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The Volunteer Review

AND MILITARY AND NAVAL GAZETTE.

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

VOL. VIII.

OTTAWA, (CANADA,) TUESDAY, OCTOBER 20, 1874.

No. 42

NEWS OF THE WEEK.

Major General E. Selby Smyth, appointed to command the Militia of the Dominion, accompanied by Captain the Hon. Miles Stapleton, Coldstream Guards, as A. D. C., arrived in Ottawa on Thursday 15th inst.

Major Futvoye, Deputy Minister of Militia and Defence, arrived on the 15th inst. after spending a few days at St. Johns, P. Q., where it is understood he intends to establish himself in the event of his being placed on the superannuation list.

We understand that the Government of Canada have had under consideration the claims of the Canadian Militia who fought in the war 1812, and have come to the praise worthy decision of asking Parliament for a grant of money sufficient to give the surviving veterans of that war a small pension. They well earned this, and will not have reason to feel hurt that the regular soldiery were pensioned, while they were left to suffer from neglect.

A despatch from Fort Garry dated the 16th inst. states that the Court of Queen's Bench has issued a warrant of outlawry against Lewis Riel. In the Lepine trial, now in progress. Dr. Campbell, the Bishop of Rykerts and Rev. George Young and Mr. McPherson gave evidence similar to their depositions in the investigation held last fall. The trial will, in all probability, occupy the major part of this week also.

We have received from the Secretary, Captain R. Y. Ellis, the Prize List of the Ingersoll Rifle Association, the annual matches of which will be held on Tuesday and Wednesday, October 20th and 21st at the Association ranges, Hislop's farm, where prizes amounting to \$570 will be competed for. Firing to commence at 8 o'clock. Volunteers to appear in uniform.

Mr. Dawson, after three days "pow wowing" the Indians at the North West Angle, completed the Treaty of last year by locating the Reserves for the different Chiefs and their bands.

Major McDonald, of the Militia Staff of Ottawa, reached Fort Garry on the 16th inst. via the Dawson route, with a large quantity of stores.

Mr. Hugh Blackador, formerly editor and part proprietor of the Halifax recorder, has been appointed Postmaster of Halifax.

Advices from Melbourne state that the annexation of the Fiji Islands to the British Empire has been formally carried out. Sir Hercules George Robert Robinson, Governor of New South Wales, hoisted the British flag on Fiji soil.

A report is current, but discredited in Paris, that Ex President Thiers, who is in Italy, has been captured by brigands,

The steamship *California* which arrived at Victoria, B. C., on the 29th ult., brought \$150,000 in gold dust from the Cassiar mines. New diggings have been struck on Deloire Creek, and there is quite a gold fever in the Pacific Province. A nugget valued at \$800 was taken from a claim on Dease Creek.

Mr. Alexander Begg, Glasgow Emigration Agent of the Ontario Government has had his commission enlarged by an appointment from the Dominion Government. He will now act as agent for emigration to any part of Canada; his address will be Robertson street, Glasgow, for which place he will leave in a few days.

The Empress of Russia arrived in England on Thursday evening and is now at Buckingham Palace. She proceeds to Eastwell Park, Kent, the residence of the Duke of Edinburgh. The occasion of her visit is the approaching accouchment of the Duchess of Edinburgh, which is expected at the end of the present month.

The *Standards* Paris correspondent telegraphs that he hears that Austria and Italy propose a conference of the powers to consider the Spanish note to France in the same manner as the Luxembourg questions was treated.

A London despatch says the compensation paid England by the Madrid Government amounts to £75,000, £40,000 of which was paid on account of the *Virginus* butchery, and the remainder covers outstanding claims. England would not recognize the present Government until all claims were admitted.

It is officially announced that the French war steamer *Oreoque* has just been recalled to Toulon. Her departure from Civita Vecchia implies no change in the relations between France and the Pope. Another vessel will be placed at the Holy Father's disposal at a French port in the Mediterranean.

The Turkish town of Akhiolyi, containing 5,000 inhabitants, and situated on the Gulf of Burghas in the Black Sea, has been totally destroyed by conflagration.

The German Government is considering a proposition for the creation of a Provincial Assembly for Alsace and Lorraine.

The Berlin correspondent of the *Pall Mall Gazette* writes, that it is generally believed that the higher court to which the case will be appealed will take a more favorable view of Von Arnim's offence than the lower court.

It is reported that a Carlist magazine at Artenga has exploded. Several bands of Carlists have recently been defeated and pursued by Republicans with an aggregate loss to the insurgents of fifty (51)

It is stated from Chatham that the authorities of the English War Department are somewhat perplexed as to the disposal of the large sum now in their hands as the proceeds of fines inflicted on soldiers for drunkenness. The whole system of rewards to non-commissioned officers and soldiers is about to undergo a thorough revision with the view to a distribution of these funds.

The Italian Consul at Bucharest has refused to open negotiations for a commercial treaty while the Jews of Roumania are deprived of their civil rights. The American consul, Mr. Peixotto, has taken the same stand.

In repairing the pavement of the Cathedral at Rouen there has been discovered in the centre of the nave a heart inclosed in a leaden box. M. Deville, the historian of the tombs of the Cathedral, thinks that the heart may be that of Sibylla, wife of Robert II, Duke of Normandy.

Pere Hyacinthe seems to agree with Mr. Disraeli as to the coming of a great war. In a speech he delivered at Geneva lately, he said, "he saw in the horizon war raising its hideous head—international war, civil war, religious war."

The death is announced at Turin of Prince John Anthony Lascaris Palmologus at the age of fifty eight. He is said to be lineally descended from the last Greek Emperors of Constantinople, and is the last of the family in the male line.

There are 314 generals of division and fifty brigades in the French army, of whom fifty have risen from the ranks. Since September 1870 134 colonels have been appointed brigadiers.

Le Patrie announces that the French Cabinet has decided to surmount the Vendome Column with the statue of Napoleon now in the Court of the Invalides.

It is said that the Chinese believe the rupture with Japan to be the work of Sir Harry Parkes, in revenge for their ill-treatment of him in the war of 1859.

Some young Japanese are to be sent, at the charge of the Government, to Pilsen, in Bohemia, to learn the art of brewing.

A London despatch states that England will withdraw its diplomatic representative from Rome.

Emily Goldene, with forty members of the English opera bouffe company sailed for New York on the steamer *Celtic* to day.

Herr Madai, President of the police force of the city of Berlin, has used all his influence to have Count Von Arnim sent to a private hospital, where he should be under the surveillance of the police, but without success. The Count's family have offered increased bail to the amount of 1,000,000 thalers, to secure his release from custody.

MARCHING POWER OF INFANTRY.

As the strength of a chain cannot exceed the strength of its weakest link, so the marching power of an army cannot, generally speaking, exceed the marching power of that arm which moves slowest, namely, the infantry. We say generally speaking, because recent suggestions as to the introduction of a powerful force of mounted rifles would, if adopted, somewhat modify our statement, which, however, may be accepted, as substantially correct, until what almost deserves to be called a new arm of the Service be fairly introduced into warfare—if indeed this ever be the case. Of course, on the other hand, it is not always practicable to move an army so fast as the marching power of its infantry would permit, on account of the impossibility of bringing up supplies at an equal rate; still bearing these two points in view, the general proposition holds good that the marching power of any army is pretty accurately gauged by the marching power of its component infantry.

Now, the changes which have been wrought in the conduct of military operations by the introduction of weapons of great range and precision, as also by the construction of railways and telegraphs, have as recent events show, all tended in the direction of making wars short, sharp, and decisive. The natural consequence of this is to impart increased importance to the marching power of infantry; both as regards strategical and tactical operations. At first sight, indeed, it may appear that the introduction of railways has rather tended to lessen the importance of the marching power of infantry, but such a view—though occasionally mooted by the special correspondents of the daily papers during the late Franco-German war—is entirely erroneous. For, in the first place, it must be observed in passing that notwithstanding the rapid speed of a network of railways over the face of the earth, military operations have still sometimes to be conducted in countries where no such means of locomotion exists; witness, for example, the recent Ashantee war. Then again, even supposing the existence of railways in the field of operations, it must be remembered that there are certain limits to their use for the purposes of military transport. There are circumstances under which an army could be marched a given distance in less time than it could be transported over the same ground by rail; the chief elements in this somewhat curious problem being the size of the army, the distance to be traversed, the character of the country as influencing the length of front, which the troops could present on march, the number and condition of the roads, whether the railway is a double or single line, and whether or not there is more than one railway available, and finally the amount of rolling stock which can be obtained for transport purposes. From these and other considerations—as, for example, the ease with which railways can be rendered useless through the enemy making a sudden dash, blowing up the bridges and tearing up the rails—it follows that to quote the words of Colonel Hamley, “the districts even in Europe, are few where existing railways would leave great armies to any very considerable degree independent of the ordinary roads.” When from strategical we converge upon tactical operations, the increased importance of the marching power of infantry, since recent improvements in arms of precision, is too obvious to need

any comment; for troops in the presence of the enemy must now be moved frequently, more rapidly, and over more ground than in former times.

Having thus, we trust, satisfactorily demonstrated the increased importance which attaches nowadays to the marching power of infantry, it now becomes our duty to point out that the subject is one which seems to demand more attention from our military authorities. It is true that a great deal has been done within the last fifteen or twenty years to increase the marching power of British infantry, chiefly in the direction of rendering their dress and accoutrements more comfortable and lighter, and of improving the scale of diet and the cooking of the rations. Even thirteen years ago, a writer in *Colburn's United Service Magazine*, speaking of the ameliorated condition of the British soldier, observed:—“We now give him food that he can eat, and, what is more, that nourishes him; we have lightened his knapsack; we have improved his clothes, his collar and his stock are lower, and his boots are no longer like canoes.” Since the above was written more improvements in equipments have been introduced, the practical result of which course of action has been that in the late Ashantee War our troops on the march to Comassie were actually clothed and accoutred in a sensible style and one adapted to meet the exigencies of a tropical and pestilential climate. Important, however, as these various changes have been, they, after all, do not touch the root of the matter, which is simply the physical power of the soldier to march. The athlete, when preparing for a pedestrian match, does something more than merely exchange his every day clothes for a suit of flannel and a pair of walking-shoes; he goes in for a preliminary course of physical training, and this, in a modified form, is what seems to be greatly needed in the Army. It is unnecessary to recapitulate the numerous observations which have recently appeared in these columns respecting the physical degeneracy of the recruits; for this appears to be conceded on almost all sides as a matter of fact. But such being the case, it becomes all the more incumbent upon the authorities, as we lately pointed out, to insure the proper physical training of the young soldier, and especially endeavour to develop his marching power. For, recurring to the influence of railways on the subject, it is to be noted that they have probably tended to diminish somewhat the marching power of our infantry, in two ways. In the first place, it seems not unreasonable to suspect that “Parliamentary” and “workmen's” trains have somewhat deteriorated the pedestrian powers of those classes of the community from which recruits are drawn, inasmuch as many young men now ride constantly in third class railway carriages, who some years ago would have had to perform the distance on “Shanks's pony.” Then, moreover, troops are now moved by railway or steamer, distances which, in bygone days they would have marched, so that altogether, it is very questionable if the British soldier—looking at his life both before and after enlistment—has as much hard, earnest pedestrian work as in former times. It must be admitted that more is now done than formerly in the way of camps of exercise and route marching out from military stations; but unfortunately, it is to be feared that that strong flavour of “sham” which unavoidably attaches more or less to such exercises, detracts in no small degree from

the benefits which they are designed to produce. Now it would tend greatly to increase the marching power of our infantry, if, when a regiment or a detachment moves from one station to another, it were, whenever practicable, sent by road instead of by rail; for the different spirit of men on a *bona fide* march and on a day's exercise in route-marching must be familiar to many of our readers. Doubtless, in some of our Line regiments we should, under such circumstances, have a good many weakly recruits falling out by the way, and there would probably be a fine row got up in the penny papers by philanthropic fanatics if a death from heart disease occurred in a regiment on the march. Well, so be it; for after all, what is the use of having battalions that cannot march, any more than of having “ships that cannot swim”? We are glad to observe the recent circular of His Royal Highness the Field Marshal Commanding-in-Chief respecting military gymnasiums, although we suspect that more or less compulsory attendance will have to be enforced before these establishments can be expected to play a proper part in the economy of the British Army. As, however, the Duke of Cambridge is thus unquestionably directing his attention to the physical training of the soldier, we may perhaps hope that ere long some more decided steps may be taken towards developing still further the marching power of our infantry.—*Broad Arrow.*

MOUNTED INFANTRY.

