects were far more intractable than he had at all anticipated, and, in short, very generally declined to enlist. In this delimma, he hit upon an expedient which may possibly be worthy of notice, even in the present day. He issued a royal proclamation, wherein he engaged to pay the private debts of every officer and soldier who would take service under him. The result of the experiment was such a rush to join his standards, that his forces were very soon recruited to the required extent. Now, as our Radical Ministers have proved themselves incompetent to keep up the regimental strength of the English Army, and have utterly failed in their recruiting efforts, we would respectfully suggest to them the adoption of the "Sesostrian system." It has the great advantage of a long established "precedent"—always so dear to the official mind. It was crowned with success, which no plan of their own has ever yet been; and it would doubtless be satisfactory to those who should volunteer their services. It is true the adoption of this system might add a million or so to the Army Estimates, but as nobody outside the War Office has any idea what they may amount to at present, this trifling addition would not excite much attention. Besides which, in the present flourishing state of the revenue, swelled as it will also be by the vigorous use of the system of surcharges now in operation, we hardly think that it would present any serious difficulty even to the economical mind of the present Chancellor of the Exchequer.—*Globe.*

THE WOOLWICH INFANT.

On Tuesday, when the last rounds were to be fired from the 35 ton gun at the proof butts, Royal Arsenal, Woolwich, previous to its removal to Shoeburyness for practice against the targets, a defect was discovered which will at least retard its progress for some time. It is well known that the Committee on Explosives has been making a series of experiments with the gun, in order to test the pressure exercised on the bore, and the velocity imparted to the projectile with various kinds of powder, and some days since a charge of 120lb. was fired which registered the extraordinary pressure of sixty-six tons on the square inch, the average pressure of that weight of ordinary gunpowder being something like thirty tons only, and scarcely ever exceeding forty tons. As usual after heavy firing, the gun was on Tuesday morning examined by taking impressions of the bore in gutta percha, when it was found that there was an incipient crack in the steel lining extending about four inches along one of the grooves. Several rounds have, however, been fired since the one which gave such exceptional pressure, and which, no doubt, caused the steel to give way, but no other injury appears to have resulted from it; and Colonel Campbell R. A., Superintendent of the Royal Gun Factories at the Royal Arsenal, Woolwich, was desirous to proceed with the firing at once, as would probably be done in action, when there would be no time for examination; but as the gun is now mounted on a valuable naval carriage, it is thought desirable to remove it first on to an ordinary sleigh, from which, as soon as the gun has been thoroughly inspected, it will be fired again. It would be a simple matter at once to repair the gun, by substituting a new steel tube, but it is considered of even more importance than the value of the gun to know how far it may be depended upon under any circumstance in which it is likely to be placed. The officers of the department are averse from the use of steel in any part of these large guns, owing to its brittle qualities; but no other material has been found hard enough to endure the friction of rifled projectiles, and its use as a mere lining appears, therefore, to be a necessity, the strength lying in the wrought-iron structure which surrounds it. The tensible strength of tempered steel is under fifty tons to the inch, and no surprise is therefore felt at the tube giving way under a pressure of sixty-six tons. This pressure is very remarkable, as the velocity which it gave, 1375 feet per second, is very little more than has been attained by other descriptions of powder, which have indicated only one-third of the pressure. Nevertheless, as guns are liable to be fired with powder of uncertain quality it is important to test this, the trial gun, under even the most disadvantageous conditions, and future experiments are looked forward to with increasing interest.—*Broad Arrow.*

One hundred and twenty million tons of coal were take out of the British coal fields last year, representing the exhaustion of a seam six feet thick, over an area of twenty thousand acres. It is manifest that at this rate of consumption any coal beds not practically limitless in extent must be exhausted within a term of years not difficult to compute. Even now the principal workings have been carried so far below the surface that the nation has begun to fear that the day when its coal mines shall be exhausted may not be far distant.

It is reported that the head-dress of the French army of the future will be the helmit, not on the model of the Prussian, but of a classic Roman shape, the express design of one of the most eminent French sculptors. The helm will be made of brass or steel, and like the regimental standards, in Louis Philippe's time, will be surmounted by a Gallic cock of the same metal, the ornament in the case of an officer being silver or gold, according to his rank.

ENGLISH AND FOREIGN ORDNANCE.

It curiously happens that just when we are engaged in discussing the consequence of the injury to the steel tube of our 35-ton gun, the particulars reach us of a far more serious accident which has befallen a large Krupp gun in Russia. The *Pall Mall Gazette* says :—"To take the English gun first. This gun has been used for the testing of various experimental powders, and for determining how far the service pebble powder is suitable for the very heavy charges now required. That the power is perfectly suitable for charges from 15 lb. or 20 lb. up to 90 lb. or 100 lb. ? That is a question towards the solution of which the experiments with the 35 ton gun have been directed. In the course of those experiments the gun has fired the following rounds :—With an 11 6 inch bore ; 4 rounds with 75 lb., 2 rounds with 100 lb., 16 rounds with 110 lb., 6 rounds with 115 lb.. 6 with 120 lb., and 1 with 130 lb. ; total, 35. After enlargement to a 12-inch bore ; 6 rounds with 100 lb., 13 rounds with 115 lb., 14 rounds with 120 lb. ; 33. Making a total of 68 rounds, composed as follows—4 rounds 75lb., 2 rounds 105lbs., 22 rounds 110lb., 19 rounds 115lb., 20 rounds 120lb., 1 round 130lb. The shot in each case weighed 700lb. The amount of powder consumed is thus 7635lb., or about 3¼tons. The weight of shot fired is 47,600lb., or over 21tons. At this point the gun was subjected by one round to the extraordinary internal pressure of 66 tons to the square inch. What happened ? The steel tube registered by a small crack the fact that it had been subjected to a strain greater than it could bear ; but the gun did not become unserviceable. It may be fired again and again with its injured steel tube ; or the split tube can be replaced with a sound one, and the gun will be as good as ever again. It is scarcely possible for a piece of ordnance to behave better than this gun has done. If you put upon metal of any description a heavier strain than it is calculated to bear, it must yield. The important point in the case of a gun is that it should not yield explosively—that it should give warning and admit of repair or renewal This is what the English gun has done, and this behaviour is characteristic of that English system of gun-building which Sir William Armstrong was the first to teach us how to apply.

"To turn to the Krupp gun. On the 29th September last an 11-inch steel Krupp gun exploded at Cronstadt at the first round when fired with a charge of 90.92 lb. English (or 100lb, Russian,) and a shot of 496. 54lb. English (or 550lb. Russian.) The muzzle of the gun burst into several pieces, the back part of the gun remaining on the carriage uninjured. Now, there are one or two points in connection with this gun which are worthy of special notice. In the first place, it cost as nearly as possible £6000—the cost of an English gun of the same calibre being about £3000. In the second place, these 11-inch Krupp guns are fully adopted in Russia. In the third place, we are driven to one of two conclusions—either that the Krupp guns are accepted by the Russian Government, and mounted on the works without being proved, or that proof is worthless as an indication of the strength and serviceability of the guns. And with regard to these conclusions we may, perhaps, venture to accept not one but both of them. It is quite in accordance with the whole system under which the Krupp guns obtained a footing in Russia that they should be introduced unproved. The system itself was practically unproved when it was adopted there ; and it is not surprising to find individual guns accepted on the same terms. And perhaps the Russian artillery officers have a suspicion that in the case of a steel gun no proof is of very much avail. They probably know—though they would perhaps be indisposed to admit at how great a cost they have acquired the knowledge—that an essential feature and radical fault of steel is in its uncertainty. The whole history of gunmaking abounds with examples of this. And therefore it may easily be understood that to test a gun which may resist one or two rounds triumphantly and explode at the third, is deemed superflous by those who have had experience with weapons of this material. And in view of this disastrous failure of one of the largest and most costly of the service Krupp guns—a gun embodying all the most recent improvements of construction, and confidentially recommended. just as the unhooped Krupp guns, which have since been abandoned, were confidently recommended in their day—in view of this failure, what becomes of the theory upon which one of the most eager partisans of the Krupp system (Captain von Dopplemair) has based his advocacy of those weapons? 'Ex uno disce omnes.' says Captain von Dopplemair. 'From the trial of one specimen (of steel guns) a judgment can be formed as to all guns of this description. Is this so ? If so, the heavy artillery of Russia must be in a thoroughly unsatisfactory condition. The failure of this gun has created the liveliest excitement among artillerists in Russia ;and the *Journal of St. Petersburg* contains an article from the pen. apparently, of Colonel Kolokolzoff, the superintendent of the Alexanderoffsky Factory. From that article we learn that the committee appointed to examine the gun, attributed the failure to 'a defect in the metal near to the muzzle.' If we accept this conclusion—and there is no reason why we should reject it—we are obliged to fall back on the question we have asked before. What is the proof worth to which these guns are subjected ? or are they subjected to no proof at all? Are they received on the Dopplemair theory ? Is one gun of a batch proved, and no more.

