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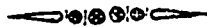
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VOL. VII.

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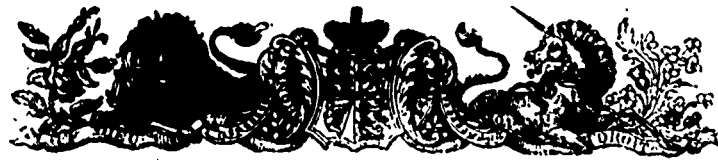
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OTTAWA, (CANADA,) TUESDAY, JANUARY 7, 1873.

No 1.

NEWS OF THE WEEK.

Indications point to a break up of the Gladstone Administration at an early day.

The Right Hon. Mr. Cardwell, Secretary of War, addressed a meeting at Oxford last night. He spoke strongly in favor of the new ballot law and the licensing act, and expressed satisfaction with the result of the arbitration at Geneva; rejoiced that the boundary dispute was settled and that there no longer remained a cloud between England and America. He adverted to the plan for the localization of the army, advised a closer association of the army with the militia, and declared himself in favor of short terms of enlistment.

By the wreck of the *Germany*, thirty persons lost their lives.

Austria, Germany and Russia have addressed a note to the Government of Greece, urging the advisability of yielding to France and Italy in the matter of her silver mines.

A special despatch to the *Times* says the British Ambassador at St. Petersburg had informed Prince Gortschakoff that England will interfere to protect the independence of Afghanistan.

H. M. ship *Sparrow Hawk* is ordered to Honolulu.

The breakwater at Wick, Scotland, was seriously damaged by the late storms. The freshet in the River Seine is subsiding. The water has already fallen seventy centimetres.

An explosion is reported in the East Mine at Silverdale by which eight miners were suffocated.

Recent storms has created great damages along the coasts, and the principal rivers have been swollen by the rain so as to produce great loss of property.

The inundation of the valley of the Seine and Loire, has caused an immense amount of suffering in public as well as private loss; latest advices state that they are abating.

The *Republique Francais*, the organ of Gambetta, predicts a serious parliamentary crisis when the Assembly meets in January.

It says the trimming tactics of the Government only increase the disquiet of the country, and the acts of Ministers Dufaure and Gonland endanger the Governments popularity.

M. Rivere has made an official report to the President on the progress of the preliminary investigation in the case of Marshal Bazaine. He states that two hundred and twenty witnesses had been examined of whom 149 were summoned to appear in court on the trial of the Marshal.

Baker's expedition for the relief of Dr. Livingstone has been attacked and Egyptian troops have gone to the rescue.

Natives of Spain are forbidden by the French authorities to sojourn in the Department of the Basses Pyrenees without special permission.

Several Mayors of Communes who were required by the National Assembly to placard Minister Dufaure's speech censuring Gambetta have refused to obey.

The French Minister to Rome has tendered his resignation.

Ploura Pneumonia has become epidemic in Prussia and Belgium.

The French Assembly are discussing the subject of a second Chamber.

France will pay two hundred million francs of the war indemnity on January 1st, and seventy millions per month until May.

A Paris tradesman has been sent to prison for displaying a placard insulting to the Assembly.

The case of Marshal Bazaine has formed the subject of a report in the French Assembly.

In Spain a rising of the Alphoneists is expected. The Government is prepared to suppress it. The citizens of Madrid are opposed to King Amadeus, who is greatly excited.

Senor Zorollo, President of the Council, in a speech yesterday repudiated the idea that intervention from foreign countries would be allowed by the Government in the matter of reforms in the Spanish colonies.

The *London Times* has given advice and suggestions to the President of the United States as to intervention in Cuban affairs which

may lead to complications not contemplated by John Bright and others of the Manchester peace at any price party. At all events the Spanish people have given fair warning of what will happen in case of meddling.

A bill for the emancipation of slaves in the island of Porto Rico has passed the lower house of the Cortes amidst some enthusiasm. Owners are to be indemnified.

Another rising against King Amadeus is reported from Spain.

The Italian Minister to Washington is to be recalled, in consequence of complaints by his own countrymen in America.

The recent allocution of the Pope has drawn down the severest censure of the *North German Gazette*.

The rivers in the valley of the Po are again rising, and inundations are threatened.

The Crown Prince Humbert was thrown from his carriage, while driving in this city to-day, and received some slight bruises.

It was thought the Papal legation at Lucerne would be abolished.

Diplomatic relations between Switzerland and the Papal See are broken off.

In the course of a newspaper war now going on it has come out that Austria had given France a positive promise of assistance against Prussia.

The troops of the Khan of Khiva are said to be actually besieging the Russian forts.

The United States steamer *Yankee* arrived on the 10th. The captain of the ship visited the Sultan on the 11th. They were received by the troops and met by the Sultan in front of the palace. Captain Wilson represented to the Sultan the sentiments of the American people in regard to slavery, and requested the abrogation of the cause of the treaty with England. The Sultan's reply was received on the 17th. He says:—Thirty three years ago I was forbidden by my father to export slaves to Muscat. The slaves now carried there are stolen by the Arabs and tribes from the Persian gulf. I will make efforts to prevent the kidnapping of slaves.

The English corvette *Briton* arrived at Suez on the 12th and is waiting for Sir Burtel Freire.

THE AUTUMN MANŒUVRES.

THE SCENE OF OPERATIONS.

(From the Broad Arrow)

(Continued from Page 616, V. I. VI.)

THURSDAY SEPT. 5TH.

Meeting of the two Armies.—Yesterday, as we have related, the main body of the Southern Army, composed principally of infantry, halted and encamped at Fontmell Down; the cavalry—as to whose movements it was well, for obvious reasons, not to be too precise—being pushed on a long way ahead, so as virtually to accomplish the distance, which would be traversed in two ordinary day's marches, in the course of a single morning and afternoon. In this manner it was believed that a position would be secured which hereafter would be very important—that is to say, which would command the river Wiley, the turning point in the manœuvres, and possibly secure for the Southern Army possession of some of the many fords and bridges across that stream. The distance to be traversed by both armies, before they came face to face, were as nearly as possible equal; at the worst, therefore, assuming the Northern Army patrols to use equal diligence, it was believed that there might be a cavalry skirmish near one of these fords late on the night of the 4th or morning of the 5th. Imagine the surprise of an advanced squadron of the Bays, on accomplishing the distance covered by their forced march, to find that not alone were all the fords and passages of the Wiley strongly held by the Northern Army, but that some at least of their cavalry—two regiments it is believed—had crossed the river, and like themselves were patrolling on the southern bank! Both detachments, after sufficient action to make their presence unmistakable, fell back on their supports; and then arose the question how the Northern Army came to be in that position. It transpired that they, acting up to the letter of instructions, considered themselves at liberty to begin their march at the first hour of the day named for the operations to begin—namely, at one o'clock in the morning. And so far, the construction which they put upon their instructions would seem to have been accurate, though no one appeared to have foreseen the likelihood of such a reading at the time when the orders were drawn up. But it was held that they were not at liberty to cross the Wiley; and the two regiments which had done so were accordingly withdrawn. A release of the prisoners taken was also made. These consisted principally of a baking party of the Control, captured, together with their ovens, by the Northern Cavalry in the first zeal of their raid upon the banks of the Wiley—a feat which well might have stopped the rations of their own men, among others, for captives obviously could neither continue to receive supplies nor prepare rations for consumption by either of the forces. No time was lost in transmitting, by day signal, and by night flashing, intelligence of the state of things in front to Sir John Michel and the bulk of the Southern Army in rear, and an "early start" was necessarily the word with all the brigades this morning. The march from Fontmell Down towards the Wiley is considerably longer than that from Blandford to Fontmell Down, and on the high grounds especially, the men and horses were much tried by the strong wind which to day has succeeded after a night's

heavy rain, to the soft, relaxing steamy heat of yesterday. Men, however, did not pause to dwell on the details, and as little as possible on the fatigues of the march; their thoughts were occupied with what might be going on in front. And when, having marched to Fontmell Down and Lady Down—sufficiently for in all conscience for one day—they heard stirring news of what the cavalry divisions were doing, with renewed spirit, they again got under arms, and pushed forward to a point sufficiently near to have shared in influencing the fortunes of the day had the conflict continued a very little while longer. Passing from the line of march of the main body to the efforts of the divisions actually in position on the heights above the Wiley, it is necessary, for the sake of making events clear, to revert in point of time to the early morning. After the question which had arisen the night before, His Royal Highness the Commander in Chief and the umpire's staff were naturally anxious to find themselves at the earliest moment on the line of operations, and accordingly left Salisbury for Wiley by a special train at seven o'clock. There is an earlier train at half past six o'clock, and by this all officers and others interested in the movements, but not immediately connected with headquarters, or with the umpire staff, were compelled to travel. The contending forces on either side were restrained imperatively from commencing operations upon a scale of any importance before eight o'clock, to afford time for the arrival of their trains and for the umpires to take horse and proceed either to the fords of the Wiley or to the Northern Cavalry Camp at Lamb Down, a distance of about two miles from Wiley station. The placing of outposts, however, was not forbidden, and accordingly preparations were made by the indefatigable Hussar Regiments the 7th and 10th, as well as the 12th Lancers, and Col. Wombwell, for exploring, when the proper moment arrived, every inch of ground in front of the Northern Division. The great object, of course, was to ascertain the practicability of assailing their camp, for there were reasons to believe that it had been pitched in a position very convenient for watering purposes, and well secured as long as their cavalry patrolled both banks of the Wiley, but which became, insecure and exposed, the moment the two regiments were withdrawn to the northern side of the river. Without exposing at any time more than a dozen troopers or so, though three or four regiments lay concealed and ready to spring into action from behind plantations, and haystacks and farmhouses and everything which could afford safe cover the Cavalry of the Light Brigade perseveringly swept backwards and forwards, and right and left, communicating by signals with their headquarters in rear, till the exact position of the Northern camp was ascertained, together with the point from which it could best be enfiladed. This occupied some considerable time, during which strange to say, no hostile signs proceeded from the northern camp to show that they were aware of what was going on, though the infantry posts at the fords and bridges now and then exchanged shots with the nearest vedettes upon our side. At last, the preparations being complete, our batteries placed upon the brow of Wiley Down, one above the other, were unmasked, and the first discharges produced an immediate and almost unhoped for effect. There was a sudden commotion like that which follows the overturning of a beehive, and a buzzing, as it were, of men and horses and trains of Control wagons. Down fell the nearest and