Sir,—This is an arm which has been often alluded to by recent military writers and lecturers, but I have heard of no plan for mounting the infantry, except putting them on horseback, a plan which many think would only result in making an indifferent body of cavalry. It would of course, be possible to make a good body of cavalry, but that is not the object: in so far as infantry mounted on horses differed from cavalry, just so far would they be inferior to them.

The difficulties horsesmen have to contend with in fighting on foot are—

1st. That, at most, only half the men can leave the horses, unless the horses are linked, in which case there must be time and a safe place for the horses.

2nd. Even with half the men mounted, the horses cannot be easily moved, except at a slow pace; and if linked they cannot be moved at all.

3rd. Led or linked horses are perfectly helpless—can neither fight nor run away.

I would suggest that infantry should be mounted on light, strong wagons, each drawn by four horses; fourteen men to each wagon—viz., twelve on the wagon and two drivers on the near horses (as in the artillery).

In each wagon should be two double seats, each double seat to hold six men, sitting back to back. The seats should be boxes and hold a field kit for each man and reserve ammunition. The men to carry their arms and accoutrements on their persons. I would have the wagons open at the sides, to give greater facility for getting in and out to the men who sit facing inwards.

The leading horses of each wagon to wear breast pieces, not collars, and both to be saddled—the traces to hook on to the breast-pieces just by girth of saddle, so that by simply unhooking the traces the two leaders are ready to do duty as troopers—there is a driver already on one, and the second driver mounts the other, the left hand man on front seat mounting the wheeler and taking the place of driver.

* “Operations of War,” Page 51.

* “Military Gymnastics,” *Broad Arrow*, May 30, 1874.

The drivers to be armed with swords and pistol, the other men with rifle and bayonet. Say that a regiment consisted of 80 wagons, 320 horses, and 1120 men. - Of these, 960 could fight on foot, and the empty wagons could be moved about at a gallop from one sheltered spot to another without the slightest difficulty.

If a small body of cavalry were required to reconnoitre, pursue, &c., the regiment could furnish two squadrons of 40 files each in addition to 880 men on foot, and the wagons could be still manœuvred as before with two horses in each.

Let us see how many men and horses it would give the same fighting force if the men were mounted on horseback:—

	Men	Horses
For two squadrons of 40 files each.....	160	150
For 880 men on foot, another 880 would be required to hold the horses.....	1760	1760
Total.....	1920	1920

Instead of 1120 men, and 320 horses, and 80 wagons.

Now, it is said that the Horse Artillery can keep pace with any cavalry regiment, and over almost any ground.

Where artillery could go infantry wagons could go, and if sufficiently horsed, at the same pace. Perhaps another pair of horses might be required to each wagon, but I do not think so, because mounted infantry would very rarely be required to gallop, not nearly so often as Horse Artillery; and in action, the only time when galloping would be necessary, the wagons would be generally empty.

For flank attacks, as suggested by Colonel Chesney, such a force would be particularly valuable, because not only could the mounted infantry themselves be rapidly conveyed to the point of attack, but the empty wagons could return and bring up a load of infantry to support them.

Again, although mounted infantry ought to be a distinct and specially trained corps, yet this is not absolutely necessary; if drivers were forthcoming, any regiment might be turned into mounted infantry, without any additional training.

It is not easy to say without trial whether mounted infantry could defend themselves against cavalry whilst on the move, but I should think that a wagon full of men armed with rifles and bayonets would be a hard nut for cavalry to crack, because the cavalry could not ride over them, and the rifles would tell at close quarters, even if the wagon were being dragged at a gallop over heaps of stones.—Your truly,

WAGONER.

THE GERMAN ARMY.

The summer inspections are concluded, and inspectors, general officers, and military commissioners, German and foreign, are unanimous in declaring that the guard has never been in such noble form, exhibited so grand a physique, and given proof of such perfect fitness to take the field at a moment's notice, as this year. *Ex uno disce omnes.* I have no doubt that what I can guarantee as truthfully to be spoken of the guard may be asserted with equal veraciousness of any or all of the other seventeen corps d'armee of which the German army is composed. Such an army the world has never yet seen as that which the German Empire has provided itself with to com-

mand peace," Field Marshal von Moltke's definition bath it. No two European armies, choose whichever two you will, and combine them in the way that may offer most perils and inconveniences to Germany, could at present contend, in the opinion of the very first military authorities of this country, with any hope of ultimate success, against the gigantic offensive and defensive forces at the disposal of the German War Office. It is not only that the maximum of physical vigor, discipline, and excellence of armament has been attained in this army, but that the Fatherland is fortunate enough to own seven or eight generals of first rate capacity, and fifty or sixty more who are perfectly equal to assuming the responsibilities of a large independent command, and to conducting a campaign of the first magnitude to a successful conclusion. Moreover, this army is officered by gentlemen of whom it may without the least exaggeration be said, that every one of them is capable of efficiently fulfilling the duties incident to a rank at least one step higher than that which he actually holds in the service. The Prussian Offiziers Corps is as far superior in every soldierly respect to that of Russia, France, Austria, or Italy, as Moltke, Werder, Blumenthal, Goben, Stieble, or Stoschare to any six generals that can be selected out of the united non-German European armies, or as the Mauser and Krupp are to the almost innocuous Brown Bess and smooth bored muzzle loading field piece of thirty years ago. In fact, the German army which earned for itself in 1871 the admiration of the world, has undergone such improvement since the conclusion of the French war that experts pronounce it to be at least twice as effective as it was three years ago.

Peace, indeed, is the German military man's busy time, when he is so hard worked that life becomes a burden to him; the only relaxation approaching anything like a holiday—and what a holiday!—he ever gets is during war time. During the three military years that have just been completed by the holding of the 1874 summer inspections, the Prussian army has been entirely re-armed and taught the use of its new weapon; it has learned a new tactical drill; its artillery organization has been totally altered, and its cavalry has been thoroughly instructed in a branch of offensiveness that will, I fancy, rather astonish and discomfit the next enemy Germany may think fit to engage. Of the rank and file not one man in a hundred of those who served against the French is still under the standard; but, fine fellows as were the soldiers who won the victories which are recorded in that extraordinary list—unbroken by reverses—that begins with Weissenburg and ends with Montretout, there can be no doubt that the troops now constituting the peace strength of this army are finer fellows still. In the guard, especially, the increment in height and breadth of the men—particularly in the heavy cavalry regiments—is strikingly noticeable to any one whose eye has been familiar for the last half dozen years with the appearance of these famous household regiments. Still more obvious to the casual glance is the improvement in quality of the chargers recently furnished by the Kemont Commission. The Prussian trooper's charger, was always a strong, serviceable, hardy beast, but he was by no means handsome or smart looking, and he appeared a little too small for the weight he had to carry. Even the guard chargers failed to come up to the British cavalry officer's notion of what crack regiments' mounts should be, they never looked equal to their work, though I am bound to say they proved themselves to be so during

the war in France; their grooming was always a little coarser than we fancied it should be; and a really good looking troop horse was as great a rarity as an ugly officer's charger. You should see the Guard Cavalry mounts this year. It would puzzle Aldershot to show anything in that line handsomer or more thoroughly fit for active service. The chargers of the Guards du Corps and Garde Cuir rassiere would do the highest credit to the Enniskilling or to any heavy Cavalry regiment in our service. All the Light Cavalry, too, is admirably horsed, and there is really nothing to choose between any of the regiments, but some of the professional critics here assavrate with the utmost vehemence that nothing in the Prussian service (and, *sous entendu*, in Europe) can touch the 2nd Lancers (Garde Uhlan's) and the Red Hussars, stationed at Potsdam. Man for man and horse for horse, I would back our 10th Hussars or 12th Lancers against the latter; still they are magnificent troops, all but peerless.

It is a somewhat curious fact that nine out of ten of the conscripts from the new Reichslander choose the Cavalry as the branch of the service they prefer serving in, and that considerably more than a half of those would-be troopers beg to be drafted into Grand regiments, for which they are generally, by their stature and strength, naturally qualified. I have taken particular pains to inform myself respecting these young soldiers from Elsass Lothringen, and received from all quarters the most satisfactory accounts of their conduct and bearing in the service. They are almost invariably obedient, good-tempered, tractable, and extremely desirous to learn their duty. Their officers find them duller and more difficult to teach than the average German—much more so than the Bradenberger, Rhineland, or Mecklenburger—but very trustworthy, anxious to please, and *bons camarades* with their fellow troopers. Their make desirable officers' servants, show more aptitude for riding than for any other department of their military instruction or exercise, and exhibit no proclivities towards drunkenness or quarrelsomeness. Personal friends, who have Alsatians in their squadrons here and in other German garrison towns, tell me that they wish for no better material out of which to manufacture good soldiers than the "Annectaten." The Lorrainers do not get on so rapidly, nor are they nearly so soon reconciled to their military duties, as the Alsatians, for the simple reason that they speak nothing but French on joining their regiments, and have to wade through the double drudgery of learning German as well as drill. They are, however, very well-behaved, quiet, and biddable, as a rule; and it is pleasant to hear that the German comrades are, on the whole, kind to them and tolerant of their short comings.

By next November the German army will be brought up to the full peace footing strength accorded by this spring's Army Bill—the maximum of 401,657 men, that will enable it, ten years' hence, to expand in war time into a force of from 1,500,000 to 1,600,000 men, 350,000 horses, and above 3,000 field pieces. We may be quite sure that despite the pardonable prevarications of Von Kamecke during last session's army debate, so long as King William lives this maximum, wrung with such difficulty from the German Parliament, will be kept up to its extreme limit, and that the National Defence Budget will steadily increase from year to year. It may be a comforting reflection to peace lovers that *la revanche* may be regarded as postponed *sine die*. There is

not the least possibility that Franco will be in a position to measure her strength with that of Germany—that is, with the least chance of success—for the next quarter of a century.—*London Telegraph.*

HINTS TO COLONIAL VOLUNTEERS.