"It is worth while to observe that the failure in both the guns—English and Russian—has incurred in the steel part. In the case of the English gun no reproach attaches to the steel, which has been subjected to excessive strains. In the case of the Krupp gun the steel seems to be open to the reproach of having been defective, as the gun yielded at a strain far below what it should be capable of sustaining. This difference is characteristic of steel—thoroughly good and strong, and resisting in one gun, utterly worthless and unsafe in another. But there is another point to note. In the English gun the injury was at once arrested on reaching the wrought-iron coils, in which the strength of the gun resides. The Krupp gun having no wrought iron coils, the injury was not checked, but proceeded instantly from the interior to the exterior. Lastly while the English gun gave warning of its condition, the Krupp gun gave none. There aro no new features in this behaviour of the two guns. On the contrary, all the features are old they have been repeated over and over again. Only we are frequently been told such great things of the steel guns, or to the disparagement of our own, that is worth while when an opportunity occurs to compare the behaviour of the two in order that the public may be able to form their own opinton on the subject."—*Broad Arrow.*

TORPEDOES.

One thousand three hundred torpedo cases, which have been manufactured by Messrs. Spencelagh and Archer, of Rochester, for Her Majesty's Government, have been delivered into store at the Royal Arsenal, Woolwich and testified by hydraulic pressure, for the purpose of ascertaining that they are perfectly water tight. They are simple wrought iron cylindrical boxes, with rounded ends, one of which contains a cast iron cap, pierced to receive the electric wires that screws into the substance of the torpedoe. The cases are surrounded by stout bands, with eyes in them at intervals, to be attached to mooring ropes. Three sizes have been manufactured, one to contain 500lb. of gun cotton, at a cost of £7 3s; another to contain 250lb., at a cost of £5 6s. and a third, to contain 100lb. at a cost of £4 4s. The gun cotton (compressed) to fill them will cost about £37,500 at the rate of 2s. per lb. The two larger sizes as are made of 3-16th of iron plate, the smaller ⅛, but the latter have been tinned to prevent oxidation. Wooden jackets to render these torpedoes buoyant in water are being manufactured in the Royal Laboratory Department. They will be fired by electricity, either by a direct wire from the ordinary galvanic battery placed at some convenient spot in the vicinity, or through the agency of a "circuit-closer," which is a small pear-shaped instrument floating upon the water, and the slightest percussion upon which, such as a blow from a passing vessel, closes the connection between a wire leading to the torpedo moored below and another wire communicating with the battery. Thousands of these "circuit closers" are now in process of manufacture at the Royal Laboratory. The flame to fire the charge within the torpedo is created by an "Able's electric fuze," which is contained within the torpedo itself. The India rubber and Gutta Percha Company are supplying upwards of five hundred miles of electrict insulated wire as fast as it can be manufactured, which is coiled within the ample circumference of one of the dry docks in Woolwich dockyard. They have also instructions for the supply of 1,300 Walker's Galvanic Batteries. A large portion of the wire mooring ropes for the above torpedoes has been received, and the Torpedo Committee, under the direction of Colonel Nugent R. E., are providing all other necessary small stores, &c., for the purpose of rendering them complete in every respect. The gun cotton for charging them was also in course of manufacture at Stowmarket, previous to the disastrous explosion which occurred there, an arrrangement having been made for the preparation of about £30,000 worth of that article ; it is anticipated. however, that means will now be adopted to procure a supply elsewhere.

Moncrieff's 9-inch counterweight gun carriage is to be tested again in England with several tons of lead added to the eighteen tons of iron, of which the counter-weight at present consists ; the platform being raised four inches by blocks of wrought iron to accommodate the increased bulk of metal. The Scott gun carriage for the *Devastation's* 35-ton, is still at the Woolwich butts, being used, for experiment with different natures of powder, undergoing a test which is not likely to be exceeded on service. The ponderous weapon is reported to be under as complete control, and worked by as few men, as the old 5 ton gun of smooth-bore memory, which not ten years ago, was declared to be the heaviest gun capable of being worked on shipboard.

A WORD TO GERMANY.

After the profusion of advice offered by our press to the French nation with regard to the policy which it promises to make its own in the new period of peace, it is but fair that the German policy should likewise receive some consideration. In her present unhappy condition, France, though no longer an active belligerent, was compelled sooner than her late adversary to apply herself to internal legislation which to her became a question of vital necessity. For Germany, the peace practically only begins now, after the return of the bulk of the army. While half a million soldiers remained on foreign soil, sustained perforce by France, while negotiations were still pending, undecided questions and irritating conditions, afforded opportunities for collision, and while a German military governor held supreme sway in the occupied provinces it could hardly be called peace. The 16th of June and the festivals following in its trail are practical ratification of the treaty of the 10th of May. We are bound to appreciate the promptness and despatch with which Germany has—peace being once concluded—cleared the invaded country of her troops; of the half million men then in France only some hundred and twenty thousand remain now. But we fail to recognize in her other acts the fulfilment of the assurance and promises given us during the war. Germany has been the first to criticise and condemn the warlike spirit, the thirst for military greatness, and —as it is believed—for revenge, traceable in the acts and legislation of M. Thiers. Still that same spirit is visible in every act of the Government at Berlin. In former years when our unceasing recommendations of general disarmament gained us notoriety in the diplomatic world, Prussia justified her military preparations by the armaments of her western neighbour. That such armaments and the accompanying talk of war were likely in the end to result in war was never denied. It was reasonable to imagine, therefore, that the collapse of the French military power would be made the signal for German disarmament, the more so as assurances have been frequent that Germany, seeking strength solely by peaceful and moral development, was eager to constitute herself, by her own good example, the future guardian of universal peace. The acts which have followed the treaty of Frankfort are not quite in harmony with those professions; preparations for war and talk of war have become the most prominent characteristics of the country, and both apparently emanate from above. We observe, too, that the liberal press of Germany discerns in all this the germs of future war and the forfeiture of those good results the peace has promised to yield to the country. We must not be understood to censure Prince Bismarck's desire to introduce uniformity of organization into the German army as well as into other Imperial institutions; that is a work necessary for national unity. But so far from making the peace a signal for disarmament, he seems rather to have seen in it an opportunity for increased armaments. The army, which in its state of division was able to defeat in a few months the whole military force of France, ought in its state of union to suffice for all purposes of defence, the more so since the frontier has become incomparably stronger. But we find the Berlin Government, before a single measure of consequence has been passed to benefit the civil comunity, impatient to augment the military establishment by the formation of numerous new regiments as if that were a matter of urgent national necessity. At the same time the fortifications of Alsace and Lorraine are, under Count Moltke's directions, being strengthened as if a new war was expected a twelvemonth hence; the arsenal of Spandau is being enlarged, the navy augmented, new fortifications on the north coast and on the banks of the Elbe are ordered without delay, and numerous other measures betoken how largely military projects preponderate in the thoughts of the Government. The proposed canal of Kiel is recommended on the strength of its strategetical merits, and plans are before the War Ministry for the expansion of the railway system with a regard to strategetical requirements in imitation of the French. Even if these measures were not in themselves apt to arouse apprehension, the time is so ill-chosen that they seem hardly compatable with an ingenious desire for peace. As the *Volks Zeitung* justly observes, these formidiable German armaments, provoke corresponding armaments not only in France but by every European Power. Thus not only is Europe to be turned into an armed camp, and the disquiet and apprehensions of the period preceding the war are to be maintained, but an immense amount of money, which ought to enrich commerce and was never more urgently needed, is sunk in fortifications and armaments. The doubtful policy of Germany does not end here. At the time of the negotiations Government was anxious to represent the terms to the country as disabling France to renew the contest for at least twenty years. With the return of the army it changed its tune. General Kirchbach was the first to proclaim the probability of a fresh war after possibly only five years; he said this when the eyes of all Germany were upon him, and every word from his mouth was sure to strike with double force. The saying has been caught up by Government and the semi-official papers, who speak of a French war now almost as they did from 1866 to 1870; and a few days ago we find the Emperer himself at Settin contemplating the event of a new war, though not in his life time. All this may be, and probably is, intended merely to secure popular support for the proposed military expenditure: but it cannot fail to fill the public mind, both in Germany and abroad, with apprehensions of danger that are likely to lead to that danger itself. The course appears, moreover, to involve an unfair protraction of the war, as every threat, nay, every warlike prophecy, of Germany tends to embarrass France, not only by justifying her unfortunate armaments, but by impairing her credit in the great struggle for existence. It must prove the more injurious to peace, as Germany has of late betrayed not only an inclination still more to extend its territory, but has also assumed a domineering tone towards other Powers which it is likely to arouse suspicions that the immense army may after all not be intended exclusively for the preservation of peace. The paper already quoted comments very sharply, but none the less justly on indulge under the name of patriotism in the veay sentiment which in the French it condemned under the name of Chauvinism. this attitude, and warns the nation not to

It may be gratifying to the self-love of Germans to find themselves raised into such enormous importance, and see, as semi-official papers triumphantly proclaim the political "centre of gravity" removed from Paris to Berlin. But it is neither honest to others nor just to themselves needlessly to indulge in this gratification. We accepted their assurances that they would employ their victory to make peace more secure, and we have some right to claim an earnest of that promised peaceful policy. With its new power Germany has assumed new responsibilities which it ought not to disregard. At any rate, we trust the nation will not suffer an insatiable militarism to continue long. How suicidal it is to the country itself does not require to be shown. If a proof were required, we could find none better than that lately quoted from the *Elberfield Gazette*, viz. the impatience of the victorious Germans to leave their fatherland with all its glories for the freer atmosphere of England, America, nay France itself, where, besides political and religious liberty, they find facilities for their energies which Germany does not offer them. As long as we can recollect, the Liberal press of Germany has teemed with appeals to Government not to stop up the channels of internal development for the barren growth of militarism. If it was shortsighted to disregard this popular wish before, it becomes doubly unwise now. For the nation which has routed the entire strength of France in a few months need not against its will submit to hateful impositions. We trust that it exert its power so as to avert a calamity threatening its own country with at least as severe consequences as any other, and to secure for Europe the only good that can be hoped to spring from the late war, enduring peace.