most prominent angles of canvas, and in actual warfare, we know that the destruction actually caused would be as nothing to the effects of the confusion which would be produced by the scattering of the horses frightened by the sudden bursting of shells in their vicinity. The position of the attacking battalions were shifted, the whole camp was now enfiladed, and what so recently were the proud and threatening lines of General Shute were levelled with the ground. To surprise and shell an enemy's camp and to drive him back upon a position two or three miles further off, is an insignificant victory, and had matters rested there, the Southern Army might well have set off this triumph against the undoubted surprise of the night march; but chance and diligent patrolling throw still better things in the way. The Northern Cavalry, notwithstanding their recent disaster, apparently believed that they still had a great preponderance of force, and did all in their power to induce the Southern commander to quit his shelter and attack, and thus to bring himself under the range of batteries, which there was reason to believe were cunningly posted on the commanding points along the river Wiley. For a couple of hours or so their ineffectual attempts to "draw" Sir Thomas MacMahon were persevered in. At last, it seemed as if hostilities were being abandoned by mutual consent, and the artillery and heavy cavalry of the Southern Army had actually withdrawn from the front, and were returning towards the point where they were to encamp, when the intelligence, wonderful if true, was received that the 13th Hussars had crossed the river and were advancing in some force to reconnoitre Col. Tower, of the 3rd Legion Guards, at once led his regiment forward, thinking at the outset that he had only to capture a venturesome squadron. The 13th however, were supported, as it turned out, by the 9th Lancers, and ultimately by the 2nd Life Guards, whose darkened cuirasses we had thus the opportunity of seeing at close quarters. They however, always laboured under the disadvantage of charging uphill and over ploughed ground, while the Southern cavalry delivered their charges with the full impetus of descent. The movements were brilliant and exciting, the horses in some of the charges being reined in not at the prescribed distance of 100 yards, but at little more than ten feet or so from the opposing squadron. This was notably the case with the charges of the 9th Lancers and 2nd Life Guards, who did all that men could do to retrieve adverse fortunes. But the gradients or the accidents of the moment were against them, and in every instance the decision of the umpires was adverse to the attacks proceeding from the Northern cavalry. As already mentioned, had the contest lasted only a little longer, the infantry divisions would have reached the scene, and have imparted a new character to the struggle. Without them, though Sir Thomas MacMahon remained master of the heights, he could not venture to attack the bridges and fords which were guarded by infantry, and thus for to night, at least, the Southern Army is tied to its own side of the river. It was a subject of general remark that after the first signal achievement in shelling the Northern camp, the artillery on both sides was slow in coming into action, and thus the frequency and intensity of the cavalry charges were increased when a few well-directed shots in flank must have made either side turn its rein and gallop off. It was a singular coincidence that during the hottest episodes of the cavalry combat neither General Walpole nor Sir John Michel

was with the front lines, and the movements were accordingly directed by cavalry officers exclusively. Whichever side attacks to-morrow will have to encounter the disadvantage of marching up-hill, but the point where the attempt will be made is one most difficult to determine, for the Northern outposts guard a front from six to eight miles, and the point at which the South could most easily break through is one where they would suffer most from want of water. The duty of umpire on those occasions is one requiring no ordinary amount of tact, professional knowledge, and discretion, to discharge successfully, and so as to avoid offence to brother officers at a moment of such great and pardonable excitement. The umpires have each power absolutely to stop a movement that is in progress, but naturally they would be slow to exercise their power except in the plainest and most obvious circumstances. The rule is to change the side or at any rate the division to which an umpire is attached, so that, if possible, he may not have any *penchant* or predilection for a particular corps. To-day the turn of umpire was really no sinecure, for he had more than once to ride in between charging lines to prevent them coming into actual collision.

FRIDAY, SEPTEMBER 6TH.

"General Idea" of the Campaign.—The following official paper has been issued, and is quite necessary to a correct appreciation of the details of the manoeuvres which follow:

"The operations of the manoeuvres are represented by the action of the two corps forming the advanced portions of the two opposing armies. The Blandford (or Southern) Corps is part of a force which is marching from Weymouth on London, Dorchester is occupied, and a strong detachment has been sent forward towards Yeovil to cut the Wilts, Somerset, and Weymouth line of railway. Another strong detachment has reached Sturminster Newton, on September 5, in order to watch the Somerset and Dorset Railway, and to prevent any attack being made on the communications of the Southern Army from the direction of Wells or Bath. The right flank is protected by a force of 10,000 men, which has been landed at Poole for the purpose of co-operating with the Dorchester Corps, and has reached Ringwood by the 5th of September. Moreover, the whole invading force on this side of England (which may be taken at less than 50,000 men) is subsidiary to a main invasion on the eastern or southeastern coast. This invasion is in process of being checked. On the north side a corps of 15,000 men is collected at Pewsey, and constitutes the advanced portion of a force assembled at Aldershot, to stop the progress of the invader. In addition to this force troops are being got together at Bristol and Bath, and are preparing to join the Pewsey Corps should it advance to the Willey, or to support it if forced to retreat from the line of that river. Part of these reinforcements are capable of being sent forward to the neighbourhood of Warminster by the 6th of September. A strong position, that south of Salisbury, as well as the city itself, is held by the defending army, the force here amounting to about 6000 men of all arms. Wilton is occupied by a force of 3000 men. The Salisbury position is supposed to be too strong to allow of its being carried by the force advancing from the direction of Ringwood. The generals in command of the respective corps at Pewsey and Blandford have on the above suppositions full liberty of action (subject, of course,

to orders to be issued during the progress of the operations), with one restriction—namely, that neither force must cross the Willey river before four a.m. on the 6th of September. In naming this date no reference is made to the movements of the cavalry and horse artillery. Salisbury Plain offers peculiar advantages for the manoeuvres of these arms, and no doubt the generals in command of the corps will make the fullest use of their services during the advance. By Command.—J. W. ARMSTRONG, D. A. G."

Passage of the Willey—Battle of Codford Hill.—After the Cavalry actions of Thursday in which the tactical skill of the Northern horse did not show to as much advantage as their powers of making rapid night marches the actual fighting began to-day with the battle of Codford. The Northern Army stood on the defensive. Having seized the strong heights above the Willey, and having that stream flowing right across his front, Sir Robert Walpole decided to await the enemy's attack, on the principle that in real war the defender's aim would be to gain time for the assembling of the troops of the country and to check the advance of the invaders who would be anxious not to lose the advantage which their sudden landing had given them, and who would hardly hope to succeed if they did not do so at once. Hence there was as much reality about the appearance of the opening engagement as was possible.

Shortly after daybreak, therefore, the Northern generals disposed their advanced brigades in much the same way as yesterday, holding the Salisbury and Warminster road with outpost and a chain of sentries from Wilton to Codford, and guarding the various fords and bridges along the Willey. The reserves were brought up close in rear, and entirely concealed from view. A battery of field guns was planted behind the clump of trees on Little Down, and effectually concealed behind an artful construction of turf and haycocks. A similar battery was placed on an adjacent eminence to the right. The cavalry were chiefly in force in the valleys at the back of Lamb Down. Eight o'clock was the hour fixed for the fight, and the moment that hour was passed the enemy's invasion was anxiously awaited. But strange to say, the staff of the defending force throughout the morning did not seem to have any idea from which quarter to expect the attack. About nine o'clock a squadron of the 19th Hussars crossed the river and appeared to be reconnoitring the enemy, but to little purpose, or Sir Alfred Horsford would have met with a more adequate reception when he delivered his attack. Several troops of McMahon's cavalry continually manoeuvred within sight and range of the guns on Little Down, but it was seemingly only a feint, unsuccessful, as it happened, to discover what positions the artillery held. About eleven o'clock the whole of Brownrigg's Division on Stockton Down was visible to the spectators on Lamb Down, and whether the entire army was supposed to be there instead of half, I cannot say; but, at any rate, no visible emotion was depicted on the visages of the Northern brigadiers, and meanwhile Horsford's contingent was rapidly approaching, unmoistened and unperceived, to turn their right flank. When the cavalry outposts, driven in by superior numbers, came galloping back through Codford, regiments were hurried up from the left; but the defending force was certainly surprised, and why its cavalry made no reconnaissances of sufficient scope to ascertain the enemy's whereabouts seems to require elucidation.

We must now explain the tactics of the Southern Army. Seeing that the position of Walpole's left was covered by the imaginary force of 3000 men at Wilton, and 6000 men at Salisbury, Sir John Michel determined to direct his attack on and round the right flank, which rested on the heights over Codford; and in order to do so with effect and deceive the enemy, who looked very jealously after their left, about Wishford and Stapleford, he ordered a battalion of infantry, a squadron of cavalry, and two guns to advance from the pond on Telford Down till it came in view on the ridge, when it was to dip into Dinton Beeches-wood; then come again in sight at Hangin Langford; then disappear in the wood and behind it, and wheeling round out of sight to return to the point whence it had started, and set out at once to do the same thing again, thus giving the Northerners an idea that a force of horse, foot, and guns was moving eastward to force the passage of the Willey near Wishford. No doubt it made Walpole very uneasy if he shared the apprehensions of his outposts and of those who observed this Birnam Wood-like performance, and were convinced that Grovelly was "crawling with Southerner." Meanwhile, Sir Alfred Horsford led the 1st Division quietly, but rapidly through and behind the woods and down the sinuous valleys of Stockton, Sherrington, and Boyton Downs, until he reached Upton Lovel and Cortington. Here his troops, who had admirably preserved their invisibility throughout the march, forded the River Willey unopposed, and bringing up their left shoulders, advanced cautiously on Codford Knook, and Horse Hill. The taking of the village was very interesting and realistic. The houses were loopholed, the road barricaded, the bridges blown up—that is, these little details were carried out theoretically, by affixing expository placards to the walls and posts—and successive lines of infantry contacted every inch of ground with the most stubborn determination. Volley after volley was poured in on either side, and some of the peaceably disposed inhabitants must have begun to imagine that they were being invaded in earnest, so deafening was the rattle of the musketry, so dense the sulphurous smoke which shrouded the narrow lane, and so eagerly combative the contending regiments. So the Guards poured into the doomed hamlet, and in less than a quarter of an hour they held undisturbed possession, for the remnants of its defenders had found it imperative to retreat on Codford Hill.

(To be continued.)

SAVED FROM PIRATES.—The Germany bark *Coriolan* was attacked by pirates some months ago in the Indian Ocean, and lost ten persons out of her crew of eighteen. But for a device of the captain, who poured liquor tar on the deck and studded it with glass, thus causing the pirates to fall and cut their feet, the vessel would have been readily captured. When nearly every man of the crew had been killed or wounded, a British gunboat came to the aid of the *Coriolan*, and destroyed or captured nearly all the pirates. The prisoners ten in number, were summarily disposed of by being hanged at the yard arm.

The population of New Brunswick is 225,000, and that of Nova Scotia, 378,000. Halifax has 28,000 inhabitants, and St. John including Portland its near suburb, over 50,000.

FIELD ARTILLERY.