The following original and useful hints to Volunteers, by a well known colonist and African traveller, Mr. T. Buines, F. R. G. S., appears in the *Natal Mercury*:—"Durban, November 26th, 1873—In reference to the subject on which we were speaking the other day, it would, perhaps, be impertinent for a mere artist to offer you advice upon military matters. Yet there are peculiar exigencies in Kafir warfare that call for some occasional modification of our discipline, and, perhaps, a few hints gleaned from experience during a campaign in Kaffraria, on the borders of the Eastern Province of the Cape Colony, may not be unwelcome. First, I would mention the provisioning of a patrolling force, inasmuch as our own Volunteers have suffered so greatly on the recent march to the Drakensberg. Whenever a division moved it was, of course, accompanied by commissariat wagons as far as possible, but if any portion of it was detached on patrol duty, three or six days' rations of bread and groceries were served out to each man, who kept his food in his own haversack; and thus with his flint and steel, his water canteen, or 'platvatjee,' and his pannikin, or small mess tin, was for the time perfectly independent of the commissariat, except for beef, and of this, if the patrol was successful, there was generally no lack. The advantage of a little essence, or preserved meat, or compressed vegetable, which could be carried in a small compass, to give a relish to the soldier's bread when he cannot get fresh beef, would be obvious; but I am now speaking only of absolute necessaries, such as were served out to us in 1852 and 1853. Various ways of extemporising tents will occur to every one. Among the lancers, two or three men used to take one of their large blankets, stick a lance and two swords into the ground, and pass another lance horizontally through the becket of the first and the hilts of the seconds; this formed a ridge pole, over which the blanket was stretched and pegged out at the corners, their saddles, rugs, and other blankets formed their pedding. I took three yards of double width unbleached, calico, stitched a small cord along the centre, cut angle pieces to the ends, sewed tupe loops round the sides, and thus with a couple of sticks, no longer than the ramrod of a rifle, I had a perfect tent seven feet long, two feet six inches high, and the same width, giving ample room for my saddle, skitch book, and myself, and keeping me perfectly dry during the heaviest rain. Of course, I would seek a rising ground to lie upon, and cut a trench, if necessary, with any sheath knife to drain the water from me. During the war commencing in 1850 and lasting into 1853, the Sporting Club, Graham's Town, was made the nucleus of a corps called the Albany Rangers, and did good service on several occasions. Many of their rifles cost seventy guineas each, and had one barrel rifled and perfectly sighted from point blank to 1100 or 1200 yards, and the other barrel smooth, to be loaded with buckshot or loopers, which were found very effective at sixty or eighty yards. The captain, I believe, had several rifles, and was trying to get one to shoot with accuracy at 3000 yards; at 1800 and 2000 he could shoot quite well enough to annoy an enemy, and this was no small advantage, supposing part of the corps

to be engaged on one side of a kloof, while their comrades on the other were taking the Kafirs in the rear. They had no uniform, but wore drab or bush brown duffels, or moleskin jackets, moleskin or leather trousers, wideawake hats, and brown leather waist-belts and pouches; veldschœns, or boots, according to the weather. When the 74th arrived and first went into action they wore thin white jackets, which were admirable targets for the enemy, but on a hint from some of the burghers, Colonel Fordyce told the men to take their duck-frocks and dye them with mimosa bark and iron to a dark gray. He took away their cross belts, stocks, and all the pipeclay, and gave them brown leather ammunition pouches on waist belts with a little strap over the shoulder which they could tighten at pleasure. He made them each wear a black necktie, and the regimental always looked well and uniform in a good working dress. The mounted Burgher Corps and levies gave great attention to dismounted skirmishing. I do not mean foot drill without their horses, but actual dismounting and leaving their horses a hundred yards or more either perfectly alone (most of the old colonial horses being trained to stand), or with a guard; and the facility thus acquired in leaving the horses when they would be only an encumbrance in bush or broken ground, skirmishing as long as necessary, and returning to them again if they were left alone, or having them brought to meet the dismounted men at any given point if they were left with a guard, was invaluable in real war. Thus suppose a corps chasing a number of Kafirs who took refuge in a thick bush, or stony hill, with broken ground about it; the corps would feel that they were only endangering their horses and themselves by remaining in the saddles; they would dismount, leaving every fourth man to take the horses to any hollow that could give them shelter while the dismounted men would charge forward until they gained cover in the broken ground and commence sharpshooting. Then, say that the commander thought he could gain an advantage by sending his left troop to outflank the enemy, he would send them not to their horses, but at such an angle from their course that the guards holding their horses could strike diagonally across to meet them, when they would at once mount, gallop to their new position, and dismount to engage the enemy. I have known men who trained their horses either to stand and wait, or to follow them like dogs if they were called. I have also known men who could shoot from either right or left shoulder with equal facility, an immense advantage to horsemen when surrounded with enemies. In setting up a bell tent I would put up the one allowed to myself and the interpreter by myself almost as quickly as six soldiers could erect this. I would stick a peg in the centre, and I had the lashing cord knotted at the radius of the two circles of pegs, hitching it on to the centre peg. I would draw two circles on the ground, then standing in the centre, I would throw four pegs on each circle, dividing it as fairly as I could into quarters, and four more pegs on each quarter. I would then drive them in, spread my tent, hitch the lines and loops and lines on the pegs, slip the under end of the tent pole in the top of the tent, and hoist away. I would then go round and tighten my cords at leisure. It is a common practice with elephant-hunters who have light-triggered rifles to let one man fire the guns of himself and comrades. Thus, if two or more men are in ambush waiting for an elephant, they agree that No. 1 shall fire, Nos. 2 and 3 raise

their rifles and take steady aim, very slightly pressing their triggers; No. 1 then aims and judging the proper moment then fires, and, either by the concussion of the air, the slight shock given to the others, or involuntary contraction of the muscles, their triggers are pulled at the same instant."—*Broad Arrow.*

COLONEL GORDON'S EXPEDITION.

Letters from Colonel Gordon's expedition, dated from Fashoda, June 3 to 18, have been received, which left the various detachments on the White Nile (lat. 12 deg. N.), making the best of their way from Khartoum to Gondokoro. Summarising the correspondence, the *Times* says:—

"The Governor of Khartoum, according to these letters, had evinced great jealousy of Colonel Gordon, and was much displeased at the despatch of Messrs. Gessi and Anson to the Bahr el Gazelle, as he feared they would interfere with his operations there, but the people of the place were on the best terms with Colonel Gordon, whom they desired to remain with them at Khartoum. Up to May 30, the boats with the heavy goods had not arrived from Berber, and on that day Messrs. Gessi and Anson, with twenty two white (Arab) soldiers, started for the Bahr el Gazelle, towing three large boats, with corn, &c., to make friends with the natives and look about for proper stations. Colonel Gordon has appointed as mudir (governor) there a man who was once a notorious slave-hunter, and who knows every inch of the country. They are at perpetual war, and hate the whites—i. e., the Arabs, who take their cattle and ill-use them. On the 1st of June, M. Witt, the German botanist, and the American major, with sixty soldiers, started in the *Khedive* steamer, with three boats in tow, for Gondokoro, and next day Kemp and Russell were ordered to follow in the *Mansourah*, a 100 ton paddle, and take sixty soldiers, the remainder remaining behind with the colonel."

In a letter dated June 18 we read:—

"The colonel has written to the Anti-Slavery Association to say if they send out a representative he will give him all the help in his power. What Colonel Gordon intends to do in reference to slavery I cannot say, but I imagine he is gaining information and resolving the best way of dealing with the open trade. You see the people do not think it is wrong, and one fellow at Khartoum who knows a good deal of what is going on said that the English and French carry on the slave trade when it suits them, and ship off people to work on their sugar and rice fields, and want to keep the markets all to themselves. He declared he knew merchants who had seen our slaves on the Gold Coast. The demand for slaves in Turkey is enormous, and you know that in Cairo slaves are needed for all the native houses. The other day one of us dismissed a servant, and the fellow was delighted. 'I will buy a couple of slaves,' he said, 'and take them to Khartoum, where I shall sell them at a fine profit.' The colonel has accurate information as to four large trading stations for slaves. A pretty Abyssinian girl can be bought any day in Khartoum for forty dollars, and it will be difficult to eradicate the practice, which is justified by the Koran. The missionaries do not make any way—in fact, they retrograde; and our own efforts to put down a very or slave trade on the coast may give us some idea of the difficulty of dealing with it in these immense regions, where you may travel for months without

meeting what is called 'a constituted authority.' The Khedive is spending enormous sums on this expedition, and has given the most explicit directions that slave-hunting is to be put down at all hazards, and Colonel Gordon, who is a very far-seeing, long-headed man, may be relied upon to take the best way of carrying out the Khedive's wishes."

Mr. Richter, an English mechanical engineer, has called attention to the large number of disasters which have recently befallen iron vessels trading to the port of Melbourne in Australia. While he believes in iron ships when built of sound material and properly constructed, he thinks that wooden vessels are better and safer than many iron vessels now afloat. The fact that the wrecked and dismasted vessels referred to were disabled, not in one gale, but at different times and in widely different latitudes, shows, in Mr. Richter's opinion, that iron vessels not constructed on the best mechanical principles carry the causes of their own destruction within them. Iron ships are too rigid and crank, and do not yield enough to heavy seas to avoid severe shocks to their chronometers, besides being in other respects faulty in construction. There can be no doubt, he writes, that the loss of the British Admiral, with seventy lives, was due to the rate of the chronometer being altered by such shocks, causing the ship to be placed 100 miles or so ahead of where the captain believed her to be. A very similar instance occurred several years ago in the case of a vessel bound from Sydney with coal for San Francisco, when on a foggy morning she went on a beach 110 miles south of San Francisco, at a time when the captain made out his position as 200 miles out to sea. It is probable, too, that the compasses of the British Admiral were affected by a magnetic attraction known to exist on the coast between Melbourne and Adelaide, from which latter cause other vessels have been wrecked. The steamship *Airdale* was wrecked on the coast of New Zealand, where the beach is composed largely of steel sand—wrecked on a set course which she had never altered for fifteen years, thus seeming to show that there are serious occasional disturbances even in these attractions. These influences are stronger on compasses in iron vessels than on compasses in wooden ones.

A great capture of slaves by her Britannic Majesty's ship *Vulture*, Commander A. T. Brooke, is reported. The *Vulture* was cruising off the north-west coast of Madagascar on the morning of the 11th of August, when a sail to the south-west was reported by the mast head man. Chase was given, and nearly five hours afterward the dhow was come up with and boarded. It was full of slaves—forty-one men, fifty-nine women, and 137 children. The slaves were suffering acutely from weakness and cramps, having had to remain in one position for a long time. Several of the children were unable to straighten their legs for three or four days after they were received on board. One woman was found buried up to her neck in damp sand at the bottom of the slave dhow, under the lower slave-deck. The owners were thirty-five armed Arabs, and the Captain determined to take them to Zanzibar and have them summarily dealt with.

CORRESPONDENCE.

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

(FROM OUR OWN CORRESPONDENT.)

STANSTEAD CAVALRY CAMP.

The Provincial Regiment of Frontier Volunteer Cavalry who have been encamped on Stanstead plains, Eastern Townships, since the second of October, struck their tents and marched to their respective Head-Quarters on the 13th inst., having been previously inspected by our worthy and respected Deputy Adjutant General, Colonel John Fletcher, C. M. G., who, accompanied by Brigade Major King and District Paymaster Major Anyrauld, performed that duty early on the morning of the 9th inst. This very fine and well mounted regiment of Volunteer Cavalry is composed as follows: Major J. H. Taylor, of Cookshire, commanding; Lieut. Colonel R. Lovelace, (late of H. M. regular army) acting Adjutant and Superintendent of Cavalry movements; Surgeon Paget, M. D.; Quartermaster Lieut. Taylor.