The General Staff in Berlin is preparing an official history of the campaign of 1870–'71. Colonel Verdy du Vernois, chief of division in the General Staff, has been entrusted with the general supervision of the work.

It was thought that the French Government had given up the idea of rebuilding the Fort of Issy, which is commanded by the heights of Chatillon, etc., but masons are at work walling up the breach and repairing the shattered casemates; and it is now said that the Government intends laying out a sum of about $3,500,000 in building a huge fort similar to that of Mont Valerien, on the heights of Champigny, where the battle of the 2nd December was fought, in order to protect the valley of the Marne.

It is expected that the President of the French Republic will spend a good part of the vacation in visiting forts and various military positions, where engineers are already at work preparing new lines of defence. It is probable also that he will do much to re-organise the army on its present basis in concert with General de Chisey. There was a great deal of enquiry made by the National Assembly into a variety of military matters, but no laws were voted beyond the conscription for next year and the budget.

One hundred rounds per man of blank ammunition was allowed during the British autumnal manoeuvres. To each man were issued five rounds every morning, which supply was replenished, if required, during the day from the regimental ammunition carts, one of which followed each battalion. The regimental ammunition carts carried rather more than twenty-five rounds per man for a battalion of 600 men, and turned out each day, following in the rear, and within such convenient distance of their respective battalions as was considered necessary. Any ammunition taken from them during the day was replenished in the evening from the standing depot of the division.

CONTENTS OF No. 1, VOL. VI.

The Volunteer Review,
AND
MILITARY AND NAVAL GAZETTE.

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

OTTAWA, MONDAY, JANUARY 8, 1872.

THERE are certain conditions under which an armed force constrained to act on the defensive must be handled in order to enable it to counterbalance a disparity in numerical strength or discipline. A good deal depends of course on the selection of a position capable of giving every military advantage and opposing every possible disadvantage to the assailant. A defensive position should afford the following conditions:—Natural obstructions; effective cover from the enemy's fire and the fullest development of that of the defenders; complete command over the ground by which the assailant advances, command of all the lines of approach; freedom of movement for offensive or defensive operations to the defenders; secure natural points of support on both flanks and rear. All requisites for encamping and supplying an army, line or lines of retreat ample and secure. Natural positions seldom combine all these requisites and have to be rendered available by artificial means, hence the necessity for fortifications. This may be defined as the art of arranging a position in such a manner that an inferior force can resist a superior, and it consists of temporary or field fortifications constructed for the exigencies of a campaign or permanent fortifications to cover vulernable points of great moment and strategetical value. Intrenchments or lines are fortifications of considerable extent, and the principles which govern the construction of temporary works apply also to those of a permanent character, the only difference being in the material and design of the structure. A Field Work is a fortification of a limited extent —all fortifications are merely accessory defensive means —and must consist of a covering made of earth, brick, stone, wood, or iron, sufficient in height and thickness to screen the defenders and intercept the missills by which it may be assailed

The technical terms describing the parts of such fortifications are as follows, beginning from the outwards:—The *Glacis* is a mound of earth with a gentle slope outwards, or the natural slope of a hill. The *Ditch* is an excavation furnishing earth for the formation of the parapet, it consists of the *counterscarp* next the glacis, a berm or small space extending between the crest or top of the counterscarp and inner face of the glacis, the bottom of the ditch. The Scarp, the berm between the scarp and parapet, the exterior slope of the parapet, the interior slope, superior slope—a line connecting the exterior and interior slope—in case of musketry being alone used merely a prolongation of the slope of the glacis, the interior slope of the parapet is known as the breast height; when artillery is used it is from three to four feet above the glacis but parallel thereto, and the interior slope is known as the *Genouillière*. The Banquette, a platform for musketry to enable the men to fire over the parapet, and sometimes a trench or shallow excavation in the rear of the Banquette for troops to stand in. The rule to be observed in all cases is that no space in front or flank of the works is free from the fire of the defenders. There are two cases which will offer facilities to the assailant. The first is when their fire does not command the approaches; this is called a *section without fire*. The second is when there is no natural or artificial glacis and the fire sweeps *above* the approach; this is termed a dead angle. It is very important that the parts of the general plan of fortification in relation to the position to be defended should be so distributed as to do away with those defects, and this is frequently the most severe test of the skill of the military engineer, because in addition to other principles it is not always possible to bring a front, flank and cross fire on a column of attack, and yet that is the problem to be solved for successful defence.

In order to effect this object a portion of the line of defence is thrown forward to compel the attack thereon, and the problem is sought to be solved by making the retired part perform the duty of flanking the assailants. The condition indicates that the general outline of the plan should be an angular system, the salient or advanced parts being towards the enemy and the re entrants towards the assailed, This disposition is denominated flanked, because the advanced parts must be first assailed and they are covered by the fire of the re-entrant; the advanced parts are called faces. The Re entrant Flanks—the line connecting the flanks is called the curtain; an angle formed by two faces is a salient angle, by two retired lines a re entering angle, and that made by a face and the opposite flank an angle of defence. The line bisecting a salient angle is denominated the capital; the distance from a salient to its opposite flank is a line of defence. Whether segmental or angular bastions are used the nomenclature remains the same and defines the terms used in fortification as a science, and for its practical application.

"MODERN SEAMANSHIP.—So far as the loss of ships may be taken as a criterion, modern seamanship can be demonstrated by statistics to be superior to that which it has happily replaced. During the twenty-two years of war ending with 1815, our naval ancestors lost 61 ships of war by foundering, 278 by wreck, and 13 by burning, besides those captured by the enemy, making 352 vessels, with 14,311 lives, totally lost by accident, or, as the *Times* would say of the modern navy, lack of seamanship, They did not in those days record strandings attended with trifling injuries, such as those of the *Agincourt, Lord Warden, Caledonia, Rover*, &c., but reasonably estimating these at five vessels stranded for one lost, our immediate ancestors attained an annual average of 16 accidental total losses and about 80 groundings. Admitting that during that period they had on an average nearly twice as large a naval force as at present, and halving, therefore, the losses, there is still a wide margin between the eight annual losses of the old officers and the less than two per year of modern seamanship. True, their charts were defective, and *Megæras* not uncommon, but the harbors and channels are of the same depth and extent for our 6000 ton frigates, which require 28ft. of water to float them, as for their 500-ton frigates, which were less then 16ft. deep. Even admitting many other mitigating considerations favorable to ancient seamanship, these must be weighty indeed to equalize, much more to reverse, the ratio of eight annual accidental losses to the modern less than two. Surely, in the face of such statistics, the claim of old officers to superior seamanship must be based on something else than safe navigation. The modern navy glories in its succession to a wonderous heritage of renown, earned by the consummate pluck and the prodigies of valor performed by preceding generations; but when old officers enquire, too unwisely, "What is the cause that the former days were better than these?" they provoke the reminder that naval history records only their good deeds. Tradition tells of ships holding aloof in battle—of lack of seamanship, in gunnery, in discipline, in the well ordering of their crews, as well as of the presence of disorder and of preventible disease, the fruit of ungodliness and vice too shameful to speak of, inefficiency which compares badly even with the American and French ships of those times. It is the naval authorities and officers of the day who are responsible for each of those things and in none of them, except courage and daring, has the navy of to day any good thing to learn from that of the past.—*Frazers Magazine.*