From an important paper contributed to the London Army and Navy Gazette, "by a distinguished officer who is charged with responsible duties," we take the following full extracts:

We are at present carrying out a complete change in our field artillery, with the avowed intention that it should be superior to that of any other European Power, and, considering the importance of artillery, and that our army must always be numerically weak compared with the Continental armies, the intention is evidently good. Our national wealth and mechanical skill ought to enable us to realize it. The subject is of such great national importance that it is most desirable it should be thoroughly discussed before the great expenditure of public money involved in the change is made. The ruling idea, apparently, in the re-modelling of our field guns has been to obtain a flat trajectory. To this end we are adopting larger powder charges and heavier guns than any Continental nation, or than we ourselves have hitherto used since the introduction of rifled artillery. Does the end justify the means? Does a flat trajectory increase the destructive power of field guns to such a degree as will compensate for the increased strain upon the guns and charge of gunpowder employed, the increased recoil, the consequent necessary increase in the weight of the guns, and all the disadvantages in the direction of diminished mobility which inevitably follow?

The ruling idea in the organization of the Prussian field artillery is mobility. To this end they employ light steel guns and small powder charges, throwing their projectiles with comparatively high trajectories. They are thus able, without unduly taxing their teams, to carry a large proportion of ammunition in the limbers with the guns, which latter are consequently much more independent of their ammunition wagons than ours. The advantages of this arrangement are very great. Batteries separated from their ammunition wagons occupy a much shorter length of road in the column of march; they can, therefore, be brought very much more quickly into action; they can also be manoeuvred more easily, and the liability to casualties when in action is much diminished. The first of these advantages, securing as it does an early development of a powerful artillery fire, is much dwelt on by the best writers on tactics, and it seems to have been in great measure owing to the superior artillery fire thus obtained in the beginning of an engagement that the Germans owed their marked success in contending with the French artillery in the late war, the French batteries being crushed in succession, as they were brought up, by the concentrated fire of numerous German guns.

In order to appreciate the value of a flat trajectory as applied to modern artillery, we must first consider the modern infantry weapon. For this latter a flat trajectory is essential. It means the maximum of efficiency on the battle field, because the necessity of judging distance with accuracy, always a most difficult task, and in the excitement of near conflict hardly to be expected from average men, is reduced to a minimum. The terrible efficiency of a good breech-loading rifle with a flat trajectory, such as the French Chassepot, in the hands of good soldiers, was recorded in the best blood of the Prussian Guard on the slopes of St. Privat. That gently sloping glacis, so thoroughly open and exposed to the fire of Canrobert's infantry, was simply impassable

for flesh and blood. Here, then, we have the proved conditions for perfect musketry defence. High initial velocity and a small bore, giving a flat trajectory for the weapons, steady soldiers to use them, and open ground without cover over which an enemy must advance under fire for 600 or 800 yards. But we know that even at ranges up to 1,000 yards good shots will reach their mark if it be a tolerably large one, and the grounds of men and horses necessary for working and moving field guns form targets of such a size that they can certainly be hit by well trained riflemen at all ranges under 800 yards. Colonel Smyth, R.A., reports that at Gravelotte Prussian artillery was silenced by French musketry at 600 yards, and that at 800 yards the duel was certainly not in favor of the larger weapon, even when the men and horses were partially concealed by accidents of ground.

Putting out of the question, then, for the present, machine guns, whether mitrailleleur, mitrailleuse, or Gatling, we may take it as an axiom that infantry fire reigns supreme up to 600 yards range, and that from thence to 900 or 1,000 yards good shooting with rifled small arms will generally be found superior to artillery fire. Practical artillery ranges commence, therefore, where practical infantry ranges end; or, in other words, artillery ought not as a rule to be brought within effective musketry range of the enemy's infantry, but should be kept between 900 to 1,000 yards as a minimum, and 2,500 to 3,000 yards as a maximum, from them. Between these limits artillery fire has full effect, while that of infantry is comparatively harmless. While fixing 900 yards as the minimum distance from the enemy's infantry at which artillery should as a rule be placed, it must be remembered that this distance will be from the enemy's skirmishers, and that their artillery and the large bodies of troops in rear of the skirmishers are the object on which artillery fire will be directed. The range, then in this case even would be little under 1,500 yds. On the other hand, it will happen sometimes that, owing to local peculiarities of ground, it may be necessary to push guns on close to the enemy in attacking, because from no distant point is his line visible; or in defence it may be desirable to keep guns in position rather than to withdraw them when the enemy closes. In either case the artillery will be sacrificed, but victory may be the reward of their devotion, and the commander may rightly decide that "le jeu vaut la chandelle." As regards the actual effect of fire at close quarters, however, infantry occupying the same length of line as the artillery will deliver a more deadly fire. Taking, then, the ordinary and useful ranges of artillery to be from about 1,000 yards to 3,000 yards, the questions arise, can we obtain flat trajectory at these long ranges, and is it desirable that the trajectories should be flat? It is difficult to obtain exact comparative results of practice made with foreign and with British guns, because the ranges at which the guns have been tried have been different. We have however some accurate information with regard to the Belgian 4-pounder—a gun very similar to the Prussian 4-pounder; but somewhat superior to it, and in reality a 9-pounder. The late comparative trials between the Armstrong 12-pounder and our new 9-pounder muzzle-loader have given us very accurate information with regard to their shooting powers. We know also that our new 16-pounder, which supersedes the Armstrong 12-pounder, gives to its projectile a trajectory very similar to that of our new

9-pounder, and considerably flatter than that obtained with the equivalent Prussian gun called a 6-pounder, but really a 15 1/2-pounder. We will take, then, as typical guns, the Belgian 4-pounder, the Armstrong 12-pounder, and the new British 9-pounder and give approximately the drops of their projectiles at different modern artillery ranges:

	At 1,000 yards.		At 1,300 yards.		At 1,770 yards.		At 2,000 yards.		At 2,500 yards.	
	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.
Belgian 4-pounder.	—	—	1	13	1	10	—	—	—	—
Armstrong 12-pounder.	1	29	—	—	—	—	1	10	1	7
British 9-pounder.	1	24	—	—	—	—	1	23	1	8

By interpolating we may assume that at 1,500 yards, which we may look on as the ordinary decisive artillery range, the drops of the projectiles from the three guns will be about 1 in 13, 1 in 15, and 1 in 18 respectively. Hence in order to hit a man six feet high at this range the Belgian or Prussian gunner must know the distance to within twenty-six yards, the British gunner with the Armstrong 12-pounder to within thirty yards or with the new 9-pounder to within thirty-six yards. The differences between the amounts of those permissible errors are very small, compared with the range, and the trajectories of all three guns, even at this comparatively short range, are very far from flat. At longer ranges, the curves become more and more considerable, and the differences between them less and less. As a practical result of the comparative trials of the two British guns, the chances of hitting the target were found to be about equal. At shorter ranges, it is true, the new gun has an advantage, by reason of its somewhat flatter trajectory; but when can this advantage be turned to account, seeing that artillery cannot now be brought into action at short ranges, except under penalty of the speedy annihilation of the gun detachments and teams?

The increased ranges at which artillery must now be used in the field is the essential fact to bear in mind. The fire of close shot, formerly the most formidable artillery projectile, is now no longer possible, except against a cavalry surprise. That question was settled in 1866, when the Prussian needle-guns invariably silenced the Austrian artillery firing close at close quarters. The graze firing of round shot, too, in positions such as slopes of St. Privat, formerly the most suitable for artillery defence must give way to infantry fire, which is now far more formidable in such cases. Artillery fire in the present day is, in fact, the curved fire of shells at long ranges. At these long ranges the distances must be determined with accuracy, or artillery fire is of no avail, and in the comparative calm of this distant conflict the determination of ranges, either by trial shots, or by a telemeter such as Nollet's is both a possible and an absolutely essential part of an artillery man's duty. The range once found, such slight differences in the drop of the shot as exist between the shooting of the Belgian gun and that of our own 9-pounder are of no practical importance whatever. The comparative trials of the 12-pounder Armstrong against the 9-pounder muzzle-loader have established this fact experimentally. I do not allude to the Armstrong 9-pounder, because it was always known to be a badly proportioned gun—in fact a 12-pounder spoiled.

May we not conclude, then, that our endeavor to produce fieldguns with flat trajec-

ories has so far only led to a sacrifice of mobility without a proportionate increase of efficiency? But the evil does not end here. If our field batteries and horse artillery are armed with guns whose supposed excellence consists in a trajectory at comparatively short ranges, the temptation is strong to the officers in command of batteries to adhere to the tactics which were suitable for smooth-bore guns, but which are totally inapplicable to the conditions of modern warfare. Formerly in the attack guns were pushed on with the infantry. The primary object was to get within round-shot range of the enemy in positions where the grazing or bounding fire of their projectiles would have full effect, and the ultimate object was to get within close-range shot range when the effect of their fire was deadly, and generally decisive. On the defensive the artillery was placed in advance of the front line of infantry, in order that its grazing fire directed upon the attacking troops might be freely used without danger of striking its own troops. Now we must change all this. The advanced positions and grazing fire of field guns, suited to old conditions of warfare, are impossible in the presence of modern small arms, and artillery must now be placed in more retired and elevated positions, whence they can fire over the heads of their own infantry, and drop their shells into hollows, or search out cover occupied by the enemy, or meet his artillery fire condemned in former times, because the effective ranges of artillery were short, and the downward angle of the line of fire of guns so placed was too steep to allow of ricochet; the effect was therefore small; but now, at long ranges the angle of descent of the projectile will be but slightly increased by the elevated position of the gun. For example, if a battery be placed on a hill 100 feet high, commanding a plain, at the modern rifled artillery range of 2,000 yards, the fall of the projectile due to the elevated position of the battery will be only 1 foot in 60 feet, while that due to the curve of the trajectory is 1 foot in 12 feet at least. At the old smooth bore artillery range of 500 yards, however, the case is at once reversed; the fall due to the position of the battery is 1 foot in 18 feet, and that due to the curve of the trajectory would be about 1 foot in 50 feet.

The advantages resulting from placing guns on high ground in the present day are great. Not only do they command a more extensive view over the surrounding country and see into hollows otherwise hid from them, but thus placed they can fire at all modern artillery ranges over the heads of infantry in front of them. In a defensive position, the close defence of the steep slopes and underfeatures of the hills on which the guns will be far more efficiently performed by infantry than by artillery, and in attacking guns placed on high ground can continue their fire up to the latest moment over the heads of the advancing infantry.