1st Squadron Cookshire, Captain French, Lieut. Taylor, and Cornet Chaddock.

2nd Squadron Sherbrooke, Capt. Read.

3rd Squadron Stanstead, Captain Wood, Lieut. Mansur, and Cornet Moulton.

4th Squadron Compton, Capt. F. Stimpson and Lieut. Murray.

Although for drill purposes the term squadron is introduced there are really only four strong troops, who have long been accustomed to be told off and exercised as squadrons, indeed it would be very distasteful to the officers and men of the different localities if it were otherwise, they much prefer this system as it keeps their individuality; a privilege of which they are very jealous.

The weather during the annual twelve days' drill has been tolerably fine but the nights generally very cold.

The discipline of the camp has been well kept up and the conduct of the men without a single exception most orderly. The tents were pitched on a dry and pleasant plot of ground, on the farm of Captain Starnes, a retired officer of the U. S. army, who took the contract for forage and rations as well as caterer for the officers mess. A little discomfort was experienced for the first two days from the non arrival of tents and blankets, but the hardy frontier troops did not grumble, and with the officers made themselves as comfortable as they could in an old cheese factory, hard by the camp ground, and get their horses in barns and stables belonging to the surrounding farm houses. Query, would not the Government save a good deal of expense if every squadron of cavalry were provided with their own camp equipage in a similar manner to the Granby and other field batteries? Were this the case, and the officer in command held responsible for its safe keeping, a cavalry

corps could take the field and encamp when on the line of march at all times without delay or inconvenience; this, however, is a matter for the consideration of the Head Quarter Authorities.

At the target practice Corporal Humphroy of Captain Wood's squadron made the highest score. There is one practice that the Volunteers, I am sorry to say, seem to take especial delight in doing not only about the camp but on the line of march—I refer to the habit of wearing civilian hats of all descriptions whenever they can get rid of their forage caps—the excuse being that the latter are too small, too cold, &c.

Long boots and strap spurs, as now worn by all mounted corps in the British army, is undoubtedly the best for Volunteer Cavalry, and the difference in appearance of those who had been provided uniformly with these appendages, as in the Stanstead squadron, and those who turned out in long overalls without straps and boots, some short, some long, and in too many cases without spurs, was most apparent; the latter having a slovenly look and the former a smart and soldierlike one. The men taken as a body are really a fine set of fellows and most attentive and anxious to do their duty properly, and if the little matter above referred to were looked into it would very much increase the *esprit de corps* of the frontier troops. This regiment is now only provisional, but it is hoped will soon be gazetted as a Cavalry Regiment of the Dominion, and their young and popular commander Major Taylor promoted to the rank of Lieut. Colonel.

A Field day under the command of Lieut. Colonel Lovelace took place on the 10th inst. when the four squadrons formed up as a regiment were put through a series of manoeuvres, including skirmishing mounted and dismounted, sword exercise, &c. The whole being very creditably performed, the charge in line in particular. The horses have evidently been well trained to stand fire, and when the Colonel directed horses to be linked, and skirmished to the front, but two men were left with each squadron as horse holders. A large assemblage of the inhabitants of Stanstead and the surrounding village attended the field day as did also very many of our American cousins on the other side of the line, to whom our British cavalry tactics doubtless appeared very different from their own.

The services of Lieut. Colonel Lovelace, Surgeon Paget, Quartermaster Taylor, and last though not least, Captain Starnes, the contractor, have been well appreciated by all concerned. The splendid band from Stanstead under the direction of Mr. Parsons also contributed much to the enjoyment of the troops by their performance in camp, and on the whole the Frontier Regiment of Cavalry have every reason to be well satisfied with their brief sojourn on Stanstead plains.

The Editors of the *Gazette and Evening Star* of Montreal, kindly forwarded through Col. Lovelace one hundred copies of their respective journals daily to the camp grounds, which, it is needless to remark, was much appreciated by the officers and troops.

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The Volunteer Review,

AND

MILITARY AND NAVAL GAZETTE

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

OTTAWA, TUESDAY, OCT. 20, 1874.

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

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

We are indebted to Lieutenant Colonel **STUART**, of the Adjutant General's Department, for the following important piece of news, which we publish for the information of the Canadian Army.

The following General Order, dated Horse Guards, London, August 1874, respecting Officers' Dress, has been published.

"The scarlet patrol jacket authorized by General Order 71 of 1872 is to be discontinued, but those now in possession may be continued in use as laid down in section 12 of the Queen's Regulations and Orders for the Army until worn out.

"Subject to the above exception, tunics must be worn on all occasions; but in order to save expense officers may furnish themselves with a second tunic of serge or

light cloth (in all other respects the same as the Regular tunic) to be worn upon those duties now sanctioned for the scarlet patrol jacket."

This *Ottawa Times* of the 2nd inst., announces that Major General **SUTLEY SMITH**, of the British Army, will sail from England on the 12th to assume the command of the Dominion Army. While this announcement cannot but be acceptable to the officers of the force we should like to see it accompanied by the *Gazette* affirming the appointment of Colonel **WALKER POWELL** as Adjutant General; but perhaps, this latter is held back in order that the *Gazette* of the "General Staff" should be made at one and the same time. We are sure that General **SMITH's** appointment will be most gratifying to the force, and equally sure that of Colonel **POWELL** is most earnestly desired. We shall await the arrival of the Commander-in-Chief before saying more on this subject, especially as the advent of a new Minister of Militia bids fair for the infusion of more effective energy in the Department, and has been acquired in the subordinate affairs of command and staff appointment, so that no department of the service is strange to him. This appointment cannot fail to give great and general satisfaction to the officers of the force generally, for it marks the era when the higher ranks of the Canadian Army were thrown open to those officers who had aspired to fill them. We congratulate the Force and the country on Colonel **MACPHERSON's** appointment.

The *Ottawa Times* of the 2nd inst. announces the approaching retirement on superannuation of Major **GEORGE FETVOYE**, Deputy Minister of Militia, and the probable accession of Colonel **MACPHERSON**, late Deputy Adjutant General and now head of the accountant's department, to the vacant office, a change which the development of the militia service and its importance as a military organization imperatively demands.

The service and experience of Colonel **MACPHERSON** are eminently calculated to benefit the department of which he is to be practically the head. The growing exigencies of the Canadian Army requires a soldier should fill the position which the inception of the legislative measures necessary for its organization had delegated to a lawyer, and it is peculiarly gratifying to know that Colonel **MACPHERSON's** experience has grown with the growth of the force of which he is to be the official head.

An article from a recent issue of *Broad Arrow* entitled "Infantry versus Artillery" will be found in another column. It has been copied because it shows, although in an imperfect and not entirely satisfactory manner the doctrine we have always held and advocated, that infantry properly handled were still as efficient as they ever have been not

witstanding recent improvements in modern artillery, and that the three arms—infantry, artillery, and cavalry—in the order they are named bear the same relation to each other and to the tactical application of a military force as they have ever done since regular armies were first marshalled and the principles of modern tactics recognized.

It has been our ardent wish to have experiments of the kind undertaken by the Bavarian and Swiss military introduced into our ordinary annual drill manoeuvres, the cost would be comparatively little, indeed need not exceed that annually incurred, while the advantage would be so great as to warrant almost any ordinary or possible sacrifice; for let it be remembered that if our troops are to be engaged in active hostilities at any time during the next two generations they will not assume the shape of the attack and defence of strongly fortified positions, but contests with infantry, artillery and cavalry, either in the open or under such natural cover as our woods can afford. It is also very evident that cavalry will play a very secondary part indeed in such a contest, and that the question of "Infantry versus artillery" is the one with which we will have principally to deal. Now, if those experiments are worth anything they prove that artillery against a well trained and well handled infantry is inoperative. It is stated by a competent artillerist that at 800 yards an infantry soldier will present a mark no larger or better than a quart bottle at 100 yards; a gun with its detachment would present a front equal to two quart bottles in height and six in width. Moreover, modern artillery fire within 1,000 yards is uncertain in range and deviation, so that a skillful officer able to get twelve or fourteen crack shots within 800 yards would stand more than a chance of completely silencing the gun and probably cause the battery to relinquish the position, and advantage few soldiers will fail to appreciate; but the men who are to do this must be men of nerve and endurance capable of properly estimating what artillery fire is worth and the extent of its precise effect. Now, our mode of training infantry soldiers is not calculated to produce men with the specified qualities. At a rifle meeting the ranges are accurately measured, the contest is carried on without any disturbing element, while in the field of battle the danger is apparent, and a contest between both arms requiring the greatest steadiness of nerve and indifference to danger on the part of the individual infantry soldier must be carried on amidst excitement, uproar, and all the disturbing causes of a battle field. It follows that in training we must seek to imitate as far as possible all the "pomp and circumstances of glorious war," and in any experiment carried out as much of the noise and excitement as possible should be kept up; the blank cartridge practice should also be made available towards this end, and mock

combats between infantry and artillery encouraged. There is no need as yet to abandon the "thin red line," nor will modern artillery swarms affect the principles of modern tactics. The qualities pre-eminently necessary in a soldier are daring, celerity of movement and obedience to orders. We are no believers in "educated intelligence," for very obvious reasons, but activity of movement and endurance if coupled with common sense can easily be trained to perform with promptitude and honor the duty the soldier owes to his country. But it is necessary he should be trained in connection with all the accessories of his profession, and a primary qualification is that he should possess good "marching power."

We copy today from *Broad Arrow* of 15th August, two very valuable articles; the first on the "Marching Power of Infantry," and the second on the transport of "Mounted Infantry," which leads at once to the consideration as to whether in modern military organization, with all its reforms and looseness of discipline, the great element of transport has not been almost entirely neglected and artificial means altogether relied on to the total or almost total abnegation of the natural powers of the troops. The chief value of infantry, as compared with cavalry, consists in the larger number of effective men which can be thrown into an enemy's territory—their greater nobility—endurance, and the minimum of *impedimenta* which they require. The value of an army consists in a great measure on its marching powers, and if those are neglected or suffered to fall into desuetude the infantry soldiers in the hour of need will be found wanting. It has been too much the fashion lately to rely on the artificial aid afforded by railways or other modes of locomotion for the transport of troops, but the idea that those could be available in actual conflict for anything more than the supply of ammunition and provisions is absolutely preposterous. During the late war the French railway system organized especially with a view to such a contingency, and on strategic lines, failed altogether in the effort to discharge its proper functions, because the lines were crowded with the troops to the disarrangement of ordinary traffic. And in countries like Great Britain or Canada where no attention whatever has been paid to military considerations in the original designs for a railway system, it is obvious the case would be even worse. Nor was Prussian experience any better than that of the French during the contest—wherever they forced the railways to set aside ordinary traffic to transport troops *en masse*—it always ended in blocking the line sooner or later.

The lesson for us then is that we should at our camps of instruction teach our troops the art of marching, long distances too, regardless of weight or weather.