The writer of the above no doubt esteemed it a very fine comparison of the relative abilities of the seamen of the present day and those old sea kings who, against all odds, made Britannia the Queen of the Ocean; but it does not seem to have occurred to him to note one or two essential differences, the first being the fact that the fleet of Great Britain is now propelled by steam—a power at the command of the officers of each vessel—while the fleet which conquered all the other naval powers depended for its motive power on wind—at no time at the command of the seaman. That the fleet of the present day is manœuvred for practice and provided with carefully prepared charts, not driven by necessity to poke their bowsprits into every shoal on a coast and need never be caught in an ugly gale on a lee shore. The duty of the fleet seventy years ago was to follow the enemy wherever he might lead to, beat about his coasts amongst shoals, rocks or mud banks, thoroughly search out each creek for evidence of privateering, or concentration for offensive operations that in the discharge of this duty all risks had to be run, and it was in its faithful performance that the great secret of success lay. That the 500-ton frigates did more hazardous duties in one year than the present 6000-tons could effect in seven, and that to any practical seaman the professional skill displayed by the officers of the smaller craft was very far superior indeed to any shown by the seamen of the present day. Such accidents as occurred to the *Agincourt* would be scouted by the officers of the old school as a piece of lubberly stupidity, as it was in fact, and when the officers of the present day show the world that they can bring the British navy through a contest of twenty-two years with as little loss the writer's proposition will be proved. Without in any way underrating the value of steam power as applied to the navy, we say, and do so advisedly, that its immediate effect has been to banish seamanship altogether from the navy, and by that term we understand the handling of a vessel at sea. What sort of seamanship lost the *Captain*, stranded the *Agincourt*, and is accountable for the disgraceful mishaps which have been chronicled within a year, and which would be discreditable to the skipper and crew of a Thames hoy. The modern navy has succeeded "to a wonderous heritage of renown," but it was earned by officers brought up to understand the smallest detail of their duty and especially practical seamanship: now a days naval cadets at seventeen might know how to drive a locomotive on a railway, but to "hand," "reef," or "steer," are mysteries of the most abstruse character, while the idea of going aloft would be regarded by the modern middy as about as much out of place as a marine sentry on horseback, and an operation for which his patent leather boots and bluecoat hospital toggery are peculiarly unfitted. Seamen, indeed, it will take a couple of generations to make any approach to the professional knowledge that has been wantonly *economised* out of the British navy.

That there were many evils attending the state of affairs in the navy formerly there can be no doubt, but the tone of morals have been considerably improved since then, and many useful inventions made, amongst others the application of steam, which saves a large amount of brain work and bodily labour, converting the 6000 ton frigates into floating batteries, the crews into stokers and gunners, and the officers into artillery commandants—the discovery of the Manchester School of politicians and its great corollary—the invention of Mr. Childers.

THE tenderness, to use no harsher phrase, with which the ravings of political lunatics has been treated by the people of Great Britain has emboldened the busy plotting traitors, whose livelihood is gained by attempting to upset society, to proceed to lengths which would not be tolerated in the United States, and to avow openly their objects to be the overthrow of the proved and time honored institutions of the Empire, the confiscation of all its personal and individual property and the inauguration of a political, social and moral regime far worse than that which the Model Republic has been obliged to forcibly abolish in Utah, as inadmissable in any civilized state. This state of things is illustrated by an article which appears in another column, being part of a speech delivered by the Hon. Robert Lowe, the English Chancellor of the Exchequer at the annual soiree of the members of the Mechanics Institute, at Halifax, England, in reply to the falsehoods with which Sir Chas. Dilke amused his hearers in his late republican crusade. It is certainly painful to read serious refutations of charges so notoriously false and equally painful to find any Englishman listening to them. One comfort, however, is to be derived from the fact that the society which those idiots believe will support them is of foreign growth with foreign ideas, athestical, villainous and secret, with nothing of value to recommend it, and every one of its sentiments and doctrines not only alien to the honest English sentiment but repugnant to all the ideas of that people. It is a trite saying and a true one "that prevention is better than cure," and it is worth while carefully considering whether the press of Great Britain is not seriously neglecting its duty to society by "chronicling the small beer" of the manifestoes of the International Society or playing with the question of radical change as a new scientific discovery whose laws require investigation. The safety of the state demands that individuals should be restrained from jeopardising its welfare, and when people openly plot for the purpose of destroying it the duty of putting them down is plain and clear. Fool as Dilke may be, he has to deal with blood thirsty knaves who will use him and then throw him aside. The last phase of this is that the International has denounced "Citizen Dilke" because he is not radical enough.

THE renowned General Butler, otherwise *Ben of the Spoons*, has been doing a little spread eagle business lately, "doown to Provincetown." He has been haranguing the Yankee poachers of that district on the Washington Treaty, the fishery clause of which has not given the *General* or his friends sufficient satisfaction, and this is about the only sentiment in common between them and the people of Canada.

We would not notice the notorious humbug's oratory if it were not that he asserted the right to those fisheries was won from Great Britain by the Yankees by force of arms, and as the English people are in a conciliatory mood it is possible that the *Times* might recognize the truth of the claim. The fact is that astute Yankee Ben Franklin regularly coaxed a limited right of fishery out of Oswald, Mr. Fox's negotiator. The treaty by which the Thirteen British Colonies became the United States was dated at Paris on 13th November, 1782; its third article reads as follows:—"It is agreed that the people of the United States shall continue to enjoy unmolested the right to take fish of every kind on the Grand Bank and on all other banks of Newfoundland, also, in the Gulf of St. Lawrence and all other places in the sea where the inhabitants of both countries used at any time heretofore to fish, and also that the inhabitants of the United States shall have liberty to take fish of every kind on such part of the coast of Newfoundland as British fishermen shall use (but not to dry or cure the same on that island), and also on the coasts, bays and creeks of all other of His Britannic Majesty's Dominions in America, and that the American fishermen shall have liberty to dry and cure fish in any of the unsettled bays, harbors and creeks of Nova Scotia, Magdalen Islands and Labrador, *so long as the same shall remain unsettled*, but so soon as the same or either of them shall be settled it shall not be lawful for the said fishermen to dry or cure fish at such settlement without a previous agreement for that purpose with the inhabitants, proprietors or possessors of the ground." This does not look like a concession won by force of arms; it was granted on the representations of Franklin, the most unprincipled and crafty man of his age, and his representations were false from beginning to end, but he never stuck at a lie when it suited his interests, and his countrymen copy his example in that particular.

The eighth article of the same treaty reads as follows:—"The navigation of the river Mississippi from its source to the ocean shall forever remain free and open to the subjects of Great Britain and the citizens of the United States." It is evident the language of the treaty is that of conferring a favor on the people of the United States who effected their separation from Great Britain not

by their own bravery or puissance, but by fraud and treachery and with the aid of foreigners abetted and encouraged by home traitors. The Whig Radicals of England did more for Yankee Independence than all other means put together The war of 1812 15, in which Butler's countrymen came to take Canada and went away without it, abrogated the treaty 1782, and gave this question also a new departure. It closed the navigation of the Mississippi to British subjects and it deprived United States citizens of all right or claim to fish on British coasts.

The Treaty of Ghent in 1815 meekly acquiesced in the decision which the war established; that of 1818 defined distinctly that they were not to fish within *three* marine miles of the coast of any British possessions, and the late Treaty of Washington leaves the question of right in the case at the disposal of the parties to whom the fisheries belong —the representatives of the people of Canada in Parliament assembled. In spite of all bluster and rhodomontade, that is exactly how the question rests, and the great majority of the people of the Dominion are opposed to giving the Yankees any rights or privileges therein for any consideration or in any case, so General Ben may rest easy in his mind on that subject. If it is decided at the next session to retain our sole rights in the fisheries we will send such a force there as will prevent any more *E. A. Horton* escapades. This country has been abused by the stupid concessions of English negotiators, and in this very question of fisheries if it had not fortunately happened that there was a Canadian statesman on the commission our rights would be undoubtedly sacrificed; thanks to his exertion their disposal is in our own hands as yet, and we can afford to laugh at the vaporings of Ben of the Spoons and his poachers.

THE *story of the guns* has yet to be written is the conclusion at which any ordinary thinker on the subject of artillery will arrive, and whether as naval artillery, siege or garrison guns or field artillery, the fact remains the same, that the problem involved in their application as effective warlike machines, perfect in all their parts, has not only not been solved, but very far from approaching anything like a solution. Taking the construction of naval artillery, it is evident that is very far indeed from perfection. Monster guns have been built and tested to a considerable extent with charges and projectiles that would make the practical gunner of twenty years ago stand aghast with astonishment; but have those guns been tested under any of the conditions of actual battle? Have they been loaded and fired with the rapidity necessary in action and so continuously as to necessitate a withdrawal from action for a time, or have they ever thrown the weight of metal a good naval action would probably render necessary?