In our service we unfortunately continue to teach the principles which were applicable to former times, the distant sphere of modern artillery and the consequent necessarily curved trajectory not having been fully realized. Thus, "a plunging fire is little destructive. A gently falling slope of not more than 1 in 15 is to be preferred; the fire of artillery produces the most effective results on a slope of about 1 in 190." "The evils which result from perching guns on the highest eminence at hand are sevenfold." Sir Garnet Wolseley, however writes apply: "If the fire of infantry and artillery are to be effective at one and the same

moment, commanding positions must be selected for the latter from whence its rifled guns can play with safety over the heads of the infantry moving below them." Although he adds, "It is a mistake to place guns on such a high position that their shot strikes the ground below at so great an angle as to lodge there instead of ricocheting." Evidently alluding to the fire at short ranges of smooth bore guns. Discretion must, of course, be used still in placing guns on heights, and the highest knolls will generally be reserved as observatories for the generals and their staff.

I contend, then, for the following principles: 1. Modern artillery must, in all ordinary cases, be delivered at long ranges. 2. At these ranges flat trajectories are, probably, impossible—certainly they have not yet been attained—and, if desirable, they should be sought by reducing the calibre, than by increasing the charge. 3. Moreover, curved trajectories are more effective against an enemy concealed by cover such as shelter trenches. 4. It is therefore a mistake to use large powder charges and heavy guns with the object of obtaining flat trajectories. 5. It is better to use smaller charges and lighter guns, and to carry more ammunition in the limbers, so as to give the guns more independence from their wagons and to increase the mobility of batteries. 6. In selecting positions for artillery, high command is more advantageous than formerly, because it is more important to see far, and fire over the heads of the infantry. It is less disadvantageous than formerly, because the downward plunging of the projectile fired from a height is less at long than at short ranges, and is small compared with the inevitable curve at long ranges. The defence of the ground in front of the guns within musketry range is more efficiently performed by infantry than by artillery.

A serious mishap lately occurred at Chatham while the two 35 ton guns, "Woolwich Infants," were being unloaded. These guns are to be kept at Chatham until the *Devastation* turret ship, at present at Portsmouth, is ready to go to Chatham to take them on board. When the first had been raised several feet the breech of the gun got higher than the muzzle. The order was then given to lower the breech, but when it reached the level the engine-driver was unable to stop the engine. The result was that the breech got lower than the muzzle and being considerably heavier it slipped through the hawsers and fell with a terrific crash into the hold of the vessel, which commenced filling at once, and in a few minutes went to the bottom of the basin, guns and all, and they are now lying in 27 feet of water.

REMITTANCES Received on Subscription to THE VOLUNTEER REVIEW up to Saturday, the 4th inst.

GANANOQUE, Ont.—Capt. Wm. McKenzie. \$2.00	
	Lt. Geo. H. Mitchell... 2.00
	Lt. J. B. Haig..... 2.00
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DOMINION OF CANADA.



MILITIA GENERAL ORDERS.

HEAD QUARTERS,

Ottawa, 28th December, 1872.

GENERAL ORDERS (33).

MILITIA STAFF.

Lt. Colonel G. A. French, is appointed to the regimental command of the Artillery of the Province of Ontario.

Adverting to paragraph in No. 1 of General Orders (27) of the 24th November, 1871, in which Rank, Precedence and Command are given to Lieut. Col. Strange, the words "Deputy Adjutant General of Military Districts" are to be omitted, and the paragraph amended will read as follows:

"Lt. Col. Strange will take Rank, Precedence and Command in the Militia with all Lieutenant Colonels from the date of his appointment (13th September, 1871). He is appointed an Inspector of Artillery and Warlike Stores for the Dominion, and to the Regimental command of the Artillery of the Province of Quebec."

By Command of His Excellency

The Governor General,

P. ROBERTSON-ROSS, Colonel.

Adjutant-General of Militia.

Canada.

The diagonal steam life-boat cutter just completed by Mr. A. M. Ingersoll, of New York, and intended for the *Portsmouth*, is an exact model of the steam launch brought by the *Juniata* from Cowes, England. It is 23 feet long, 7 feet 6 inches beam, and 4 feet 6 inches deep, and has one-sixth more stowage than the ordinary boat, while it is much lighter weighing about 3,650 lbs. on account of the fresh water compartments being in this boat used as air tight compartments, thus making it a life-boat. No caulking has been done, and the seams are so close as to be hardly discoverable, notwithstanding there has been no paint used on it. It has two engines of 4 1/2 inches diameter of cylinder, 5 inches stroke, connected at right angles with two feed pumps worked direct from the main shaft. Moving parts of steel. The propeller is 26 inches diameter with 45 inches pitch, and the engines are capable of making 400 revolutions per minute. The boiler is horizontal, tubular steel one, 35 inches diameter and 41 inches long; the smoke pipes is 7 1/2 inches in diameter and 7 feet 3 inches in length above the grate. There is 2 square feet of grate surface and 77 square feet of heating surface, 79 composition tubes 1 1/2 inches external diameter and 21 1/2 inches long. Exhausts in condensing pipes of 1 1/2 inches outside diameter and 23 feet long, placed outside the boat on either side. The engines weigh 350 lbs., and the boilers 1565 lbs. It is variously stated that it will be capable of making from seven to nine knots an hour. The engines were built at the Navy-yard where the *bea* has just been launched.

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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, JANUARY 7, 1873.

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

On and after the 1st January next, the VOLUNTEER REVIEW will be discontinued to parties in arrears. All those desirous of continuing their subscription will please forward them direct to the office of the paper. The expense of paying a travelling agent to collect subscriptions is too great, and we mean to discontinue it for the future. To those who have regularly paid their subscription in advance we return our sincere thanks.

The day of Publication of the REVIEW (after the present number) for the future will be TUESDAY instead of MONDAY.

The present issue is the first number of the seventh Volume of the VOLUNTEER REVIEW. In returning thanks to the members of the Canadian Army, and our patrons outside the active force, for the very liberal support they have given to what is exclusively their organ, we are happy to be able to congratulate them on the progress of military science. The first number of the first volume of the VOLUNTEER REVIEW was published on Monday, the 7th of January, 1867.

The retrospect is not without its value when we compare the Canada of to-day with that in which it may be said the organization of the Canadian Army had its origin, and our Journal first saw the light.

Politically of little account, it had suffered

the indignity of a Fenian invasion, which had been repelled with some loss. Its military force an ill-organized mass of undrilled, but brave and willing soldiers. To-day with a powerful military force, the fourth commercial power in the world, the eldest daughter of Great Britain, without whose assent British diplomacy in North America will not be effective; reaching territorially from the Atlantic to the Pacific, it is little matter for wonder if the Canadian people should feel proud of the strides they have taken in five short years.

We have endeavored throughout to hold fast the principles which should govern any military paper and to inculcate them on our readers—our duty to our Sovereign and our country—the integrity of the British Empire—and the necessity for the maintenance of discipline, above all things the first requirement of a citizen soldiery. It is not saying too much for the Canadian Army to state that in no other country in the world has the soldier attained more perfectly the power of divesting himself of the citizen and partizan than in Canada. It is a proud boast, and one that argues well for the future of the country; but our people are a law abiding race, and if they understand anything they know their duty to God and their country as their first obligations.

Our efforts have been directed to keep the force abreast of all the great improvements in military and naval science of the day. We have endeavored to do our duty by the active force with respect to matters affecting its welfare, as far as it was possible to do so in accordance with our obligations to discipline and the interests of the country.

There is, however, one matter which ought to commend itself to every member of the Canadian army, and that is the necessity of having the force represented at the Autumn Manœuvres of 1873 in England by a brigade of at least one battalion from each of the provinces of Nova Scotia, New Brunswick, Quebec, and Ontario, fully equipped and provided for. The outlay would not exceed one million of dollars; but such a display would do more to save the country financially many times its amount, that even in this aspect it would be a safe investment. As there are many Volunteer officers members of the House of Commons, we hope to see this question taken up next session.

It is hardly necessary to remind our readers that our columns are always open to all communications in accordance with discipline, and would earnestly point out to those amongst them desirous of making their thoughts known to the people of Great Britain the advantages offered by becoming members of the Royal United Service Institution. We shall be happy to send papers connected therewith to the address of any officer of the force desiring them.

In conclusion, we hope the Volunteer

force will profit by the lessons in military science so splendidly elaborated in England, and that the Canadian Army will now itself in every way worthy to support the flag that has braved a thousand years "the battle and the Breeze."

The attentive student of the changes which manipulative skill, and science have introduced into the practice of the mechanical arts cannot fail to observe how frequently experimental knowledge has been obliged to give place to theoretical dictation resting on the most slender basis.

In no department of arts or science is this principle more apparent than the *Art of War*, because it has always furnished the empiric with the fairest field for the exercise of his talents, and the people's money could be more easily got at to squander than that of private individuals; hence, since the impetus the late GEORGE STEPHENSON gave to the manufacture of iron, and the facility of producing it in unlimited quantities, as well as the application of a high order of mechanical science to its manipulation, experiments, so called, in the weapons and munitions of war have been incessantly going forward.

England has not only been able to revolutionize the whole art of manufacturing artillery and small arms, but she has substituted for her *wooden walls* the original elements of her power and greatness—vessels of surprising swiftness and capacity, constructed wholly of iron.

Since the invention of gunpowder and its application as an agent of warfare, the great problem before the military machinist has been to produce a weapon capable of withstanding successfully the utmost strain the explosion of the gases consequent on the ignition of gunpowder could place on it. Up to quite a recent period, the heaviest gun in any service was a 48-pounder, enabling a charge of 91bs. of gunpowder to be exploded in sending forth its shot with safety.

Since, then the world has witnessed the prodigies which have been produced from British Royal foundries, throwing a bolt of 700 lbs. in weight, with a charge of 120 lbs. of gunpowder; and it is evident that the limit has not yet been reached, for in a recent number we noticed the construction and successful trial of a 900 pounder for the Russian government.

As the weapons increased in power, it became necessary to increase also the defensive preparations. As far as land fortifications are concerned, there does not appear to be any well defined limits to resistance in this respect, but in what must be always the principal defence of great States—the Navy—it has been speedily attained. It has been asserted with good reason, that the last inch of armor has been floated, and the

question of ships *versus* artillery, has reached practically the same position that the man-at-arms of the middle ages occupied to the small-arms of a bygone period, and that in future the course to be followed will result in abandoning armor altogether as a defensive agent for naval purposes.

However this may be, there is about the whole question an amount of empiric dogmatism and experimental uncertainty that in a great measure retards the development of the true principles on which the results of mechanical science and skill should be applied to the art of war.