Troops that can march 20-25 miles per day have a very decided advantage over those who only can move at the rate of fifteen, and are likely to be everywhere superior to the forces transported by railway. Where the marching power of the infantry is developed and relied on it can with certainty be predicted at what particular time a given force can be massed on a given point; such is not the case with railway locomotion, a single break of any kind disarranges the traffic of the whole line, and the loss of a bridge, culvert or half a dozen rails would be likely to lead to serious consequences. The proper use of railways are auxiliaries for supplying what may be called the secondary bases of operations with material. Troops once concentrated on the grand base should be allowed to find their way to the front as fast as the marching powers will allow. The suggestion for transporting infantry by waggons is good if it could be proved that it was absolutely necessary or that such a manoeuvre would really advance the success of the operation undertaken. The need of mounted infantry is not proved by any experience yet designed; exceptional cases have occurred in which irregular cavalry have been used with effect, but those cases prove no general rule. On the contrary, "Wagones" shows that "Mounted Infantry" is both as cumbersome and inefficient an arm of any service as was ever devised by dilettante military amateurs; such a force would be about as useful as the famous *Horse Marines*, of which "Captain Jack" was such an example and ornament. In the mean time it would be well for our military authorities to study the consequences of developing the "Marching Power of Infantry."

Court martials are almost unknown in the Canadian Army, nevertheless the following from *Broad Arrow*, of 12th September, will be interesting to our readers, as it raises a legal point of some moment. The rules excluding lawyers are for very obvious reasons intelligible enough—it is the actual facts—and not evidence—which a court martial requires, and in order to arrive at those arguments is not necessary but the exclusion of witnesses is—

"A legal question of not a little importance arose at a court-martial held at Woolwich on Friday, September 4, when Sergeant Major Cooper, of the Royal Artillery, was charged with misappropriating sums of money amounting to £68, entrusted to him for the payment of bills for the mess expenses while stationed at Clonmel. The Court consisted of Major King, of the Field Artillery (president), and Major Staveley, acting "as adjutant," says the report, but we presume as prosecutor. Mr. H. Pook, solicitor, of Greenwich, appeared for the defence, and prior to evidence being taken he made a written request (not being permitted to speak) that all witnesses who were to be examined should remain out of court. This request, as the report states, was torn up, and a negative answer given. The examina-

tion then proceeded, and upon certain books being produced containing entries which were intended to be made evidence of, Mr. Pook made a second request that he should be permitted to look at the books; but receiving a direct refusal, he said he must withdraw from the case, and, as he was not allowed to discharge his professional duties, would at once return the fee which the accused had paid him. The trial was then adjourned, but two mounted soldiers were subsequently despatched to the residence of Mr. Pook at Greenwich, with a message that he could have free access to the books, and that the court would resume the sitting at nine o'clock on Monday morning. Mr. Pook, not having arrived home at the time of the messengers' calling, subsequently sent a managing clerk to the president of that court, stating that another professional engagement would prevent his attendance, and asking for an adjournment of the hearing until some other day, but this was not acceded to. The court-martial was concluded on Tuesday, but the result is not yet known. With reference to this case, the "Queen's Revelations," as well as the usages of the Service, distinctly state that, although a prisoner under trial is at perfect liberty to employ a legal practitioner to assist in his defence, "it is an admitted maxim on all courts-martial that counsel are not to interfere in the proceedings, or to offer the slightest remark, much less to plead or argue; but a prisoner is not precluded the advantage of the presence and advice of any military or private friend, or debarred from retaining a professional adviser if he thinks it advisable to employ one. Courts-martial are, then, more than ever, particularly guarded in adhering to the custom which obtains of resisting any attempt to address them on the part of any but the parties to the trial; a lawyer is not recognised by a court-martial, though his presence is tolerated as a friend of the prisoner to assist him by advice in preparing questions for witnesses or writing them out for him, in taking notes, and in shaping his defence." (*Simmons on the Constitution and Practice of Courts Martial*.) Mr. Pook ought to have been, if he was not, aware of this, and have confined himself to the passive and not active assistance of his client, and, though the court egregiously erred in refusing to allow counsel to examine the books, we can hardly credit the report that it went so far as to tear up, as well as refuse to allow the written request of Mr. Pook, that "all witnesses who were to be examined should remain out of court." If this really was the case, we feel assured that the officer to whom the proceedings are submitted for confirmation will take due notice of the fact; but we can hardly credit such an assertion, as the president of the court must have been well aware, that, though they had the power of refusing the request they had no right whatever to destroy the document, as it should be duly "marked," signed by the president, attached to, and duly noted in the proceedings. As the question of privilege is one of importance, we are rather anxious for some confirmation or contradiction of the report.

The third series of "Oberon Torpedo Experiments" have been failures, pure and simple, as all those heretofore tried have been. We cannot congratulate our readers on a single successful trial during any one of the many experiments under ken at

home and abroad with this weapon. Although we have published an ample historical review of the toy, the two following paragraphs are from *Broad Arrow* of 12th September, the latter entitled "Torpedo-Officers, R. N.," is suggestive enough.

"The third of a series of torpedo experiments arranged by the Oberon Torpedo Committee, of which Colonel Sir W. F. Jervis is president, was to have taken place on Friday afternoon in Stokes Bay, near Portsmouth, but at the eleventh hour it was found necessary to postpone it in consequence of some of the minor arrangements not having been completed in time. As our readers are aware, the *corpus vile* which is operated upon is an old paddle steamer, the *Oberon*, which has been fitted with an iron double bottom, similar to the *Hercules*, the object of the experiment now in course of execution being to ascertain the distance at which a submarine torpedo can be sunk from a vessel at with the certainty, barring unforeseen contingencies, of the mine when fired taking effect. The two first experiments were with an iron cased torpedo, charged with 500 lb. of Professor Abol's gun cotton, placed respectively at 100 and 80 ft. horizontally from the broadside of the *Oberon*, which was moored in Stokes Bay, about a thousand yards distance from Fort Monckton. The two first experiments showed that at those distances a torpedo would inflict but little injury upon the hull of an ironclad. The third experiment, which took place on Saturday afternoon, was looked forward to with great interest, the distance between the *Oberon*, which occupied her former position, and the hidden engine of destruction having been reduced to sixty feet, the quantity of gun cotton used being the same as on the last occasion, and, as then, saturated with water. At a quarter to four o'clock, all the necessary preparations having been made, the torpedo was fired by means of electricity by a party stationed in Fort Monckton. The upheaval of water which followed, accompanied by a shock which was perceptibly felt on board the Government tugs and other craft lying in the vicinity, were very much higher than on the previous occasions, but the volume of water was not so large, and owing to the wind blowing along the side of the vessel none fell upon her deck as before. There were some rabbits and lambs on board, but they escaped without any injury, and the only result which a somewhat cursory examination disclosed was that the hatchway combing had been unshipped as before, but it was not ascertained whether the condensers had received any injury. The *Oberon* was afterwards towed into Portsmouth Harbour, and placed in No. 1 dock, where a minute examination will be made of her hull to ascertain whether any, and if so what, effect the "crusher gauges" which were placed on the side of her hull had, and also to ascertain the exact results internally of the explosion. A fourth experiment, when the distance between the ship and the torpedo will be reduced to forty feet, will, it is expected take place about a fortnight hence. There was a high wind, with a rather "loppy" sea at the time of the experiment."

"Torpedoes will, there are good reasons for expecting (says the *Portsmouth Times*), play a most important part in the naval warfare of the future, and it is well, therefore, that the rising generation of officers, to whom the State would look for service in

the event of an emergency arising, should have the means afforded them of obtaining all the knowledge they can in this department. While scientific men are devoting their attention to the production of torpedoes of the most deadly description, and we are often led to exclaim "What next?" the naval officers' torpedo class has been formed in order to obtain that proficiency in the working of these submarine engines of destruction, which is only to be gained from practical experience. A service contemporary truly remarks:—"If any of the most captains of the 'old school' of naval officers at present on a visit to Portsmouth were to take a boat up the harbor to a well known creek of Porchester, they would have an opportunity of seeing what is expected from post-captains—and also commanders and lieutenants—of the present day. They would observe boats moving about in what might possibly appear a purposeless sort of way, all their crews, however, hard at work, some pulling, others hauling and dragging at wire ropes, others handling carefully-shipped metal cases—in fact working like 'niggers.' These hard workers, however, are not 'niggers;' they form the officers' torpedo classes, and comprise the present and future commanders of England's navy." The development of torpedo warfare will add very materially to the duties and responsibilities of naval officers, and we must admit that we were greatly surprised on reading, in the journal from which we have already quoted, that the officers who thus go through a course of very hard work, with accompanying wear and-tear of clothes, receive nothing beyond an allowance of 1s 6d per diem for luncheon. It is a trite axiom that "the laborer is worthy of his hire," and why should an exception be made in the case of officers who thus evince a laudable desire to render themselves more efficient in the discharge of their duties? It is to be hoped that the attention of the Admiralty will be directed to the matter, with a view to some addition being made to the half pay of the naval officers' torpedo class."

PERSONAL.—At the great fire in Lennoxville, Eastern Townships, a short time since, Lieut. Colonel Hottson, 53rd Battalion of Sherbrooke, by his great personal exertions and energy, was instrumental in saving the contents of the Lennoxville Volunteer Armyory from the flames that have laid nearly the whole of that beautiful and thriving village in ashes.—*Con.*

The tallest, shortest and stoutest members of the British Parliament are all Irish. Mr. O Sullivan, the member for Limerick, is the tallest. Diogneda has sent the smallest man. Dr. O'Leary, and the most bulky, is The O'Gorman, member for Waterford, who is said to be as stone heavier than the claimant was.

The Leeds *Mercury* states that at the last sitting of the Bansley County Court a tailor's bill was disputed on the grounds that the trousers and waistcoat did not fit. To the amusement of all in court the Judge ordered the man to put the garments on, and then decided that they were a good fit, and gave plaintiff a verdict.

The *Tullet* states that the Pope intends sending a religious souvenir to the Marquis of Ripon.

DOMINION OF CANADA



MILITIA GENERAL ORDERS.

HEAD QUARTERS,

Ottawa, 16th October, 1874.

MILITIA GENERAL ORDER (27).

No. 1.

Major General Edward Selby Smyth having arrived in Canada on 14th instant, has assumed command of the Militia of the Dominion in pursuance of "The Canada Gazette" notification of 1st instant.

Captain the Honorable Miles Stapleton, Coldstream Guards, is appointed Aid-de-Camp to the Major-General, from 1st instant, with the rank of Captain in the Militia.

By Command of his Excellency the
Administrator of the Government,
WALKER POWELL, Lieut. Col.
Deputy Adjutant General of Militia,
Canada.

Apropos of the approaching manoeuvres in Germany, the *Pall Mall Gazette* observes that the difference of opinion between the two schools of German officers as to the future use of cavalry remains as unsettled as ever. Since the great manoeuvres at Dessau last year some of the chief tactical theorists, especially Colonel Verdy and Major Scherff, have very plainly given their opinions against the encouragement of any belief in the power of horse used in mass on the battlefield. On the other hand, some of the best practical soldiers in the army, who are understood to have the weight of Prince Frederick Charles's authority on their side, advocate strong the maintenance of the great traditions of Ziethen and Seydlitz. The latter party has evidently the most weight with the War Office, for we find that there are to be three sets of cavalry manoeuvres this autumn, though in each that arm will only be represented by the regiments of a single corps. Those of the 3rd Corps are to be trained at Frankfort on the Oder; of the 4th, near Magdeburg; and of the 15th, or Alsace-Lorraine, Corps, near Hagenau. One chief point to be settled at these assemblies is the value of the new Cavalry Exercise Book, as revised by the commission under General Schmidt, and now about to be formally adopted. Another still more important one is the mobility of the new horse artillery guns lately served out, which has been questioned by certain officers of the mounted services, and is to be fully tested and reported on.

RIFLE COMPETITION.