On the 23rd June, 1812, the *Belvidere*, one of those 915 ton frigates which the writer in *Frazer's Magazine* speaks so contemptously of, fought the *President*, American frigate of 1530 tons, mounting 56 heavy guns, the *Belvidere* mounting 42 guns, and during two hours and twenty minutes the latter discharged from her two stern chasers, (old cast iron guns), *three hundred* round shot. It was a running fight, the distance less than six hundred yards. Have any of those monster guns, moved by machinery, been subjected to this test? In fact, the experimental trials prove nothing; the weapons are all very well but their practical application have yet to be tested. Even in the matter of projectiles very little progress of a satisfactory kind has been made. The trials with the monster guns of the *Cerberus* at Melbourne has been a failure, owing, it is alleged to the uselessness of the fuzes employed, and even the celebrated "Woolwich Infant," the 35-ton gun, has got its steel tubing fractured. In actual field practice the value of the long range of modern field artillery is derided by those who have practically tested its efficiency, and it is openly stated that its effect at a greater distance than *six hundred yards* is actually worth nothing, that at this distance the infantry rifle is not unfairly matched with modern artillery, and that practically the old brass muzzle-loading twelve pounder is more than a match for the breech loading rifled gun at this range. That the idea of artillery duels deciding a contest is all nonsense and that it will be decided by that party that charges most frequently and quickly, and that the whole lesson of the period taught by modern improvements in weapons of precision is the necessity of cover and quick manœuvring. The admirable lecture of Lieut.-Colonel Strange evidently points out this fact, and his hopes to remedy it by more rapid artillery manœuvres seems at best only a partial means to that end, and the multiplication of mitrailleuse to be in reality the true solution of the difficulty in this case, while at sea rapid manipulation and what a seaman would call *handy* guns are its necessary conditions. Siege and garrison guns must undoubtedly undergo great modification to fit them for their proper conditions, and this brings us to the proposition at the head of this article.

GERMAN PILLAGERS IN FRANCE.—Herr von Wickede, the well-known correspondent of the *Cologne Gazette* during the Franco Prussian war has recently published a "History of the War of 1870," one passage in which will be made use of in the controversy as to the behaviour of the German troops on French soil. It must be admitted that the writer deals with the question in a most impartial spirit. "Towards the close of September I visited," to quote his own words, "the district around Paris. It was one continuous scene of destruction and desolation. The bivouac fires were being fed with valuable books; our soldiers were splitting up with hatchets the costliest pianos wherewith to cook their soup; they were reclining, all bespattered with mud, on velvet sofas; damask curtains were torn into strips to serve as towels. For three days I witnessed nothing but destruction; pillage, too, was rampant A whole swarm of ruffians made their way from Germany into France. They dubbed themselves cantiniers, infirmary and ambulance men, contractors, &c., but they were in reality mere highwaymen. They were especially numerous in the neighbourhood of Paris, where they robbed, thieved, and swindled the French to their heart's content. They also incited our soldiers to pillage, offering them some trifling sum for the produce of their theft. In the railway stations and shops these depredations were on an enormous scale. The culprits were nearly all Germans, and they even carried off what relief societies had sent for the benefit of the soldiers. Our civil and military authorities—several persons of high standing, too—granted, with a readiness that deserves severe censure, passes to a host of people as to whose position and calling they had not the slightest information and thus vagabonds, swindlers, and other scoundrels (*gesindel*) found their way into the Army as newspaper correspondents, merchants, sick nurses, &c. Then there occured many episodes which in no wise redound to the good fame of Germany, and which have very properly disgusted the French. It is impossible to reply to them when they accuse us of brutality and barbarism. Our gendarmes attempted to put a stop to these excesses, and made numerous arrests. Those on whom stolen property was found were punished, but the majority took care not be discovered in the act. Besides, the police was not in sufficient force, nor was it adroit enough to deal with such rascals, and, it must be added, they were much more frequently made to proceed against the French than against all these German scoundrels."—*gesindel*, as Herr von Wickede a second time denominates them.

We copy the above from the *Broad Arrow* and recommend its careful perusal to the political economists and shirkers of military duty, as it affords a faint idea of what the extent of loss would be by the military occupation of the country by the best disciplined army in the world for a few months, and is a complete answer to those wise men of Gotham who preach universal peace and brotherhood. The lesson it teaches to our military readers is the necessity for more complete organization and a close attention to drill, discipline, rifle practice, and all the exercises which go to make up the finished soldier that they may be enabled to ward off from their country in the hour of its danger the fate of being occupied by a foreign military force.

THE English War Office is reported to have entered into arrangements with the Prussian General Staff for effecting a translation into English of the official history of the late Franco-Prussian war. It must be a most valuable addition to military science.

MAJOR MACKEY, half-pay, late Town Major of Kingston, Ont., has been appointed Governor of the new Lindsay prison, Lindlow, Eng., with a salary of £300 sterling per annum.

NEWS OF THE WEEK.

The health of His Royal Highness the Prince of Wales continues to improve.

The Town Council of Windsor has presented an address congratulating her Majesty on the convalescence of the Prince of Wales.

The German residents in London are signing a petition to Prince Bismarck urging him to demand of the United States an apology and indemnity for the supplies of munitions of war furnished by its citizens to the French Government of National Defence during the late war. This is decidedly a new reading of *Alabama* claims and one that will bring a just retribution to the Yankees for their greed and injustice.

The republican Minister of the Interior in France has prohibited the sale of political carricatures.

Gambetta at Marseilles had created so much confusion that the military had to be called out to restrain his admirers and charge on them dispersing the mob with some injury.

A Committee of the Assembly reported in favor of a steam ferry between Dover and Calais.

Victor Emanual has given a public reception at Rome on the 1st January.

The King of Spain, Amadeus, has also held a brilliant reception at Madrid.

A new Captain General will be sent to Cuba.

A subscription to erect a statue to Gen. Von Moltke is being taken up at Berlin.

General Von Roon has resigned his portfolio as German Minister of War and General Von Stosch has been appointed thereto.

Our neighbours of the States have had a riot at Rochester. A negro, having abused a child, was arrested; the free and independent mob tried to lynch him, were resisted by the authorities and only driven off after four or five innocent persons were killed by the fire of the military.

Brigham Young, Apostle, Prophet and High Priest of the Mormons, has been arrested and is now held a prisoner in his own house, Salt Lake City, on the charge of murder.

Revolution is the order of the day in Mexico.

The Pacific and other railways have been blocked by heavy snow Storms.

California has been visited by a heavy rain storm.

The elections for the new Provincial Ministry in Ontario have terminated in the return of Hon. R. W. Scott for the city of Ottawa, without opposition, and for the vacated seats of Prescott and Ontario, Messrs. Hamilton and Monck.

The Governor General held a reception on the 2nd inst. in the Privy Council Chambers.

The weather during the past few weeks has been unusually mild.

The annual meeting of the Ottawa Board of Trade was held on Thursday, 4th inst, E. McGillivray, Esq., was elected President and George Hay, Esq., Vice-President, and as Delegates to the Dominion Board of Trade Hon Jas. Skead, Hon. Malcolm Cameron, E. McGillivray, Esq., and G. H. Perry, Esq. The latter Board will meet in the Parliament buildings on the 17th inst.

REVIEWS.

THE *Canadian Illustrated News*, for 30th December is a beautifully got up number. The engravings are The Grand Duke Alexis at Victoria Skating Rink; Portrait of the Hon. M. C. Cameron; The Manitoba Expedition crossing the Assiniboine, No. 2 company *en route* to garrison Pembina; A page of Vignette's; Portrait of the Hon. Edward Blake; Silver Heights the residence of Lt. Governor Archibald; Chicago in 1830, and a Large Chromo lithograph plate entitled *Kal-antisch*, kittens at home, from a painting by Ludwig Knaus, presented to the subscribers.

Stewart's Quarterly for October has been received; it is, as usual, filled with choice articles. A change of proprietorship has been effected and in future it will be carried on by Messrs. Stockton and Burbidge, Saint John, N.B. It will be known as the *New Brunswick Quarterly*. We wish it every success and hope it will maintain the high character of its predecessor.

Whitney's Musical Guest for January contains some beautiful selections.

The American Agriculturist for January is replete with useful knowledge and the fruits of practical experience for our farming friends.

CORRESPONDENCE.

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

To the Editor of the VOLUNTEER REVIEW.

SIR:—Your correspondent "Centurion" was good enough, amongst other expressions of kindness conveyed in one of his valuable letters in a late number of the VOLUNTEER REVIEW, and for which I beg to tender him my sincere thanks, to express regret that I had not said more in a few remarks which I took the liberty of making on one of his excellent communications.

Many circumstances have prevented an earlier expression of my sense of his courtesy, but I now ask you to permit me to state that my principal reason for saying very little was that my opinions on the subject on which "Centurion" has lately written are almost identical with his own, only that he has covered more ground, and advocated far more ably than I could have done, views which are common to us both, as well as, in my belief, to most officers of the service.

I sincerely trust such well considered views may meet with the attention they merit.

While referring to the letters of other correspondents you will perhaps also allow me to regret that a paragraph written by me some time ago appears to have been objectionable to your gallant correspondent Volunteer, whose own contributions show that he has the good of the service at heart, and whose opinion I therefore respect. I will only say there are two sides to every question, and that while I can easily concede the greater part of what volunteer advances as true of a large portion of the officers of the regular army, I am not without ample grounds for the view I took.

Yours &c.,

G. W.

AN ITEM ABOUT CHATHAM SEVENTY FIVE YEARS AGO.