In the question of *artillery and armor*, this has been clearly shown, and in no case more fully than in the Impirical scheme dignified with the name of the *Torpedo* system, the advocates of which try to make it appear that artillery must be only an auxiliary agent in naval offence or defence in the near future. This theory, if it can be called so, was broached by the Navy department of the United States, and it is perfectly evident it has been used as a political tool to hide the fact, that neither in artillery or ships of war could that country pretend to the fifth class rank amongst the nations. But this new engine with a name manufactured for the purpose is introduced to draw attention from the fact that the States neither possess a navy, nor artillery. The success attending the *monitor* humbug has emboldened unscrupulous politicians to endeavor to hide the nakedness of the land by *scare-crows* to frighten away awkward inquirers, and the people of England, without waiting to see the result, have gone in for the system as an admirable weapon of actual naval warfare. As the English military papers are fond of quoting the example of the United States in the successful application of *torpedoes*, or as they should more properly be called *sub marine mines*, during their late interminable contest, it appeared to us that this success had been overrated, and a search into their own records confirms that idea.

A very extensive work, entitled "The History of the Navy during the Rebellion," by CHAS. BOYNTON, D.D., Chaplain of the United States House of Representatives and Assistant Professor of the United States Naval Academy, has been published. It is written in a pleasing style, with a shade or more of flattery, a large amount of cant, and a total distortion of facts and truth whenever the "farnal Britisher" is concerned. Apart from those very serious blemishes, its records respecting the value of the *torpedo* system may be taken without suspicion, for the good and sufficient reason that there was no advantage to be gained by any distortion of facts, and consequently no inducements to make false representations. We shall, therefore, proceed to give our readers a synopsis of the recorded facts of the working of the *torpedo*

system, extracted from Mr. BOYNTON'S volumes.

The history of *submarine mines* may be said to have its commencement in GIANNINELLA'S attempt to raise the siege of Antwerp by the blowing up of the famous bridge which ALEXANDER FARNESE, PRINCE of Parma, had thrown across the Scheldt, on the 5th April, 1585. The vessel was heavily charged with gunpowder, which was ignited by clockwork mechanism striking fire from a flint. Its application was thoroughly successful, as far as the destruction of the bridge was concerned. The reader, curious in this subject, will find the whole story in MOTREY'S "History of the United Netherlands," vol. I, page 198, etc. The charge was 7000lbs. of gun powder.

Early in the present century. ROBERT FULTON, a native of the United States, laid before the Emperor NAPOLEON I. a plan for the destruction of the British fleet blockading Boulogne, by similar means. This is what the Secretary of the Navy for the United States calls having *invented it*. But no use was made of the suggestion, as Napoleon was too good a machinist to be deluded by the projector, and knew the attempt was useless. An attempt was made to place cylindrical-shaped vessels under the counter or bows of the French line of battle ships lying in the Basque Roads by some English seamen. The machine was operated by clockwork, which could be set going on the instant of contact; but somehow it got to work in the boat, and as a matter of necessity was hoisted overboard before the ship was reached.

Subsequently Lord COCHRANE accomplished the destruction of the French fleet by a combination of fire ships and *explosion* vessels similar to those designed by GIANNINELLA'S, but far more powerful, as each vessel contained 1500 barrels of gunpowder, equal in all to 450,000lbs.

From this period till the Russian war of 1855 we learn nothing of submarine mines. The Russians used them lavishly in defence of Cronstadt. They managed to keep Admiral SIR CHARLES NAPIER, who was a good deal of a theorist, at a distance during the season of 1854. Admiral DENNIS, however, did not think the infernal *machines*, they were then called, particularly dangerous, and organized a regular service for *searching* for them. Large numbers were fished out, although three British vessels were struck by the explosive force without receiving any material damage. Admiral SEMMELIN incautiously exploded one on board the *Exmouth*, which injured several men and officers, including himself.

Those examined by the British officers were cases of galvanized iron holding about 10lbs. of powder, fired by contact, and were so far perfectly harmless.

The history of those engines is thus brought down to the civil war in the United

States in 1861, and as a large proportion of the naval fighting took place in narrow rivers, or shallow land-locked estuaries, the most favourable conditions for the development of a perfect system, (if such was involved in the mechanical or scientific principles governing submarine mines) was obtained.

The greatest problem in science and mechanics which has been presented for solution in modern days now occupies considerable attention in Great Britain, and not only there, but throughout the civilized world. It is what has been aptly called *The Battle of the Guns*, and resolves itself into the attempt to reconcile the theoretical conditions by which a given weight of a projectile propelled by a given weight of gun powder shall attain the greatest possible distance, and strike the hardest and most effective possible blow, with the mechanical and practical conditions under which effective force can be imparted to the projectiles.

The *Journal of the Royal United Service Institution* (No. LXVIII, Vol. XVI.) at page 343 and following pages, has an able article on *Naval Guns* by Commander WM. DAWSON, R. N., which throws considerable light on the manner in which this instructive question has been treated in England and other countries, and the present unsatisfactory conclusions arrived at after years of experiment, accompanied by tremendous expenditure.

In the opening paragraph, of this well considered and thoroughly practical treatise Capt. DAWSON lays down as an axiom that the offensive and defensive armament of a ship must necessarily be artillery under its modern acceptations, and says: "In whatever light we regard the newer and more annihilating weapons, it will be seen that for many of the most important purposes of maritime war there is ample room for the fullest development of artillery science. Pitched battles between ships and guns of precisely the same type cannot be regarded otherwise than as most exceptional, and it is most unlikely that special types of vessels will generally be at the right spot to do the particular work for which they were designed." . . . "It seems then undesirable that the offensive powers of individual ships should be limited to those necessary for penetrating the least vulnerable parts of similar vessels. There is, in short, no necessary relation between the armor and the armament of given ships. Most iron-clads, for example, are seriously damageable if not destructible outside their armor plating, and that by non-plate piercing weapons.

Capt. Dawson doubts the wisdom of reducing the armament of the new style of vessels of war "to a few heavy plate piercing weapons," and says that too much has been sacrificed altogether to the defence, inasmuch as the desire to strengthen the

latter leaves the low freeboard style or system liable to be overriden in action.

A quotation from Capt. COLOMB's paper on the "Attack and Defence of Fleets" shows that in six minutes from the opening of the Monarch's fire on the sister ship at 1000 yards, she will have fired 12 shots, in which one may have hit and another may have glanced, and it remains an even chance whether the hit will have penetrated the enemy's armor.

It is stated that rapidity of fire, when accuracy is not required, will be measured by each of the Monarch's 25-ton guns firing one round in two minutes and ten seconds, and only one effective shot in 1.41 or 8.7 percent, can be expected in any case. Even that would be subject to contingencies, such as breaking up in the guns, breaking up in the air, caused by hammering in the gun, wobbling, or turning over and falling short altogether, or what would be equally sure to happen in a lively sea, ricochetting, which would neutralize the effect of rifling and scientifically-constructed shell or shot.

The question of sighting naval guns is next treated, and the necessity of a long radius between the sights proved. This part of naval gunnery has been already noticed in the VOLUNTEER REVIEW.

Of naval guns there are three classes; Boat Guns, of which there appears to be five natures, breech and muzzle loading, smooth bore and rifled, wrought iron, steel and brass. Of these the breech-loader offers most advantages for loading and firing in the confined space of the bow of a boat, though as military men prefer muzzle loaders for field pieces, our newest boat-guns are of this nature. The superior accuracy which rifled guns affords when fired from a steady platform at known ranges is quite thrown away when firing from the bow of a pitching vessel at unknown distances.

The second class, or light guns, is of no less than nineteen varieties. As these have become in a measure obsolete, no great regret could be manifested in parting with them, with the exception of the 68 pounder of 95cwt., the 8 inch gun of 65cwt., and the 32 pounders of 56 and 59cwt., which are to be converted into very doubtful rifled guns by reaming them up and inserting wrought iron tubes of doubtful longitudinal strength.

The third class or heavy guns consist of all ordnance above six tons weight. There are at least eight different natures. The contest between guns and armor has resulted in a mass of calibres and weights of a most perplexing character, while the number and variety of projectiles are perfectly bewildering.

In foreign navies the following description of heavy guns are to be found:

The 15 and 20 inch guns in the United States the projectiles are 425lbs. and 1000lbs. charges 75 and 100lbs.

The heaviest gun in the French service is of 10.8 inch bore, projectiles 175lbs.; charge 75lbs.

The heaviest Danish gun is 11.24 inch in the bore, projectile 462 lb. charge 60lbs. of powder. There are also 9 and 10-inch muzzle loaders with projectiles of 311 and 400lbs.

The heaviest Italian gun is a 10 inch, projectiles 400lbs.; charge 60lbs.

Holland a nine inch gun. Austria 8 and 9 inch guns, all these are muzzle loaders.

The German Navy intend to adopt 10-238 and 11-05 Krupp steel breech loaders, projectiles lead coated of 411 and 513lbs, respectively. At present the heaviest guns are 8 and 9 inch breech loaders.

Russia has adopted the 11 inch Krupp guns.

Sweden, and Spain have a 9 inch breech loader with a projectile of 316lbs. and a charge of 52lbs.

England has adopted 10, 11, and 12 inch muzzle loaders which fire with imperfect rotation projectiles of 400, 530, 600 and 700 lbs. with charges of 70, 85, and 100lbs., and are mounted on the gun-carriages invented by Capt. R. A. E. Scott, R. N., the best, and most effective gun-carriage in the world, as it enables four men to work the 25-ton gun in the Hotspur's broadside.

An exhaustive analysis of the various modes of constructing heavy guns follows, in which a detailed table of the disasters caused by the employment of block steel for guns is given showing that no less than 24 have burst, four being attended with loss of life.

As the VOLUNTEER REVIEW has given a description of the manner in which all these guns were constructed in its last volume; it will not be necessary to refer to the very able analysis of the lecturer, he states however, that the cost of the different systems are as follows:

Cast iron Guns	£21 steel per ton.
Armstrong wrought Guns	105
Fraser cast iron Guns	65
Krupp's or Whitworth's steel Guns	170
Gun metal	190

The requirements in a naval gun is thus stated. The elements of rifling are at least sixteen in number and admit of several combinations.

- 1st. The form of the bore.
- 2nd. The form of the grooves.
- 3rd. The number of the grooves.
- 4th. The twist.
- 5th. The calibre for a given weight of projectile.
- 6th. The nature and arrangements of the studs, ribs or other agency by which rotation is effected.

Military Ordnance required, according to Colonel OWEN (Modern Artillery, page 31)

- 1st. Accuracy of fire.

2nd. Simplicity and durability in both projectile and gun.

3rd. Non-liability of projectiles to jam in the bore in loading or firing.

4th. Must not cause too great a strain.

5th. And allow of large charges.

Admiral A. C. KEY late Director General of Naval Ordnance, has left on record a classification of six wants in a good naval gun.

1st. Strength, (to withstand heavy charges) endurance, and regularity of construction.