KING'S COUNTY RIFLE MATCHES.

The annual rifle matches of the King's County Rifle Association came off at Sussex, on Friday, September 25th, under the direction of the resident, Capt. Langstroth, with the assistance of the secretary, Lt.-Col. Beer. The day being fine and warm, and the marking good, made the time pass pleasantly to all, though the high wind kept down the scores.

Firing, after it commenced, was kept up without intermission until all the matches were completed, and although a commencement was not made until 10:30 a.m., yet all was completed by 3.30. p.m., leaving a margin of two hours to catch the train.

FIRST COMPETITION.

In the first competition at 200, 500 and 600 yards, five rounds at each range, the winners and scores were as follows:—

Table with 2 columns: Rank and Name/Score. Includes 1. Corpl. Wm Langstroth, 8th R. C., 52 points, county cup, silver medal and \$15; 2. Lt. Col. Beer 74th Batt 52 pts. 10; 3. A Langstroth R M 49 pts. 8; 4. Corpl F Sprout 8th R C 48th pts. ... 6; 5. Sergt White 74th Batt 43 pts. 5; 6. Corpl Wayman 8th R C 43 pts. 5; 7. Major Wetmore 74th Batt 42 pts. ... 5; 8. Trooper T Fowler 8th R C 41 pts. ... 4; 9. Cornet S Langstroth do 41 " ... 5; 10. Sergt W Parlee do 41 " ... 4; 11. Capt O R Arnold 74th Batt 41 pts. ... 4; 12. Capt E Arnold 74th Batt 39 pts. 2; 13. Sergt A Mace 74th Batt 35 pts. 2; 14. Pte Leggett 74th Batt 33 pts. 2; 15. Trooper A McAfee R C 33 pts. 2; 16. Sergt Ketchum 8th R C 32pts. 2.

SECOND COMPETITION.

In the second competition, at 300 and 500 yards, five rounds at each range, the winners and scores were as below:—

Table with 2 columns: Rank and Name/Score. Includes 1. A Langstroth, R.M 49 pts Jones cup and \$10; 2. Trooper A McAfee 8th R C 35; 3. Lt.-Col Beer 74th Batt 35; 4. Cornet S Langstroth 8th R C 35; 5. Ensign Armstrong, 74th Batt 34; 6. Capt. W Langstroth 8th R C 31; 7. Sergt W Parlee 8th R C 30; 8. Corpl. F Sprout 30; 9. Troop. T L Peters 30; 10. Pte Leggett, 74th 29; 11. Major D P Wetmore 74th 29; 12th Adj. O R Arnold 28; 13. Corpl. W Wayman 8th R C 28; 14. Trump R Parlee 27.

THE CONSOLATION.

was fired at 400 yards. 5 rounds at each range, and the following are the winners:—

Table with 2 columns: Rank and Name/Score. Includes 1 Private E Smith. 74th. 24; 2 Pvt C Baird, 8th R C 19; 3 Corpl Warden 18; 4 Sergt H. Arnold 74th 16; 5 Sergt B Kirk, 15; 6 Capt H Hallet 8th R C 11; 7 Sergt H Dixon 8th R C 11; 8 Troop. A Duffy 8th R C 9.

In this match Pte E Smith, 74th Batt. made 24 out of a possible 25.

After the prizes were distributed the annual meeting for the election of officers was held, when Capt and Adj. Arnold, 74th Batt., was elected President for the ensuing year; James Donville, Esq., M.P., 1st vice President and Capt. Langstroth 2nd vice President, Lt.-Col. Beer was again elected Secretary and Treasurer, and on the usual number of council being provided for, the meeting broke up amid sundry congratulations upon its success.—St John Telegraph.

OTTAWA FIELD BATTERY SHOOTING MATCH.

Ottawa, October 15.

MATCH NO. 1.

1st prize, Driver Martin; 2nd, Driver Gray; 3rd, Corporal Dunnet; 4th, Gunner Thompson; 5th, Sergeant Gray; 6th, Sergt Major Stewart; 7th, Sergeant Major Anderson; 8th, Sergeant Major Stewart; 9th, Gunner Thomas; 10th, Driver Marland; 11th, Gunner Henderson; 12th, Gunner Saunders.

MATCH NO. 2.

Lieut. Billings, 1st prize; Sergeant Grey, 2nd; Driver Grey, 3rd; Sergeant Askwith 4th; Sergeant Major Stewart, 5th; Gunner Thompson, 6th; Captain Stewart, 7th; Gt. Anderson 8th; Corporal Dunnet, 9th; Gun Barry, 10th; Sergt. Bray, 11th; Lieutenant Savage, 12th.

MATCH NO. 3.

Driver Gray, 1st prize; Sergeant Grey, 2nd; Gunner Thompson, 3rd; Lieut. Savage, 4th; Sergeant Anderson, 5th; Sergt. Askwith, 6th; Driver Martin, 7th; Corporal Dunnet, 8th; Bombadier Percy, 9th; Driver Norton, 10th; Sgt. Barry, 11th, Sergeant Wilson, 12th.

MATCH NO. 4.

Owing to the darkness this match was not finished, but at the time of breaking up gave the following results:—Gunner Barry, 1st prize; Bombadier Percy, 2nd; Driver Marland, 3rd; Sergeant Wilson, 4th; Gun. Saunders, 5th; Gunner Rogers 6th; Gunner Henderson, 7th; Driver Norton, 8th.

Captain Stewart and officers of the Battery acknowledged with thanks the following contributions, which were inadvertently omitted in the list last evening:—One meerscham pipe, presented by John Ross tobaccoist; value \$5; one book, J. Durie & Son, \$2.—Citizen.

THE GERMAN GUN VESSELS IN SPAIN.

The Daily News correspondent at Santander says, under date of August 25:—

"On arriving here from Marshal Zabara's headquarters at Miranda, I was surprised to see two vessels of war in the harbour, flying a flag which in the twilight appeared to be the St. George's ensign. A closer inspection, however, soon showed that although the ground was of the same white colour, the bars (similarly placed to ours) were different, being black instead of red. They were the long expected German gun vessels Nautilus and Albatross. As I afterwards learned from the officers, the resemblance of the flag to the British is due to our own Princess Royal, to whose well known good taste the design was entrusted in 1856. Naturally enough the banner of St. George formed the model, and well indeed has the subject been carried out by the august artist.

"The Nautilus and Albatross left Kiel on the 7th instant, and what with the attractions of the Solent (where the ships were

carefully inspected and on several occasions visited by the imperial Crown Prince and Princess), and a few days' stay at Plymouth, the magnificent harbour of which and Lord Mount Edgecumbe's finiscent on the opposite side their officers greatly admired, their arrival here was delayed until yesterday. This morning, accompanied by Dr Mohr, the special correspondent of the Cologne Gazette (poor Capt. Schmidt's constant companion). I went on board both vessels, and to my agreeable surprise found that nearly all the officers spoke English with fluency. In the German Navy the greatest attention is paid to modern languages, a precedent which our own would do well to follow, although who can find fault when English seems to be the universal language? Go to what part of the world you will—alas I poe. Savin again I she always makes the rule by forming the exception—English is spoken, we'll or badly; still it is taking the place of the French, which has hitherto borne the sway. The senior officer in command is Captain Zumbach, of the Nautilus. Both ships are identical in size, guns, tonnage, and horse power of steam engines, in fact, having both lately been built on the same model. This is their first commission, and notwithstanding that the last week an July alone was employed in appointing the the officers, calling together the men, and in making ready for sea, yet here they are nearly in perfect order. The Albatross has, however, outstripped her companion in that neatness in general appearance which is characteristic of the best navies. Although somewhat larger than Her Majesty's ship Fly, which was here a few days ago. I could almost imagine myself on board that vessel from the extreme cleanliness everywhere visible. The Nautilus and Albatross draw twelve feet of water (the Fly only nine feet), are 175 feet in length and of 150 horse power; each has four guns, two 75 and 38 pounders respectively, Krupp's of course. Captain von Nostitz, of the Albatross, might well be taken for an Englishman, both from his language and personal appearance. Whilst I was on board his ship, I could not fail to be struck by the contrast between the physical appearance of the fair haired blue eyed giants before me, and that of some Spaniards of rank who came to pay an official visit. The vessels are entirely of wooden construction—our Fly is partially iron plated and propelled by the new twin screws. The instructions which the commanders have received from their Government are said (and with truth I have reason to believe, although the officers were naturally reticent in this respect) to be 'not to interfere in the slightest manner in the blockading the coast or in attacking the Carlists, but entirely to watch the interests of their countrymen.' What will be done in case of any fresh outrage inflicted on any German subject, it is not difficult to imagine. I would rather not be in either of Don Carlos's ports on the Cantabrian coast if my friend Dr. Mohr, or any of the German, should share the fate of Captain Schmidt, or be subjected to any ill treatment by the supporters of Absolutism. Not only might the coast towns suffer like Stephenson's coo, but who knows what other damage might not in that case arise to the Royalist cause, to say nothing of the possible complications connected therewith? The stay of the vessels in this harbour will be limited to three days, after which proceed to Santander, and afterwards to Portugal and the river Nervion if the passage of the bar is deemed safe. After that nous verrons.

A DIDACTIC ODE.

(From the Pall Mall Gazette.)

Ours is a wise and earnest age, an age of thought and science, sir: To error, ignorance and bliss we fairly bid defiance, sir. "Professors" everywhere abound, both in and out of colleges. And all agog to cram our nobles with "isms" and with "ologies."

Bow, wow, wow
Tol de riddle, tol de riddle,
Bow, wow, wow.

Philosophy, as you're aware, material and mental, sir. At one extreme is "Positive," at the other "Transcendental," sir. And each of us who in these days would speculate en regle. If he can't run the rig with Comte, must take the tip from Hegel.

Bow, wow, wow, etc.

The fundamental problem which debated now for ages, sir. Is still attacked and still unsolved by all our modern sages, sir. Is, if an effort I may make a simple form to throw it in. Just what we know, and why we know, and what's the way we know it in.

Bow, wow, wow, etc.

We can't assume (so Comte affirms) a first or final cause, sir: Phenomena are all we know, their order and their laws, sir: While Hegel's modest formula, a single line to sum in. Is "nothing is and nothing's not, but everything's becomin'."

Bow, wow, wow, etc.

"Development" is all the go, of course, with Herbert Spencer. Who cares a little more than Comte about the "why" and "whence," sir. Appearance, he seems to think do not exhaust totality. But indicate that underneath there's some "Unknown Reality."

Bow, wow, wow, etc.

And Darwin, too, who leads the throng in vulgum roces spargere. Maintains Humanity is naught except a big menagerie. The progeny of tailless apes, sharp-eared, but puggy-nosed, sir. Who nightly climb their "family trees," and on the top repose, sir.

Bow, wow, wow, etc.

There's Carlyle, on the other hand, whose first and last concern it is To preach up the "immensities" and muse on the "eternities." But if one creeps what one hears, the gist of all his brag is sir. That "Erbswart," rightly understood, is transcendental "Huggis," sir.

Bow, wow, wow, etc.

Imaginative sparks, you know, electric currents kindle, sir. On Alpine heights or at Belfast, within the brain of Tyndall, sir: His late address, some people hold, is flowery, vague and vapoury. And represents the "classic nude" when stripped of all its "Draper-y."

Bow, wow, wow, etc.