The following letter, from the manuscript "Simcoe papers" now in the Parliamentary Library at Ottawa, will, we are sure, be read with considerable interest by the residents, old and young.

Detroit, October 9th 1794.

SIR, - You will build, so soon as possible, six boats, agreeable to the plan and dimension which you have laid before me for the Boats calculated to carry six pounders. These boats are to be built at Chatham, on the River Thames. You will also erect a Store House in the form of a Block House at that place. Lieut. Colonel England seems to appear that he can occasionally spare you for these purposes without any detriment to the King's Services in the Dock Yard of this place. Should any unforseen circumstances alter his opinion, of course you will obey such directions as you shall receive from him, of which he will be pleased to give me notice.—The nails and Iron Work necessary in the progress of this you must purchase at this place, payment of which will be duly authorized, and the Vouchers being transmitted to R. B. Tukale, Esq., Navy Hall, Niagara.

Wm. Baker, Builder, Detroit, } I am, Sir, Your Obedient, (Signed) I. G. SIMCOE.

The Napels correspondent of the Prussian *Exchange Gazette* describes a new diving machine for laying torpedoes, etc., under ships, invented by a Venetian named Tosselli. It is called "talpa marina" (the sea mole), is made entirely of iron and bronze and is in the shape of a cylinder, four meters long and about eleven decimetres in diameter. The machine is in four compartments, one above the other. In the first is compressed air for the use of the diver; in the second the diver himself; in the third, an apparatus for lowering or raising the machine in the water, and in the fourth a quantity of lead to keep the machine in a vertical position. A number of drills and other tools are also fitted into the surface of the machine, to enable the diver to perform various destructive operations under water. On the 26th ult., Signor Tosselli descended in his machine in the Bay of Naples, in the presence of the naval commandant and several other high naval officers. He sank to the bottom of the bay, a depth of seventy meters, and remained there an hour.

A large supply of Snider rifles have been sent out to India from England, but the long looked for weapons were accompanied by the wrong ammunition, and were, of course, useless.

AFTER THE TAKING OF QUEBEC, 1759

BY E. H. NASH, FARNBORO, P.Q.

A struggle wild, the battle done!
An onset fierce, a victory won!
On Abram's Heights Quebec is ours;
Her gates, her castles and her towers!
Among the dead, oh, well we may
Mourn the young hero of the day.
The noble, brave! yes, Wolfe is slain;
As Victory sounded o'er the plain,
His glazing eye marked well the rout,
With life's last flash, ere it went out.

This was the news borne o'er the main,
And English hearts beat high again.
Rejoicings wild filled all the land,
"The battle's ours," hand joined in hand.
And bonfires huge of faggots piled,
Blazed in the darkness, flaming wild;
Throughout her length, and breadth entire,
Did England's sons light up that fire,
Save in one spot—a hamlet mean,
Where neither smoke nor flame were seen.

Where all was gloom amid the light
That shot from each surrounding height.
Where all was silence 'mid the glee
That filled the land from sea to sea;
For there a widowed mother's grief
In silent sorrow sought relief.
There Wolfe's lone mother mourned as one
"Who mourneth for an only son,"
In woe so deep that none but He
Who every human grief can see,
Who every mortal pang can feel,
The Lord above, alone could heal.
—*New Dominion Monthly.*

Major-General James Wolfe was born at Westerham, Kent, England, in 1727, and fell mortally wounded at the battle of the Heights of Abraham, September 13th, 1759. Foiled in all his attack below or in front of the city by the skill of his great antagonist, the Marquis de Montcalm, with the inspiration of genius he attempted by carrying his forces above the city to obtain a footing on the heights on which the city of Quebec stands; his success is a matter of history. While dropping down the river he is reported to have repeated Gray's celebrated elegy, the last stanzas with peculiar emphasis:—

"The boast of heraldry the pomp of power,
And all that beauty, all that wealth e'er gave,
Await alike the inevitable hour,
The paths of glory lead but to the grave."

Early in the action he was struck in the left wrist by a musket ball; wrapping a handkerchief around it he continued to discharge his duty. At the advance he was again hit; he dissembled his pain and still led the 28th Regiment. As the lines again closed for the final charge a ball struck him on the breast, he reeled and would have fallen but was caught by an officer of the Louisburg Grenadiers, who, aided by a Volunteer, carried him to the rear of the redoubt. As he was borne from the field he said "the day is ours—keep it." Some one proposed to send for a surgeon, he said, "It is needless—it is all over with me." When the final retreat of the enemy was announced he said, "go one of you my lads to Colonel Burton, tell him to march Webb's (the 48th) Regiment down to the Charles River to cut off the retreat of the fugitives from the bridge; he then turned on his side and his last words were, "now, God be praised, I die in peace," and thus, in his thirty-third year, died Wolfe, victorious. His body was taken to England and interred beside his father in the Parish Church of Greenwich, but his fame and that of his opponent will be indissolubly interwoven with the history of Canada.—ED. VOL. REV.

CAPT. STRANGE ON PRACTICAL ARTILLERY.

(CONTINUED.)

Guns should not be placed immediately in rear, as again giving a double target, except in such positions as Sedan, where an amphitheatre of hills allowed their converging fire to act over the heads of the columns and gave increased certainty to the action of their percussion fuses.

The reverse of a gentle slope not exceeding 4°, with gun muzzles only appearing over the ridge, is generally favorable, but twenty minutes' work with the entrenching tools on the limber will give excellent gun pits, in which the principal advantage of the breechloader gun is apparent.

When the opposing guns are on higher ground the reverse of a slope is sometimes most disastrous, the ground acting as a natural glacis, coinciding with the descending trajectory of the enemy's fire, as at Inkerman. An advance over the ridge is the remedy for this evil, which will at once make itself felt.

It is needless to remark that during all infantry deployments their fire is lost, and changes in front should be covered by the divisional artillery sweeping the face of the new alignement.

I am of opinion that the Russian and Austrian unit of eight guns per battery is best suited for tactics. In peace it can be reduced to six or four, and is easily expanded, no more officers being required, the first captain being a major, and the second captain taking charge of a division or half battery when necessary. A flying column can seldom take more than a battery, and will want to work with a half battery on either flank. Four guns are almost as effective as six, while three on each flank break up one subaltern command, and if it is required to reinforce a flank there is a difficulty, for it is not allowable to leave one gun on a flank, or send it away alone. Each division of two guns is complete in stores for repairs, artificers, &c., and can be detached on any service under its subaltern commander.

Tactical use of Artillery under the second head —viz., Reserves "à la Grand Tactique."

"The general engagement once begun, he who has the address to bring suddenly and unknown to the enemy an unexpected amount of artillery to bear upon the most important points is sure to carry them."

This was the dictum of *the* Artillery-General Napoleon the Great.

At the oft quoted battle of Friedland, "36 pieces were collected from different divisions by Senarmont, who commanded the French artillery; this concentration of the division artillery was contrary to the wishes of the generals, but was done with Victor's consent, silencing the Russian batteries on the right bank, and driving the infantry into the defile before Friedland. The Russian cavalry attempted to check the advance of the battery, but Senarmont promptly changed front, and repulsed it with ease. Napoleon himself was astonished at the effect produced by this battery acting thus independently. The defeat of the Russians was complete, and their loss severe." The final concentration was due to the confined space, and the short range of smooth bore guns; to copy this action would be an error with rifled artillery.

Taking the artillery from a division to form a reserve is, however, unadvisable; it destroys the divisional tactical unit, and tends to dispirit any but the most self reliant infantry.

The artillery reserve is as essential to an army corps as the cavalry division, and is as much a tactical unit to be placed under a selected artillery general.

It is probable that the increase of artillery range will lead to a different method of reserve application, viz., concentration of fire, but dispersion of batteries.

With smooth bore guns it was necessary to aggglomerate batteries, so as to produce an effect on an objective point. The same result may be produced by concentrating fire from batteries sent to different points for the purpose, or by directing the concentration of the divisional artillery fire by army code signals.

Both French and Prussians find it necessary to increase the intervals between the guns of a battery from 20 to 40 yard, when exposed to the enemy's shell fire, the bursts of which are found to be so laterally destructive. When it is wished to increase the artillery power at a certain point, a fresh battery is sent up to take part between the intervals, and damaged batteries are relieved by fresh ones from the reserve in a similar manner.

These methods hold out many advantages over concentration of guns in an unwieldy mass, which cannot well be forced into action without dislocating the line of battle. Eighty British guns or thereabouts were once drawn up in rear of, and it was said in support of, allies, without firing a shot; two batteries only were employed on the flanks, of the general engagement. In the event of disaster, guns so placed can give no support; friend and foe are mingled in a mass, against which no man could fire, unless indeed the position was sufficiently high, and the combatants far enough apart, to allow of discriminate artillery action. This would hardly be the case in retreat; and an unwieldly mass of guns and ammunition waggons driving helplessly to the rear would block up all roads, amid a storm of anathemas from friends, if not projectiles from foes.