2nd. Penetrating power at ranges up to twelve hundred yards. It is certainly the most important item in the existing circumstances of naval warfare. It is the most difficult to obtain, and without it all other qualities are useless.

3rd. The use of a powerful shell.

4th. Simplicity as regards non-liability to derangement and facility of working. Of all systems the muzzle loading smooth bore has the advantage in these points; the gun without grooves or any working parts, the shot without studs, and of such a form that it will roll home of itself. The Woolwich or Service System retains the disadvantages of a grooved gun and studded projectiles.

5th. Accuracy with a lower trajectory, especially at ranges under 1500 yards.

6th. Extensive range for special purposes will prove of considerable value in circumstances under which the increase of range will be necessary will, however, be of rare occurrence. This quality is therefore not a necessity for naval ordnance.

The soldier places accuracy of fire as the first requisite in artillery for military purposes. The seaman places it as the last in artillery for naval purposes, and the mistake which Captain Dawson clearly points out is the fact, that the military artillery has been allowed to force on the navy guns totally unsuited to the special conditions under which they must be fought.

With respect to this very question of accuracy Admiral A. C. KEY says — "It is comparatively easy to obtain it to such an extent as is sufficient for purposes of naval warfare. Under the ordinary circumstances of a naval action the probability of striking an enemy's ship is dependant far more on an accurate knowledge of the distance, on the steadiness of the vessel carrying the gun and the skill of the man who fires it, than on the qualities of the gun itself. Any of the systems of rifled ordnance which have been tried with any degree of success, possesses sufficient accuracy for ordinary warfare. Indeed it is highly probable that the 100 pounder or 68 pounder smooth bore guns would strike the enemy more frequently at 1000 yards range and under than the best and most accurate rifled gun yet made, owing to the regularity of ricochet and low trajectory at short ranges." Capt. DAWSON states he has proved the truth of that statement by experiment; hav-

ing made better practice from a lively gun boat at 3000 yards with a 68 pounder, than rifled guns fired at the same time.

(To be continued.)

Our contemporary the *Broad Arrow* has been taken to task by the United States *Army and Navy Journal* of 21 December, for daring to compare the naval power of that country and Great Britain, between which no comparisons really exist, and our contemporary in trying to conciliate our neighbors forgets that no *entente cordiale* is possible between the Yankee and Britisher.

We are not prejudiced in the slightest degree, we like the people of the United States individually, but we are near enough to know that no lasting peace is possible between us; as long as British statesmen are fools enough to be led by a knot of traitors, so long will the Yankee by alternate bullying and cajoling overreach them. And when ever the opportunity of striking with effect presents itself, no restraint of treaty or relationship will retard the blow.

If the lessons of the past have not been thrown away on the English people, they would be more cautious in dealing with a nation alien in everything but language, who makes no secret of undying hostility, and whose power of mischief is only limited by its utter impotence.

It is to be hoped that *Broad Arrow* and other English journals will take the lessons plainly taught by the article referred to (which will be found in our columns), and place no dependence on a people who neither understand nor care for the friendship of Great Britain or the good opinion of its people.

The two articles which appear in the *Volunteer Review* today will give the reader a good idea of how history is and has been generally written. It would seem that so recent a matter as the circumstances which led to the death of Stonewall Jackson, the great Confederate general, should be no subject for difference of statement; but we have it on what is generally considered as good authority on both sides. The evidence of the confederate officer appears to be the most reliable; it is, however, an entirely historical question.

3rd SUSSEX (HAILEHAM) ARTILLERY.

This corps, which is extended over the district lying on the coast between Eastbourne and Newhaven, was this year inspected, by batteries, in July and September, by Colonel Chermiside, R.A. The inspection of the 1st Battery took place at Eastbourne; that of the 2nd at Blatchington Battery, near Seaford. Captain commandant Darby's battery paraded at the Ordnance-yard, Eastbourne, with two 12-pounder guns, with six horses each, and ammunition waggons, three mounted officers, besides Assist-Surgeon Sanger, and about forty uncommissioned officers and gunners. After receiving the Inspector in the usual manner,

the battery marched about a mile across Langney Beach to practice at part of a dismantled martello tower, which has been undetermined by the sea and sold. Some good practice was made twenty-eight shots hitting out of forty rounds at 1,100 yards. At Blatchington about forty of Capt. Turner's battery were inspected in garrison drill and practice with the 64 pounder converted M.L.R. guns, from which thirty rounds of elongated shell were fired at a target moored in the sea at 1,300 yards' distance.

Colonel Chermiside expressed himself highly pleased at the way in which Captain Darby's corps moved and worked the guns of position, and since the inspection has been present to see the 2nd Battery out with horsed guns, when they showed themselves equally conversant with them as with garrison guns.

Every exertion is used to raise the strength, so that the corps may be strong enough in numbers to have a complete battery of 40-pounder Armstrong issued, two of which are already received. The farmers in this neighbourhood are at all times willing to lend horses to the corps when required, and a register is kept by the commanding officer of something like 300 horses available in case of invasion, for concentrating batteries of position on the coast, or wherever it may be necessary for them to be moved. We hope to see the farmers of other districts follow the example. Since completing his tour of inspection, Colonel Chermiside has requested Captain Darby to convey to his corps, referring to the 1st Battery, the expression of the very great satisfaction with which he witnessed the parade of the horsed battery on the occasion. The appearance of the men, the march, and subsequent practice, were in all respects most creditable; all the duties were carried out by officers and men alike with a steady confidence, which was to him a convincing proof of their ability to move and work the position guns with facility and good effect. And as respects the 2nd Battery, the drill and practice with 64-pounder converted M.L.R. guns were everything that could be desired. Every officer and sergeant of the corps attended the inspections, as well as a fair percentage of the gunners, and we think the result must be considered highly satisfactory.—*Volunteer Gazette*.

The London *Broad Arrow* draws a comparison between Great Britain and the United States as to their respective navies, which, although it is intended for home instruction, might also have a reflex value for us who are used as the frightful example, if it was presented with more force and knowledge. The writer thinks that we are at fault because we are not more lavish in our expenditures for the Navy. If we have been parsimonious—as we think in some respects we have been—we surely have saved ourselves from some of the grievous follies that the English Admiralty has committed. We cannot too highly commend the details of construction of the British Navy—the superb steam machinery, the wonderfully perfect solid armor plater magnificent iron hulls, and general perfection of the fittings. But ever since the introduction of steam the British Admiralty has made an almost uninterrupted series of blunders concerning the general principles which have guided their constructions. When the screw propeller was invented and practically demonstrated to the satisfaction of competent observers, and even after it was an established naval success, the Admiralty refused to adopt it, and went on

building cumbersome and worthless paddle wheel ships. It was only after the launch of the French new line-of-battle ship *Napoleon* that they perceived their error, and in a regular panic rushed to the construction of a screw fleet. The visit of our *Merrimac* to England in 1856, with her splendid battery of shell guns, gave them another scare, and forthwith they began to build a fleet like that of ours, of which the *Merrimac* was an example. Those fine screw frigates, the *Mercey*, *Doris*, and *Orlando*, were then constructed. Their next scare occurred in 1859 or 1860, when the French launched the iron-clad *La Gloire*. The whole island rang with alarm, and the *Warrior*, *Black Prince*, *D. Feuch*, and assistance were soon on the stocks, and their completion eagerly awaited. These fairly lannched, the American war burst upon them, and in less than a year after its commencement first battle between iron-clads was fought in Hampton Roads, and the little *Monitor* dictated reconstruction to all the navies of the world. A real "Parliamentary panic" thereupon ensued; the work on the new sea coast fortifications was suspended, and there was general naval confusion and uncertainty. But England contented itself for years with futile criticism and wrangling, the essential principles of the system, as we showed at the time, failing to come within the comprehension of the British naval mind. The English literature on the monitor question, from 1862 to 1867, would of itself fill one of their largest iron clads, which, by the way, might as well be devoted to that purpose as any other, for the one is just as dead as the other. At last when the iron clad era was on the wane, John Bull was suddenly converted to the monitor system, and began to build a fleet of tremendous monitors like the *Deceitful*, *Thunderer*, and *Gladius* noble; ships of themselves, which, if they had been built five years before might well have made other powers tremble for their naval supremacy, but which are now almost as far behind the age as the paddle wheels of 1845 were behind the screws that superseded them. What are they but food for submarine attack and amphibious projectiles of awful explosive power? Following its unbroken precedent, England will probably by the end of the decade suddenly wake with alarm to the fact that the era of the attack below the armor has come in and that it has given an entirely new phase to naval affairs.

No, Great Britain is not to be assailed because she has not spent money enough on her Navy, but because she has spent it unwisely and often even stupidly.

The *Buffalo Courier* of Saturday says that in view of the prospect of an immediate enlargement of the Welland Canal, the Northern Central Railroad of Pennsylvania contemplates extending its trunk line from its present northern terminus, at Canadaigua, to Great Sodus Bay on Lake Ontario. The distance is about thirty miles. This extension will open communication with Canada by water, increasing the coal trade and freight business on one side and furnishing facilities for conveying away the products of the iron ore which is found in abundance opposite Sodus Bay, Canada.

THE OLD MAN IN THE STYLISH CHURCH.

Well, wife I've been to church to-day -
Been to a stylish one -
And seeing you can't go from home,
I'll tell you what was done,
You would have been surprised to see
What I saw there to-day;
The sisters were fixed up so fine,
They hardly bowed to pray.

I had on those coarse clothes of mine -
Not much the worse for wear -
But then they knew I wasn't on -
They call a millionaire
So they led the old man to a seat
Away back by the door,
'Twas dookless and unushioned,
A reserved seat for the poor.

Pretty soon there came a stranger
With gold ring and claret in
They led to a cushioned seat
Far in advance of mine;
I thought that wasn't exactly right,
To seat him up so near,
When he was young and I was old,
And very hard to hear.

But then there was no accounting
For what some people do;
The finest clothing now-a-days
Of gets the finest pew;
But when we reach the blessed home,
All undefiled by sin,
We'll see wealth being at the gate,
While poverty goes in.

I could not hear the sermon,
I sat so far away,
So through the hours of service
I could only "watch and pray,"
Watch the deings of the Christians
Sitting near me round about;
Pray that God would make them pure within
A they were pure without.

-From the Christian Journal-

STONEWALL JACKSON.

In the autobiography of Joseph W. Revere, entitled "Keel and Saddle," and published by Osgood and Co., of Boston, a few pages are devoted to the late "Stonewall" Jackson. The first relates to a conversation with Jackson on a Mississippi steamer in the spring of 1852. Revere tells the story thus, and we give his narrative here with some doubts, but perhaps worthy consideration:

Among my fellow passengers on the steamer was Lieutenant Thomas J. Jackson, of the United States Army, who seemed at first a remarkably quiet, reserved, although very intelligent officer, and with whom I soon became acquainted, for there is everywhere a sort of *cameraderie* among officers of the two services which attracts them to each other in a crowd of strangers. For several days the inland voyage continued, and our nights were partly spent upon the hurricane deck of the steamer engaged in conversation.