Professor Huxley has essayed to bridge across the chasm, sir. 'Twixt matter dead and matter quick by means of "protoplasm," sir. And to his doctrine now subjoins the further "grand attraction." That "consciousness in man and brute is simply "reflex action."

Bow, wow, wow, etc.

Then Stanley Jevons will contend in words stout and emphatical The proper mode to treat all things is purely mathematical. Since we are individual men, communities, and nations, sir. Are clearly angles, lines, and squares, cubes, circles, and equilaterals, sir.

Bow, wow, wow, etc.

George Henry Lewes, I'm informed, had, "gone off quite hysterical" About that feeble foolish thing, the "theory Me-temperical." And only found relief, 'tis said, from nervous throes and spasms, sir. By banging straight at Huxley's head a brace of brand-new "plasmis," sir.

Bow, wow, wow, etc.

Such are the philosophic views I've ventured now to versify. And, if I may invent the term, in some degree to "tersify." Among them all, I'm bold to say, fair room for choice you'll find, sir: And if you don't, why then you wont, and I for one shan't mind, sir.

Bow, wow, wow,
Tol de riddle, tol de riddle,
Bow, wow, wow.

INFANTRY VERSUS ARTILLERY.

The relative efficacy of infantry and artillery has formed the subject of some interesting experiments made in Bavaria, and subsequently repeated in Switzerland, in the course of last year. The results obtained in each case will be explained by a short recapitulation of the experiments themselves.

The Bavarian experiments were carried out at Lechfeld, in the following manner:

To test the effects of infantry fire on artillery—so far, at least, as they can be ascertained on the practice range—four field guns were unlimbered for action, at 15 metres interval, and figure targets were set up about them to represent the battery officers, men and horses in their proper stations. Men on foot, standing frontwise, were represented each by a rectangular target 180 centim. high and 40 centim. wide; those seen in profile, by targets of the same height, 30 centim. ; and horses, by targets, 200 centim. high by 90 wide.

A party of Bavarian infantry, armed with the regulation weapon, the "Wender" breech loading rifle (pattern 1869) was told off in four sections, and drawn up facing the battery, at a medium range of 750 metres, to practise at it with ball. The experiment was repeated twice; the firing upon each occasion, being continued for twenty minutes.

In the first experiment, 9,482 rounds were fired, being an average of 75 rounds per rifle, and there were 2,485 hits on the figures and 98 on the guns and limbers, making in all 2583 hits, or 30.4 hits to each 100 rounds fired.

In the second experiment, 8,616 rounds were fired, being at the rate of 76.2 per rifle, and 1,419 hits were made on the figures, and 139 on the guns and limbers, or 1558 in all, being 18 hits to every 100 rounds fired.

The firing in each case was delivered partly by volleys of sections and partly by file firing. The mean of the two experiments gave a fraction of over 24 hits to each 100 rounds fired.

The hits were distributed as shown below:

EXPERIMENT NO. 1.

Battery commander, 29; section officers, 21; trumpeter 28; gunners, 1057; drivers, 235; horses, 1,123; guns and limbers, 98.

EXPERIMENT NO. 2.

Battery commander, 14, section officers, 22; trumpeter 5; gunners 424; drivers, 178; horses, 776; guns and limbers, 139.

To test the effects of artillery fire on infantry a row of figure targets was set up to represent a line of skirmishers occupying a front of 60 metres, with twenty standing and twenty kneeling figures. The standing figures were represented by targets 180 centimetres high, and the kneeling figures by targets 115 centimetres high each by 40 centimetres wide. In rear of the flanks in the line, at a distance of 30 metres from it, were placed targets to represent the supports; each support formed of six figure

targets, 24 centimetres apart, so as to present a front of 400 centimetres. At a further distance in rear of 100 metres, other figure targets were set up, also at 24 centimetres apart, so as to represent the reserve with a front of 1,200 centimetres. In front of the reserve was placed a target 280 centimetres by 40, representing the company commander on horseback.

A battery of six 8 centimetro BL guns (Prussian model) was brought up, and fired on these targets with shell and shrapnel, for a space of twenty minutes, at 750 metres distance. In all 36 common shells, and 54 shrapnel shells were fired, making 7,164, fragments, bullets, etc., and giving 558 hits, or 7.7 per cent.

The hits were distributed as follows: Kneeling skirmishers, 159; standing ditto, 116; supports, 172; company commander, 14; reserve, 97; total, 548. The targets were then set up again, and the experiment repeated with six 9 centim. breech-loader guns. The range and duration of the firing were the same as before. There were fired 36 common shells, and 54 shrapnel shells, giving 11,844 fragments. The number of hits was 1,435, or 12.1 per cent., which were distributed thus: Kneeling skirmishers, 400; standing ditto, 329; supports, 494; company commander, nil (target thrown down); reserve, 212, total, 1,435.

Some experiments were afterwards made with guns firing against battery targets, the results of which we shall show presently.

The Swiss experiments came off in October last, at Thonon, and are described by Captain Roth, of the Federal staff, in the *Zeitschrift für Schweizerische Artillerie*.

As it was considered desirable to compare the Swiss armament with that of the Bavarian troops, the experiments were modelled on those just described.

The requisite detachments of riflemen and gunners were furnished by pupils of the "Ecoles d'Aspirants," Anglice cadets, whose performances, as none of them had completed their course of drill instruction, were deemed a fair average of the powers of execution of Federal troops.

The experiments were again of three kinds: Infantry firing against artillery; artillery firing against infantry, and artillery engaging artillery.

For the first, targets were set up to represent a battery of four field guns, unlimbered for action, at 15 metres interval. The guns and teams, presented, of course, end on. were shown by rectangular targets respectively, 150, 135, and 140 centim. high, and of suitable widths. The officers and men were shown by figure targets of the same dimensions as those used at Lechfeld—the battery commander, with his trumpeter behind him, both mounted, on the right of the battery; division officers, mounted, in rear of their two-gun divisions; the Nos. 1 also mounted, on left of their respective pieces; the rest of the detachments seen at their posts, "in action;" the limbers, each with six horses, held by two drivers, in their proper places in rear of the battery.

A party of 113 cadets, picked from the best rifle shots in the schools, and armed with the Swiss regulation weapon, the "Vetterli" revolver rifle, was told off in four sections, and drawn up opposite the target at 800 metres distance. The number of rifles firing was 113; the duration of the firing was twenty minutes. The number of rounds fired was 10,227, or 90.5 per rifle. The number of hits was 2,140 on the personnel, and 546 on the material, or in all, 2,685, or 26.2 per 100 rounds fired,

In the next experiment, targets were arranged to represent a company of infantry drawn up as skirmishers, supports, and reserve, with a mounted officer, the details and the dimensions of the target being identical with those used at Lechfeld.

The guns brought to bear on them were six bronze breech loading 8 centm. guns (Swiss model), on iron field carriages. The ammunition was common shell with Gressly percussion fuzes (pattern 1872), and shrapnel shell with time fuzes (pattern 1873). The battery was brought into action in strict accordance with the regulations, and opened fire at 800 metres, commencing with common shell, the flank divisions engaging the supports, the centre division firing of the skirmisher, afterwards sub-division 2 and 5 engaged the reserve; shrapnel was then substituted, the flank pieces firing at the supports, and the others at the reserve, finally all six guns cannonaded the whole front.

The duration of firing was 18.5 minutes; 36 common shell and 53 shrapnel were fired, there having been one miss fire. The estimated number of fragments is not shown. The hits were 487 in number, distributed as follows:

Skirmishers, 170; supports, 83; company commander, 13; reserve, 221; total, 487.

The hits on standing figures were to those on the kneeling in the proportion of 3 to 2.

So many skirmisher targets were thrown down by the shells that no correct estimate could be formed of the effect of the subsequent shrapnel practice.

In the third experiment, the same six guns were fired at a battery target, similar to that used in experiment No. 1.

The range was the same, 800 metres; the expenditure of ammunition the same, 36 common shell and 45 shrapnel shells; the duration of the firing was, however, 12.5 minutes only.

The number of hits, counting fragments, was 2,753—2,238 on the figures of the men and horses, and 515 on the guns and limbers.

The Turkish Government is having trouble with its subjects in Crete. The Christians and Mussulmans are arrayed against each other, and a strong garrison is required to keep the peace. The Christians demand that full political rights be accorded them, and complain that they are oppressed by the Turks with impunity in presence of the troops. Both parties are willing to be rid of Turkish rule. The Christians favor annexation to Greece, while the Mussulmans want to be under the protection of Egypt. Conciliation is believed to be impossible, and a serious outbreak, it is said, may occur at any moment.

During the past year M. Ernest Stamm, an Alsatian engineer, has devoted much time and care to the study of the question of a connection between France and Italy independently of Swiss territory. With this object the idea of tunnelling Mont Blanc is advocated by him in a paper which has been read by M. Stamm before the Societe Industrielle de Mulhouse. A survey proves that while Chamounix is 3,445 feet above the sea level, and Entreves, on the south, 4,216 feet, a tunnel between the two points would not be longer, nor its gradients more difficult, than the Mont Cenis tunnel.

Man's duty to God and man's duty to man are the hinges upon which man's happiness depends—the corrosion of one is the canker of the soul; a flaw in the other imperils man's happiness.

ABOLISHING THE DESERT.

Few engineering propositions of modern times are more stupendous in their plan, or likely to involve more momentous consequences, than that of converting a portion of the great desert of Northern Africa into an inland sea. The idea has been entertained at various times previously, but simply as an indefinite notion, without any special attempt at determining the possibilities.

A line of levels made in 1873 by Messrs. Roudaire and Noi, captains in the French army, in connection with certain geodetic operations required by the measurement of the meridian of Biskra, first gave weight to the project. This operation enabled them to ascertain that the Lake, or Chott Melghigh, is at its north eastern border 27 metres below the level of the Mediterranean, thus deepening at the rate of one fourth of a meter to the kilometer to the westward. This was the first indication of the absolute elevation of any point around Lake Melghigh, a vast depression in the soil, which formerly received the waters of the Igharghar, a river at that time 1,200 kilometres in length, which transported the tropical rainfall from the mountains of Ahaggar to the Algerian Sahara, in the Province of Constantine.

Captain Roudaire, with this hint, began a careful study of the topography of Eastern Algeria, supplementing this by an investigation into certain records bearing upon this depression in Tunis, as published by Guerin and embodied in certain manuscript notes of Captain Pricot de Sainte-Marie, and he came to the conclusion that about 450 years before the Christian era the Mediterranean extended westward to a considerable distance, and that the salt lakes of El-Djerid, El-Gharsa, Sellim, and Melghigh are simply the remainder of the great bay, which, in his opinion, became dry by the formation of a sandy isthmus of about 26 kilometres in extent to the north of the Gulf of Gabes, and of the place where Triton Bay connected with the Mediterranean. He also found reason to believe that the Wady of El-Aporil represented the channel which formed the connection between the dried portion of this bay and that which still exists under the modern name of the Gulf of Gabes.

The date of this change in the physical conditions of Northern Africa, in his opinion, was scarcely anterior to the beginning of the Christian era, and the cause of it he refers partly at least to the action of the current of the sea in the Gulf of Gabes which by some change in its physical conditions, deposited this large amount of sand and mud, ultimately ending in a permanent obstruction which prevented the connection of this inland sea with the Mediterranean. This separation once effected, it did not require a great length of time for the intense heat of Northern Africa to dry the interior basin, leaving only a few salt ponds here and there.