At Gravelotte, however, eighty four guns, with hussar supports, galloped up a ravine which concealed their approach. The three first batteries, under an artillery general, on deploying, found six mitrailleurs in action; the whole eighty four guns were concentrated on the nearest mitrailleur; there remained nothing of it but wreck. The same with three others in succession; the two last did not wait for this annihilation. The eighty-four guns were crowded, to avoid drawing fire on a field hospital in rear of the intended alignment. Nevertheless, by concentration of fire, the French guns, about equal in number, were silenced in succession, the difference between French and German artillery fire being that the former believe in "*feu d' enfer.*" When they think the enemy is in front, they blaze away quickly. The Prussians generally avoid the fire-swept zone; when French men and ammunition are exhausted, they attack. Excessive deliberation and careful pointing are the peculiarity of Prussian artillery fire, and nothing will induce an officer to waste ammunition unless he sees his object.

More than ever, artillery action requires an artillery head, but no English artillery general has ever been permitted to command a British army, or even a division, in Europe.

It is sad to read what a distinguished veteran before referred to wrote, in 1818, at the close of his campaigns. More than half a century has passed away, and yet is there any improvement in the status of the artillery general, whose most important functions on service will be usurped by the omnivorous Control Department? Any service, the representative chiefs of which are systematically overlooked, must deteriorate.

Sir Augustus Fraser says: "Let us consider what is the present situation of the officer commanding the artillery of any army. He is expected to be responsible for all that is understood by the efficiency of the arm when it joins the army; it is subdivided and placed in various ways under the command and superintendence of the general officers of the cavalry and infantry; so that with the exception of attending to its wants in men, horses, ordnance, and stores, and of endeavouring by correspondence with the Department in England to obtain the necessary supplies, the commanding officer of artillery may be almost said to have little to do with

the arm in the field. His opinion, we have seen, is not asked as to the selection of the arm for service, and it is clearly never required for the distribution of it afterwards. He can seldom be known to his commander but by the wants of the arm, or by the sins of the system. Can it be wondered then that, rarely coming in contact but on these ungracious occasions, he seldom obtains the consideration which he does not appear to deserve? As to signalizing himself by any application of the arm in the field, it is out of the question. He remains an individual without the power of moving a single gun."

Horse Artillery.

Never having had the honour of serving in this distinguished branch, I have not touched upon its special tactics. Future ware will, I believe, give it a wider field of employment, both as a reserve to strike quickly and decisively; and also to give to our Uhlans the power of holding what they touch, a proportion of horse artillery Gatling-guns with cavalry would, I believe, be a happy marriage of fire and steel in the feelers of an army. At the most favourable range against targets, 4 cwt. of ammunition from Gatlings produces three times the result of 12 cwt. from field guns, or nine times the effect; but field guns could destroy the Gatlings at long range.

Siege and Garrison Artillery.

Siege and Garrison Artillery tactics include the attack and defence of fortresses, as well as the tactical use of the latter, with an army acting under their protection, or pivoting upon them, and runs into strategical consideration of bases, depots, and lines of communication—too large a subject for this paper. It will suffice to say that the feeble defence of the mass of French fortresses is attributable to their ancient construction and armament; a system of fortification 200 years old, is miscalled modern, and a mass of houses crowded into a weak enciente have crumbled rapidly into ruin under the concentrated fire of Prussian guns, defended, as these fortresses appear to have been, by everybody but garrison artillerymen. The comparatively protracted defence of Paris by detached forts appears to point to the advantages of a salient system of Moncrieff pits, as also the disadvantages of embrasures acting as shot-funnels to an enemy's projectiles.

The Prussians have largely employed the barbette system. It would be seen if they approached closer for breaching purposes, whether the French fire would be sufficiently accurate to dismount guns so placed. Against skilful and unopposed fire, as at Shoeburyness, such guns would be put *hors de combat* in a few minutes. Increased range of modern artillery gives a wide field for the selection of sites for enfildale batteries. A considerable distance beyond the salients of Mont Avron were woods; behind these, Prussian batteries were made, and armed unseen. The trees in the line of fire were partially sawn through, and fell with the first discharge, leaving unimpeded the path of their terrible projectiles. Thionville was reduced in the same manner; only one battery was in the open, and that a screen battery, such as we make at Shoeburyness. Only one round each quarter of an hour was allowed from any gun. This was to insure accurate laying, and possibly also for the fear of damage to breechloading apparatus.

It may be interesting to know that this application of a natural screen having been forseen before the present war by us of the Royal Artillery, an experiment of the same sort was carried out at a sham fight, the locality of which shall be nameless, or the experimentalist would certainly have a heavy bill of damages laid to his charge; though the real value of the destroyed Government timber was only a few shillings, the amount demanded would doubtless cool his military ardour.

The resistance of the Paris revetments and casemates remains to be compared to the system in some Prussian forts, which have no escarps, but slopes of earth, and rely upon flank fire and countercarps against a *coup de main*. The effect of concussion in continuous fire of very heavy guns in casemates, may have the effect upon artillery men which a naval officer informs me continuous heavy fire has upon British tars, of all men the least nervous: it is said to be a shock from which men and officers suffer for days. It is reported that the crews of guns in Paris casemates had to be relieved frequently and often taunted at the gun.

The Prussians are getting to feel the disadvantage of using only one projectile, common shell and percussion fuze, firing up hill or into soft ground, they fail. They are introducing Shrapnel and a time fuze. Trusting to one nature of fire appears rather like a quack doctor who has but one pill for all cases. I cannot but believe they have copied much that may be seen at Shoeburyness, but are still some way behind us in technical artillery matters. In artillery tactics they are in advance, possibly because artillery tactics have never been in the hands of artillery officers.

As regards our field and Garrison Artillery *matériel*, guns, and ammunition, &c., I believe it has always been the best in the world, and as long as England maintains her manufacturing supremacy, will, I trust, remain so, in spite of adverse criticism from home and foreign sources.

Technical Artillery Instruction—Field, Siege, and Garrison.

Improvements in artillery *matériel* are thought by many to be worse than useless, useless accompanied by a corresponding increase of intelligence and training. I believed I was giving voice to the wish of a large proportion of my brother officers when I proposed a plan for encouraging this professional knowledge among the rank and file or applying it, where it exists, by selecting the best-qualified non-commissioned officers or men, for pointing our guns in action. Our expensive modern projectiles will be worse than wasted in war, as they are in peace, fired away by men who may be short sighted, unable to adjust a tang at scale or incapable of setting a fuze to a given range.

Some years spent in daily instruction of the rank and file of the Royal Artillery have impressed me very painfully with the vast importance of this subject, about which I cannot think myself mistaken.

There is an absolute necessity for adopting some system of selection in our artillery, unless we are content to be swept from future fields of battle with bloodshed and dishonour, as an imposture, an incumbrance to a self-reliant British infantry, armed with terrible breechloaders, who will only ask us to batter buildings or expect us to fire at nothing smaller than a town. Unpalatable as such expressions may be, there is nothing gained by dishonestly shirking conclusions that may be drawn from the results of the late and present campaigns, and from the deliberate trials of the Dartmoor Committee. Their report shows marvellously few hits when the circumstances approached nearest to the probabilities of actual war—viz., unknown range, uneven ground, and rapid fire; add to these the element of nervousness and confusion, and you would have still less than the results reported upon by the Committee "as so unsatisfactory, and the expenditure of ammunition so much out of all proportion to the effect produced." The success of Captain Nolan's range-finder together with a system of picked marksmen trained to its use, would, I believe, when combined with mobility given by gun-axle seats, again restore to field artillery its destructive superiority over the other arms.

The French artillery choose the best shots with carbines as likely to be the best natural gunners, and a further selection is then made by the inexpensive plan of trials, by pointing guns at objects against time, but without ammunition, and lastly by actual firing at a target. These selected men are termed "pointeurs," and every gun in peace or war is laid by one of them, there being sufficient in each battery to make up casualties. It will be time enough to object to copy the French field artillery in anything when it can be proved that they have failed in everything. When the mists of passion shall have blown off the late contest between France and Prussia it will, I believe, be found that the Regular French artillery have not utterly failed, but lost heavily in boldly supporting and saving their infantry. Their free tactics (combined with certain defects in *matériel* I shall not dwell upon here) have caused loss in guns and men. It is doubly painful that some would prefer retrograding to a less efficient weapon, rather than educate our gunners up to our arms of precision. Because our national qualities make us good gunners, our men are phlegmatic to a fault. The Teuton and Scandinavain blood gives that precision in action which the excitable Gaul has failed to show. The French artillery officer knew their national defect, and tried to remedy it by selecting gunners as much as possible from Alsace. Gunnery education is only possible to us by a system of selection and prizes, not necessary to the Prussians, because all their men are educated. The French rank and file are morelike our own—mixed and very varied in education.

Restricting the annual practice to a certain percentage of most intelligent and keen-sighted non commissioned officers and gunners of each battery, would reduce the expense below that of the present wasteful system.