One of these conversations was so peculiar that it is fixed it upon my memory, and subsequent events proved it worthy of record, although, I confess, I hesitate to put in writing anything which seems to border so nearly on the marvellous.

One clear starlight night, as we glided alone the calm river, our conversation turned upon the firmament and its countless orbs that looked down upon us. Jackson asked me if I had ever been induced to take a flight from the study of nautical astronomy, practised by all the naval officers, into the realms of astrology. I replied that I had always been interested more or less in those mathematical studies required in nautical calculations; and that, from the exact rules demanded for working the various problems of the ephemeris, I had, sometimes, to amuse the idle hours of a life, worked out the nativities of my shipmates. I had even taken Zeller's Almanac and used his rules,

but without believing in the science of judicial astrology. Jackson, however, was not so incredulous, although it was evident that he had not then decided fully within himself as to the truth or falsehood of this exploded science.

"Why," said he, "should we be ridiculed for believing in this as in other occult sciences in this nineteenth century? Magnetism! magnetic somnambulism!—who shall say that the science of aerostation will not be made practically useful to mankind? Why should not the buoyant and elastic element surrounding our earth be made the vehicle of transportation from clime to clime for man and his increasing necessities? I will go farther, and ask, Who can doubt but that it will eventually be so used like its twin-element upon which we are now afloat? The means of directing those forces which we know exist have not yet been discovered; but that does not prove that the air will not some day find its Fulton or its Watt. The imperfect vision of things often appears to the intelligence before the things themselves. The learned are free to confess their ignorance, but they should not elevate it into a principle. They may understand and explain an immense number of phenomena, but the causes of those often entirely escape them, or they are compelled to take them upon trust as insoluble mysteries. Ask these savans the why and the wherefore of the natural actions they investigate, and they assume a solemn air and refer you to the fabulous ages of science. It is much easier to deny any relation of spirits to matter than to demonstrate it."

"If the illuminati of the middle ages have not made sciences at least we cannot deny they have made poetry. Sentiment led them into the sphere of illusion, it is true; but illusion is often the shadow of truth. Let it be remembered that Kepler was an astrologer. The mathematician Cardan relates that the events of his life were announced to him through dreams, presentiments and apparitions, by his familiar genius and by the movements of the stars. And these were strong minded men. Even Napoleon believed in his destiny, and is said to have carried his belief in the supernatural further than his historians will admit. Those bright orbs above us are living creatures. Each one of them is animated by a certain intelligence gifted with forces, and they act directly upon our planet. Each ray of light falling to earth finds its destination in the animate world. Not a living being, not even a flower, but has its patron and guide on high in one of those orbs suspended in ether. Why should not this wonderful influence transmitted through space, this communion of souls as it may be called, this correspondence of the spheres, forming a universal bond of union, determine also the destinies of the beings they are known to influence? Whenever one of those worlds approaches another, does not each endeavor to draw the other within the sphere of its attraction? And who in this day will deny the Newtonian theory?"

"To foretell events, to pierce the heavy mist that conceals from us the secrets of fate, is a universal longing of the human heart. This longing is felt in the hut of the savage as well as in the palaces of the great. So fierce and universal a desire must be one of nature's mysteries. She has already opened our eyes to so many it cannot be that she means to deceive us in this one.

"If we do not read in the great book eternally open before us in the skies, as we have already done in that book the leaves of

which are in the strata of the earth, it is because we have only learned to spell as yet in the alphabet of mystery."

Before we parted at Pittsburg, a day or two after this conversation, I had given Jackson the necessary data for calculating his horoscope and in the course of a few months I received from him a letter, which I preserved, enclosing a scheme of my nativity. As any one who may have calculated these schemes by the rules must know, a horoscope may be interpreted in various, even contradictory, terms by different persons, and this was no exception to the rule. The only reason I had for remembering it at all was that our destinies seemed to run in parallel lines, and so far it was remarkable. It was this peculiarity that caused Jackson to communicate with me and the reason why I laid it carefully aside for a re-examination.

The several planets were placed in their respective houses above and below the horizon, and Saturn being near the meridian and approaching a square with the moon, great danger was to be apprehended by the native at the period when the aspect became complete. Mars also bore a threatening aspect, while Jupiter was below the horizon and semi-sextilo, which was not altogether unfavorable. There was no trine, and the sextile was weak. Altogether, from the evil aspect of the square of Saturn, which threatened an opposition—that most dreaded of all the evil aspects of the heavens—the scheme was quite dangerous and malign.

The precise time and nature of the threatened danger, requiring a second calculation accompanied the scheme, prognosticating the culmination of the malign aspect within some ten years, or during the first days of May, 1863, at which time the native ran great risk of life and fortunes; but, in case he survived that peril, the ominous period would never again recur.

In his letter Jackson says: "I have gone over these calculations several times, as their result is almost an exact reproduction of my own. It is clear to me that we shall both be exposed to a common danger at the time indicated."

Having but little faith in the almost forgotten and altogether repudiated science of astrology, I took little heed of either his scheme of nativity or his letter, regarding the former as ingenious, but as merely a proof of an ardent and somewhat enthusiastic temperament, while I little imagined at that time that the rather unpolished and rugged exterior of Lieutenant Jackson concealed a character destined to become famous among his countrymen.

The second extract relates to the circumstances attending Jackson's death.

I served in the army until after the battle of Chancellorsville, participating in all its important engagements, and the greater part of the time commanding a brigade. At the battle above named I was an involuntary witness of an event which had an important bearing on the issue of the war, and which has been a subject of prolonged controversy. I refer to the death of Stonewall Jackson. The circumstances under which I acquired the right to give testimony in the matter were somewhat remarkable, and I here give a full statement of them:

The left of my brigade line lay near the plank road at Chancellorsville, and after night had fallen I rode forward, according to my invariable habit, to inspect my picket line. The moon had risen and partially illuminated the woods. I began my inspection on the right of the picket line, pro-

gressing gradually to the left, where I stopped to rectify the post of a sentinel not far from the plank road. While thus engaged I heard the sound of hoofs from the direction of the enemy's line and paused to listen. Soon a cavalcade appeared, approaching us. The foremost horseman detached himself from the main body, which halted not far from us, and riding cautiously near seemed to pierce the gloom. He was so close to us that the soldier nearest me levelled his Rifle for a shot at him; but I forbade him, as I did not wish to have our position revealed, and it would have been useless to kill the man, whom I judged to be a staff officer making a reconnoissance.

Having completed his observations this person rejoined the group in his rear, and all returned at a gallop. The clatter of hoofs soon ceased to be audible, and the silence of the night was unbroken, save by the melancholy cries of the whip-poor-will, which were heard in one continued wail, like spirit voices, when the horizon was lighted up by a sudden flash in the direction of the enemy, succeeded by the well-known rattle of a volley of musketry from at least a battalion. A second volley quickly followed the first, and I heard cries in the same direction.

Fearing that some of our troops might be in that locality, and that there was danger of our firing upon friends, I left my orderly and rode towards the Confederate lines.

A riderless horse dashed past me towards our lines, and I reined up in presence of a group of several persons gathered around a man lying on the ground apparently badly wounded. I saw at once that these were Confederate officers, and visions of the Libby began to flit through my mind; but, reflecting that I was well armed and mounted and that I had on the great coat of a private soldier, such as was worn by both parties, I sat still, regarding the group in silence, but prepared to use either my spurs or my sabre, as occasion might demand.

The silence was broken by one of the Confederates, who appeared to regard me with astonishment: then, speaking in a tone of authority, he ordered me to "ride up there and see what troops those were," indicating the rebel position. I instantly made a gesture of assent and rode slowly in the direction indicated until out of sight of the group, then made a circuit round it and returned within my own lines. Just as I had answered the challenge of our picket the section of our artillery posted on the plank road began firing, and I could plainly hear the grape crashing through the trees near the spot occupied by the group of Confederate officers.

About a fortnight afterwards I saw a Richmond newspaper at the camp at Falmouth, in which were detailed the circumstance of the death of Stonewall Jackson. These left no doubt in my own mind that the person I had seen lying on the ground was that officer, and that his singular prediction, mentioned previously in these pages had been verified.

The following is the extract from the newspaper account.

"General Jackson, having gone some distance in front of his line on Saturday evening, was returning about eight o'clock, attended by his staff. The cavalcade was, in the darkness, mistaken for a body of the enemy's cavalry, and fired on by a regiment of his own corps."

Then, after detailing what took place after the General fell from his horse, the account proceeds:

"The turnpike was utterly deserted, with the exception of Captains Wilbourn and Wynn; but, in the skirting of thickets on the left, some person was observed by the side of the wood, sitting on his horse motionless and silent. The unknown individual was clad in a dark dress, which strongly resembled the Federal uniform; but it seemed impossible that he could have penetrated to that spot without being discovered, and what followed seemed to prove that he belonged to the Confederates. Captain Wilbourn directed him to ride up there and see what troops those were—the men who fired on Jackson—and the stranger rode slowly in the direction pointed out, but never returned with any answer. Who this silent personage was is left to posterity," etc.—*Richmond Engineer*, May 12, 1863.

Jackson's death happened in strange coincidence with his horoscopic prediction made years before; but the coincidence was, I believe, merely fortuitous, and I mention it here only to show what mysterious "givings out" we sometimes experience in life.

THE DEATH OF STONEWALL JACKSON

A CONFEDERATE WITNESS EXPLAINS ATTENDING CIRCUMSTANCES.

From the Norfolk Virginian, November 23.

Atlantic Hotel, Norfolk,

November 26, 1862.

Editor *Virginian*:—

Agreeable to your suggestion that the statements made in the subjoined extracts from a recent letter received by me from Captain Thomas C. Chandler, ought to be put on record in print, for the better preservation of the facts therein stated, I furnish them to you as below.

SENEX.

Milford, Caroline country, Va..

November 23, 1872.

—, Norfolk, Va.

MY DEAR SIR,—Your esteemed favour of 22nd inst. has just been placed in my hands and I shall with much pleasure give you the facts respecting the circumstances connected with the death of our beloved Stonewall Jackson. I see nothing erroneous in your communication of 4th instant to the *Norfolk, Virginian*, but as you desire a statement fresh from my own memory, and did not give one or two particulars which follow in this letter, I will now comply with your request.