Assuming, with Recluz, that the mean annual evaporation from the surface of the Mediterranean amounts to about twenty inches per annum, it would not be long before this result was accomplished; and the actual filling up of the bay with saline matters, while still connected with the Mediterranean, was only prevented by the immense volume of fresh water which was received from the Aowras Mountains. The ancient bay, according to Roudaire, was 30 kilometres long and 60 wide, and required from the Mediterranean a supply of water equal

to a current 1,000 meters in width, 5 in depth and running at the rate of 11 meters per minute.

For the purpose of re-establishing the ancient communication between the westernmost of these salt lakes, El-Djerid, and the Mediterranean, it is apparently only necessary to open an isthmus of 18 kilometres length thus renewing the ancient bay, and totally changing the physical and commercial conditions of the interior of Africa.

Already reference has been made to the fact that the French Government has authorized a certain expenditure for additional observations looking towards this work, and speculations have been presented as to its probable consequences. According to some, the result suggested of closing the Sirocco winds of the desert, which now cross the Mediterranean and exercise a very appreciable effect upon the Alps, will be extremely detrimental to the interests of Switzerland; while others ridicule the idea as preposterous. Again, it is objected that this evaporation of the water (which will necessarily occur to a very great extent) will thereby result in forming an immense mass of salt, which will soon fill the bed of the sea.

To this, however, the experiences resulting from the construction of the Suez Canal are brought forward in opposition, to show that in all probability the ancient rainfall along the slopes of the mountains will be restored, and that not only will a sufficient volume of fresh water be brought down to supply the waste by evaporation, but that a large extent of country now a barren desert will be rendered fertile, and the whole face of Northern Africa altered for the better.

So diligently have the Germans used their possession of Metz that the great works which the French first projected in 1867, after Sedan, have been not only carried to full completion, but their original conception much improved on. This is more particularly the case with Fort St. Quentin, which every traveller now recognizes as dominating the hills on the opposite side of the Moselle to the city. Its imperfect extent within the enceinte as laid out by the French for giving room for modern great guns was commented on by the German engineers as soon as it fell into their hands. This is now completely remedied and the power of the fort greatly increased by the erection of the so-called West Fort, a huge outwork which covers the west side of the St. Quentin hill, and commands the country toward Gravelotte. The other great improvement made by the Germans in the strength of the new enceinte of detached works was designed and begun by their predecessors, but was not far enough advanced in 1870 to be of any service to Bazaine's army when inclosed. This is the so-called Fort St. Privat (named from quite another St. Privat than that near Gravelotte) which is built above the city on the right or east bank of the Moselle, three thousand yards outside the old works, and completely closes the opening along the valley of the River, which was left before by the inability of the great works of St. Quentin and Queulen to cross their fire on this side. It gives also a new secure strategical point of issue for the defenders of Metz to debouch from, if they so wish, into the most open part of the country round the works.

It is said that ex-Marshal Bismarck has taken the apartments formerly occupied by the late Napoleon III. in King Street, St. James, London. The whirligig of time once more.

THE GERMAN NAVY.

The very serious revelations which were recently made in the House of Commons by the First Lord of the Admiralty, says the London *Iron*, seem to show that if England were at the present time to be involved in war, it would be found that of all the heavily armor plated vessels which have of late years been added to our ironclad fleet very few would be in a fit condition to go to sea, owing to the dilapidated state of their boilers. Under these circumstances, it may be interesting to our readers to learn the present strength of the German navy, and progress which that rapidly rising nation has made during the last twenty five years in this branch of its armament.

At the commencement of 1818 the Prussian navy merely consisted of one sailing corvette, called the *Amazon*, and two gun boats, while the naval department formed a section of the Engineers of the Guard. Towards the end of 1849, this fleet, if we may call it such, numbered a sailing corvette, two steamers—the *Adler* and the *Elizbeth*, and forty-two gun-boats—forty-five vessels in all armed with ninety seven guns and manned with 1753 sailors and forty eight officers. The *Amazon* carried 34-pounder carronades; the steamers 25 pounder howitzers working on pivots and two 32-pounder guns; the gun boats, one 26 pounder howitzer and a long bronze 24-pounder gun; but some of the smaller ones only carried one gun. These gun boats were propelled either by the aid of sails or oars, it being possible in the latter case to unship the masts at will.

The actual organization of the navy, which had hitherto been supplied from the army, was commenced in 1848, and in the two following years a division of sailors was formed, a school of cadets established on board the *Amazon*, and the fleet was increased by the despatch boats *Undine* and *Salamander*, the brig *Mercury*, and the corvette *Dantzic*. The *Dantzic* was the first large war vessel ever constructed in Prussia. During the succeeding ten years the number of ships steadily increased, until in 1863 the fleet consisted of thirty one steam vessels armed with 164 guns, eight sailing ships carrying 144 guns, and forty gun boats with seventy six guns, forming a total of seventy nine ships of war with an armament of 384 pieces of ordnance. This navy held its own against that of Denmark in the war of 1864, but as the shelling of the vessels with armor plates had already been introduced both in France and England in 1860, when the *Gloire*, the *Warrior*, and the *Black Prince* were built, the Prussian Government, not to be behind the rest of Europe, had determined to strengthen their fleet by the addition of ten armorplated frigates. The first of these, the *Arminius* built by Messrs. Samuda Brothers, of Poplar, was launched in August, 1864. She is an iron ship with a belt of armor $4\frac{1}{2}$ inches thick at the water line, and has two turrets, each containing a pair of bronze guns of $8\frac{1}{2}$ inches bore. She is 197 feet long and 36 feet broad, and has a displacement of 1583 tons. The next one which was built, the *Prince Adalbert* is also only a small turret vessel, having 1477 tons displacement, with a length of 160 feet, and carrying two guns, of $6\frac{1}{2}$ inches diameter of bore, in her turrets and one of $8\frac{1}{2}$ inches diameter in a small battery with which she is provided. All the iron clads

since built are of a much heavier description, having each over 5000 tons displacement, with the exception of the *Hansa* 3500 tons displacement, which was launched in 1873.

The *Preussen*, originally named the *Borussia*, the *Grosser Kurfurst* and the *King Frederick the Great* are all turret vessels about 6600 tons displacement, carrying each four guns of 10 inches diameter in the turrets and two of $6\frac{1}{2}$ inches on deck. They are plated with a belt of 9 inch armor at the water line and 6 inch armor on the sides and are only surpassed in strength of hull by the central battery rams *Kaiser* and *Deutschland*, at present in course of construction at Messrs Samuda Brothers' works. The first of these the *Kaiser* was launched some two months since and is now being completed for sea. These frigates of 7500 tons displacement are 280 feet long and 63 feet broad and carry armor 10 inches thick at the belt and on the battery, but are only armed with guns of the same calibre as the large turret ships. The *King William* is the largest ship of the German navy, being 355 feet long and having a displacement of 9575 tons; but she is only protected with armor 8 inches thick and her guns are only 8 1-4 inches in the bore. As the *Kaiser* and *Deutschland* are not yet ready for sea the effective navy afloat comprises at the present time only ten iron armor, clad frigates, of which five are turret and five broadside vessels and three iron torpedo vessels. Five iron armor clad frigates with all round fire of the *Heracles* type and three iron clad torpedo boats are being constructed.

It will be seen from the above that the Government does not possess a single vessel of the *Devastation* and *Fury* class, either plated with 14 inches thickness of armor, or carrying guns of such a weight as 35 tons, nor have they thought it necessary to build any low freeboard monitors like our iron seagoing vessels of the *Rupert* or *Cyclops* class; but this may be accounted for by the fact of their sea-board being infinitely more limited than our own. Whether the German fleet is in a really effective state and ready to put the sea or not, we are of course unable to say, since we believe no report has been issued on the subject, and we, consequently, have not any means of ascertaining whether the boilers of their ironclads have suffered to anything like the same extent as those of our own ships,

The suggestion of an ex-M P. in the *Times*, whose identity is not very doubtful, that we should ask our colonies to defray the expenses we incur by protecting them by means of our ships, in order that they may be really "self supporting" colonies, seems very like a political bait, which is not likely to be grabbed by either the Earl of Carnarvon or Sir Stafford Northcote. Dutch colonists may feel such payments to constitute "the most natural" link between them and the Netherlands," but we question whether English ones would not regard it as another step, and a very suspicious one, in the process of detachment, begun when we drew upon their own resources in Military matters. When the colonies, now receiving naval protection, ask to pay us, we shall not decline to receive their money, but until then the less we move in the matter the better. Into the question of "extra allowances" for the Navy on tropical stations we need not now enter. It is an altogether different matter.

We learn, from New York papers, that the officers of the Imperial Brazilian Navy emphatically deny the accuracy of the statements respecting the late torpedo war in Paraguay, made by Herr Treuenfeldt at a meeting of the Society of Telegraphic Engineers, and reported in the *Broad Arrow* of 11th April last (p. 453). A Brazilian officer writes that the continuance of the war for a period of four years was due to various causes, and chiefly to the difficulties of communication in a marshy country; but that it is a mistake to suppose that the operations of any portion of the forces on land were paralysed by Herr Treuenfeldt's torpedo arrangements. Many of these torpedoes, with mechanical self acting apparatus, were badly constructed; thirteen of those taken up by the Brazilian Fleet had their powder wet, fourteen others exploded in the midst of the parties that were to have directed them; for although the system, which consisting in floating the torpedo down stream, and firing it at the proper moment by means of a string from a canoe concealed under the bank of the stream, appeared safe enough in theory, it proved very much the contrary in practice; and in not one instance, it is asserted, did the operations arrest the movements of the naval squadrons against whom they were devised.

EXTRACTING A BULLET RECEIVED AT THE BATTLE OF WATERLOO.—The *Sussex Express* states that on Wednesday Dr. Harding, of Walhurst, successfully extracted a French musket bullet from the hand of James Jenner, weighing over three quarters of an ounce, which was firmly imbedded in him at the battle of Waterloo. In spite of the inconvenience arising from the bullet during nearly sixty years the man has worked uninterruptedly as an agricultural labourer in the parish, where he bears an excellent character. He is eighty years of age.

A TRAFALGAR VETERAN.—On Wednesday last week, Captain Gilbert Kennicott, R.N., died at Folkstone in his 87th year. The deceased lost the sight of one eye at the battle of Trafalgar, and was otherwise severely injured. He had been mayor of Folkstone, and had served for many years as one of its magistrates. Captain Gilbert Kennicott served under Collingwood, and received no less than fourteen wounds. His funeral took place at Folkestone Cemetery on Monday.

MANITOBA WHEAT.—Mr. Alexander Adams informs the *Manitoban* that he cut this season for Thomas and Wm. Lang, near Point du Chene, eight acres syle and club wheat which he regards the best he has seen in nineteen years' experience in Ontario. It will yield not less he thinks than forty five bushels to the acre, notwithstanding the grasshopper visitation. The wheat was put in early, thus almost escaping damage from this pest.

HAPPY "CAROLINA" Under this heading a correspondent of an Eastern paper says: "From my observation I am satisfied every dollar paid for taxes in South Carolina runs twenty different risks of being stolen before it gets into the Treasury, and is certain to be stolen after it gets there." Even at 50 per cent. discount on this statement, things must be in a "happy" condition indeed.

London Oct. 13.—The *Times* says that Von Arnim's son has written to the journals denying that his father had any hand in the publication of the Ultramontane pamphlet entitled the 'Revolution from Above,' in which the Foreign Office feared he would publish the missing documents.