As regards the garrison brigades, a little modification in the amount allowed for annual practice would, without extra expense, meet the requirements of competition, a considerable portion of which might be carried on with the old smooth-bore ammunition, all but obsolete, encumbering as it does our controllers, with the charge of pyramids rivalling that of Cheops. A preliminary instruction and examination by subaltern officers before sending in the names of those selected for practice in their divisions would benefit both officer and man; refreshing the half-forgotten knowledge of the former, increasing his interest in his profession and his men, giving him a measure of their intellectual calibre, and enabling him to recommend for promotion with justice and confidence; while there would be a reaction of kindly feeling and respect from the men to their battery officers, who in garrison brigades, as matters now stand, have little to do with them except in the routine of orderly duty. The majority of subalterns in the Royal Artillery have reached an age when men in other branches generally command companies, and sometimes regiments. They might be entrusted with the instruction and selection of their marksmen.

Gunners' nature is only human nature; the Royal Artillery have no rewards for efficiency, while infantry, cavalry, seamen, and marines, and Volunteer Artillery, receive extra pay or prizes for proficiency with their special weapon, be it sword, lance, rifle, carbine, or great gun.

Lord Strathnairn, when Commander-in-Chief in India, introduced a system of competitive practice for the artillery, with extra pay and prize badges, as for infantry; it is very variously spoken of by artillery officers. All are agreed that being carried on entirely with smooth-bore guns, the results were much modified by chance; the admission of drivers and shoeing smiths (who would rarely, if ever, have to lay a gun on service), &c., into competition with gunners and Nos. 1 was thought a mistake: every man to his calling.

Prize pay and a badge of a cross-whips might be given to a certain percentage of the best drivers, whose horses were in good condition. These officers who adhered to the spirit of Lord Strathnairn's instructions allowed no man to compete unless he understood the elementary principles of gunnery, the setting of fuzes, was perfect at drill, and a first-class judge of distance. In fact, they who tried the system fairly speak in the highest terms of the spirit of emulation and efficiency it produced, especially the preliminary instruction in barrack-rooms by the subaltern officers.

Having been asked by many of my brother officers and some members of the committee to draw up for the Institution papers the outline of a scheme for competitive practice, I ventured to do so with the hope that general attention would be drawn to the subject, and errors I have made be remedied by the suggestions of any of my brother officers.

(To be continued.)

LOWE ON DILKE.

Our cable telegrams informed us some days ago that Mr. Lowe, the English Chancellor of the Exchequer, had been addressing a public meeting at Halifax, in which he had made some remarks upon the anti-Monarchical speech delivered by Sir Charles Dilke at New Castle. One of the charges made against Her Majesty by Sir Charles was that, although in the receipt of a very large income, She did not contribute to the Income Tax fund. This charge has been shown to be unfounded in a letter written to the *Times* by an officer of Her Majesty's household. And of the charge Mr. Lowe is reported by the *Manchester Guardian* to have spoken as follows:—

The gentleman has said that, as far as he could understand, the Queen, after having undertaken, through Sir Robert Peel, to pay the tax upon her income, had not fulfilled her promise. He was, as he said, almost ashamed to take notice of such observations because they formed an accusation which all who knew what the Queen was would be able to acquit her of without a moment's consideration. She has reigned over us for 34 years, and during that time she had maintained a high and stainless character. (Loud applause, and a voice, "Three cheers for the Queen." Great cheering, after which a verse of the "National Anthem" was sung, the entire assemblage listening and standing.) Mr. Lowe resumed.—He had been saying when so kindly interrupted (applause and laughter) that for the 34 years during which she had reigned over us, the Queen had maintained a high and stainless character, which was an honour to herself and a credit to the nation which had the happiness to be under her rule. (Hear, hear.) Those who however remotely, had been brought into contact with the Queen would know that if there was any feature in her character more remarkable than another it was her strict adherence to her word under all circumstances and under all difficulties. It might be truly said of her—

> "Her armour is her honesty,
> "And simple truth her only shield."

No one had ventured to charge her with having stepped one hair's breadth beyond the prerogative which was assigned to her by the Constitution. Nobody conld allege that she ever gave a promise that she did not fulfil. Nobody could say that anything had ever dropped either from her lips or from her pen but what was absolutely true, without the slighest intention in the world on her part to deceive or mislead. It was because he felt and knew this so thoroughly — and all those who had anything to do with the affairs of State knew it also—that he really felt almost ashamed to say what he was going to say; but with regard to the statement in reference to the income tax, he would state, being the person from whom such statements would come with the proper official authority, that the sum contributed by Her Majesty to the income tax since the year, 1842, when the income tax was imposed, amounted to hundreds of thousands of pounds, (Applause). If the hon. gentleman should bring the subject before the House of Commons, he (Mr. Lowe) would be most happy to give the fullest explanation, and he doubted not that the country would be satisfied in this as in all other things relating to her conduct in her high and honorable office, that Her Majesty had been true to herself and a worthy representative of the feelings of honesty and of the true spirit of Englishmen. As for the rest of the matter, he would certainly not discuss it. He should think it degrading and insulting to his hearers if he were to allude for one moment to the discussion as to the relative merits of Monarchy and Republicanism. Politics were not a speculative or metaphysical, but a practical and inductive science. The test of what was politically right what had answered and worked well. (Applause.) The English Monarchy beginning under William the Conqueror, with the sternest and most cruel tyranny, had in the course of 800 years endured, till under it we attained in this happy country more of order connected with liberty, more of ancient tradition connected with the springing power of boundless improvement, than had been granted to any other people on the earth, (Applause.) He did not misrepresent the feelings of his countrymen when he said they would not be disposed to consider for a moment the propriety of changing an institution under which they had derived so many great benefits—benefits admitted by all students of history to be such as no other country in the world had experienced. (Loud applause.)

The official report of the loss of the British troop ship *Megæra*, states that on June 8, on the passage from the Cape to Sydney, a leak was reported, but was for several days kept under by hand-pumps and building. On or about the 14th of June the leak became more serious, and the water gained on the pumps. Steam was then used, and by the aid of the main steam pumps the water was kept in check. It was determined to steer for St. Paul's Island where she arrived Saturday, June 17. A survey was then held, and a diver sent down to examine the leak. A hole was discovered worn through the centre of a plate, about twelve feet abaft the mainmast, and about eight feet from the keel port side, besides other serious injuries in the immediate vicinity of the leak. It was considered unsafe to leave the anchorage. Provisions and stores were then landed. June 19, weather being very stormy, and being unable to keep the ship in position, having carried away and lost three anchors since first anchoring, and being unable to carry on the work of landing provisions on account of the stormy weather, it was determined to beach the ship. At about 1 P. M., the ship was run full speed on to the bar, and remained there. She soon afterward filled up to the main deck aft at high water. The work of landing provisions and saving cargo was then continued, and a portion of the men and officers landed in charge of the same. The ship was not entirely abandoned for about ten or twelve days after she was beached. Up to July 15 about eighty tons of cargo for Sydney had been saved, and divers were still employed recovering it. Men and officers were living under canvas, and all are well. They had provisions to last, on half allowance, till the beginning of November, with exception of bread, flour, tea, and sugar, of which they were very short, men being on four ounces of bread per day. Water was obtained from summit of the hill during rainy season, but could not be depended upon. It is considered impossible to render the ship fit for further service.

The British artillery came in for a share in the general gratulation which the appearance of the troops at Aldershot produced. Ninety guns, or fifteen batteries, in perfect order, and only suffering from some excess of "burnish" and deficiencies similarly slight, paraded to the great satisfaction of all England. "Never before," says *Broad Arrow*, "did the British eye behold ninety guns in battle array on the English isle." But, nevertheless, ninety guns are but a small item in the equipment of a first-class army, and, accordingly, we find the Woolwich gun factories at work on twenty-seven batteries, or 162 16-pounder guns. They are built upon Frazer's system, and supply the army with a heavier projectile without lessening its mobility. The new 16-pounders really weigh less than the old 9 pounder bronze gun, which weighs 13 cwt., against 12¾ cwt. for the former. When these batteries are completed and horsed, the British artillery will want but one thing to be a model institution, and that is to be let alone by the other branches of the service.

The courts martial being held at Versailles bring to light, in a curious manner, the total absence of anything like command which reigned in the halcyon days of the Commune in Paris. Rossel was arrested for wishing to enforce discipline in his legion, and, while under arrest, was promoted by War Minister Clurseret whom he succeeded, when that officer was in his turn arrested. The other day citizen Pigere, a cabinet maker who had served on the staff of General Dombrowski, was tried, and attempted to show that the battalion which he commanded before being placed on the staff had never left its cantonments. "My men," said this worthy, "did nothing but eat, drink, and chase vermin. They were so badly clothed that I would never hear of them marching against the enemy. Their pantaloons were in such an unservicable condition that the shirt passed through, and most of them had no boots; I was quite ashamed of them."