If General Revere means in his narrative to imply that he rode through the first Confederate line of battle in the wilderness, either on the 2nd or 3rd May, 1863, and saw in the rear of that line (and it was only there he could have seen) the person of General Jackson, wounded and lying on the ground or borne or a litter, then he means to imply what never took place. But to the facts: We opened the fight on Saturday, May 2, at about one hour before sundown, and drove the Federals pell-mell until nine o'clock that night, capturing in the pursuit a good many prisoners and some four or six brass cannon. I do not think we lost over 100 men up to the hour mentioned—nine o'clock. There being nothing but starlight overhead intercepted mostly by the foliage of the densely thick woods, thus rendering our

movements in the dark dangerous to ourselves, and our (Stonewall Jackson's) corps having made a forced march that day to get in the rear of General Hooker, our general thought it best, I suppose, for us to halt at the hour last named for rest and refreshment, and resume the fight early next day Sunday, May 3. The right of the regiment to which I belonged (mine being the right company) rested on the plank road at a point one mile west of Chancellorville. After the line of battle was halted, and everything made as quiet as possible, General Jackson, giving orders not to allow any one to advance on us, and if they did to fire on them without halting them, rode off down the road accompanied by his staff and couriers, saying at the time that he was going to the front to establish a heavy skirmishing line for the night, and would then ride down the line. After getting his skirmishers in to position he found it would be impossible to ride down and inspect their line in the darkness, on account of the density of the undergrowth. The only alternative then left him, if he would come back by way of the plank road, was to dismount one of his couriers, which he did, and sent him back to the line of battle to say that he could not go down the line of skirmishers but would have to, and should return by the plank road. Neither the courier or his message ever reached our (Leath's) brigade, and therefore we knew nothing of General Jackson's intention to return back to us by way of the plank road. He with his staff and couriers, came up the road at a trot, supposing we had received his message. When I heard in the darkness the clatter of their horses' feet upon the planks I, like every one in the line, supposed that they who were approaching us were Federal cavalry who had broken through our line of skirmishers. When the party had gotten, as near as we could judge, within about twenty yards of our line, the order was given "Let them have it, boys." At this the first volley General Jackson was not touched, and he rode up to our line, saying, "I am General Jackson; cease firing." It was then that our boys gave him the road to pass back to the rear. So soon as he had passed through our (the first) line, the second line of battle, drawn up about 100 yards in our rear, who of course, had heard our firing, followed immediately by the noise of Jackson's horse trotting on the hard planks towards them, supposed that the enemy's cavalry had broken through the first line of battle and were charging on them. They thereupon, in quick succession, poured volley after volley into him, and into our (the first) line. It was by their first volley that General Jackson was wounded. This happened not ten yards from where I stood. My brother was shot down at that time, near me, by the fire from the second line. In answer to your questions whether our first line of battle closed up directly after Jackson had passed through it, I replied that it was closed the moment after he passed through, and was not afterwards opened or broken that night. True the Federals, believing that we were firing into each other, advanced and made some four or five desperate attempts to drive us, and for one hour it fairly rained grape and cannister, to say nothing of musketry. But they did not succeed. . . . Neither General Revere nor any other Federal ever saw Stonewall Jackson after he was wounded, except he was a prisoner of war and in the hospital where General Jackson drew his last breath. All the Federals had retired from their attempts to drive

us that night, there working parties were busy all night in felling trees and constructing breastworks to impede the advance which they doubtless expected we would make on them the next morning. The trees were so cut as to fall (lying thickly together towards our lines, and the limbs so trimmed in the form of thickly studded sharp points protruding towards us with other obstructions thrown up, made it a very difficult operation from the cause alone, to say nothing of the enemy's fire, for our men to get through the obstructions in the next (Sunday) morning's fight. After two desperate charges, however, on our part, we succeeded in taking their stronghold and driving them again. It was, under the circumstances, no easy matter, you may rest assured. I fell in the charge on Sunday morning as early as eight o'clock and therefore saw no more of the fight of that day. I can, I think, say with truth that if the sun had been some six hours high when we commenced the fight of the 2nd of May, we would have made a clear sweep of Hooker and his entire army, or at least of the larger portion of it.

I repeat that neither General Rere nor any other Federal ever came up to our first line of battle, much less passed through it and then safely returned, while they were at Chancellorsville. You are at liberty to use this letter in any way you think proper. I remain, dear sir very truly your friend,

THOMAS C. CHANDLER,
Late Captain in the Confederate Army of Northern Virginia.

AN IRON ISLAND.

That the *Devastation* is a success, so far as she has been tried, is now admitted. The ponderous monster, which squats upon the astonished waters with a dead weight of 10,000 tons, takes any ordinary waves with stolid indifference, whether she receives them end on, or upon bow, beam, or quarter. The prodigious bill of foam which her stem piles up when under way, washes, as was expected, clean over her forward deck, and she is often submerged aft; but her massive mid-section rides quietly enough, and those on board, her when anchored in the rolling tide-way at Spithead, say that she was "steadier than the houses ashore." She turns with great readiness and in a small circle, and her speed as proved in six trials along the measured mile, is not only equal to the promise of her designers, but it exceeds expectation. The mighty engines driving this island of iron, with an indicated power of 6,600 horses, with seventy-seven revolutions to the minute, got fifteen knots and a half out of the ship, and her mean rate at full steam is thirteen knots and three quarters. Here, therefore, is a craft which is vulnerable only to a very few guns, has the swiftness of a mail-packet, and the handiness—thanks to her twin screws—of a tug, while she could utilize these qualities to hurl upon the sides of an opponent the awful force of her 10,000 tons moving with the velocity of a spear. On board this remarkable man-of-war there are no less than thirty-four distinct and separate engines, and, indeed, the value which she represents is as serious as her fighting capacity. What remains to be learned is the behaviour of the ugly giant in a real Biscay gale; and whether or no the *cul de sac* which she carries aft will or will not prove a mistake in a heavy following sea. With stability assured to 50°, with no top gear to set her over and with decks which can

be hermetically sealed, she would be safe enough; but whenever she does roll, or pitch, or scud, the rivets and fittings in her huge body will be shrewdly tried. Except the Russian monitor, *Peter the Great*, nothing floating could resist or even challenge such a vessel, at once so strong and swift. The torpedo, no doubt, may yet be so developed as to make the *Devastation*, and all her terrible sisters, impotent against a defended coast. On the high seas at present she has no superior; though we suppose the day will come when even this amazing construction will be as obsolete as the three deckers of Nelson.—*London Daily Telegraph*.

A RELIC FROM THE ARCTIC REGIONS.—A correspondent of the *Pall Mall Gazette* writes:—The interest in the fate of the late Sir John Franklin and the expedition which accompanied him, has again been revived by the reception, in England, of an almost entire male skeleton, discovered in the Arctic Regions by Hall, the American explorer. It appears that the bones in question were taken to the United States, and presented by the discoverer to a geographical society, the members of which gave them in return to Rear Admirable Inglefield, C. B., our late naval *attaque* at Washington, who despatched them to our Admiralty. The bones are those apparently of a full grown man of 5 ft. 8 in. height, and one of the teeth was found studded with gold, which would indicate that the remains were those of an officer, especially as a piece of fine jersey was also discovered close to them.

A clod man was once asked why he did not get married. "Why, you see, sah," said he, "I got an old mudder, an' I had to do for her, you see sah, an' ef I didn't buy her shoes an' stockings, she wouldn't get none. Now, ef I was to get married I would hab to buy dem tings for my wife, and dat would be takin' de shoes and stockings' right out o' my old mudder's mouf."

BREAKFAST.—EPPS'S COCOA.—GRATEFUL AND COMFORTING.—The very agreeable character of this preparation has rendered it a general favorite. The *Civil Service Gazette* remarks:—"The singular success which Mr Epps attained by his homoeopathic preparation of cocoa has never been surpassed by any experimentalist. By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition and by a careful application of the fine properties of well selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills." Made simply with boiling water or milk. Sold by the Trade only in 1lb., 1/2lb., and 1/4lb. tin-lined packets, labelled—JAMES EPPS & Co., Homoeopathic Chemists, London, England



TO THE WORKING CLASS.—We are now prepared to furnish all classes with constant employment at home, the whole of the time or for the spare moments. Business new, light and profitable. Persons of either sex easily earn from 5s. to 45 per evening, and a proportional sum by devoting their whole time to the business. Boys and girls earn nearly as much as men. That all who see this notice may send their address and get the business, we make this unprecedented offer: To such as are not well paid, we will send 5s. to pay for the purchase of working. Full particulars a valuable pamphlet which will do to commence work on, and a copy of *The People's Literary Companion*—one of the largest and best family newspapers published—all sent free by mail. Reader, if you want permanent, profitable work, address E. C. ALLEN & CO., 752A MAIN ST.



NOTICE TO CONTRACTORS.

SEALED TENDERS addressed to the undersigned, and endorsed "Tender for Carillon Canal, Dam and Slide," will be received at this office until noon of Monday, the 27th day of January next (1873), for the construction of a Dam, Timber Slide, and Canal with two Locks, in the Carillon Rapids.

Plans and Specification of the works can be seen at this office, and at the Lachine Canal Office, Montreal, on and after Wednesday, the 15th day of January next, when printed forms of Tender will be furnished.

All Tenders must be made on the printed forms and to each must be attached the actual signatures of two responsible and solvent persons, residents of the Dominion, willing to become sureties for due fulfillment of the contract.

This Department does not, however, bind itself to accept the lowest or any Tender.

By Order,

F. BRAUN,

Secretary.

Department of Public Work,
Ottawa, 28th Dec., 1872.

1-31n

ORDNANCE LANDS.

PUBLIC NOTICE is hereby given that on SATURDAY the 1st day of February next at the Sale-room of J. Birmingham, Ottawa, and at the hour of noon will be offered for sale, the following Lots of Ordnance Land, to wit:

1st. The lease for twenty-one years from day of sale of two several wharf Lots, lying on the west side of the Rideau Canal to the south of the Sappers Bridge, Ottawa, between the said Sappers Bridge and the stores of the Messrs. Bates, each Lot having a frontage of 22 feet, by a depth of 100 feet more or less, as shown on plan. Buildings to be erected thereon within two years in accordance with plans to be submitted to and approved by this Department.

2nd. A piece of Ordnance Land known as broken lot No. 11, Cop. 5, South Crosby, County of Leeds, Ontario, contents being 35 acres, 3 rods and 24 square rods, more or less, together with a smaller piece of land contiguous to above, containing 1 rood and 28 square rods of land, more or less, with mines and minerals thereon being specially any mine of Phosphate of Lime, which may be, or may be found thereon. Terms Cash. Plans to be seen at the place of sale.

By Order,

E. PARENT,

Under Secretary of State.

W. H. COFFIN,
Ord. Lands Agent.

Ottawa, 27th Dec. 1872.

1-41n

READ THIS! All persons having leisure and wishing to increase their income, please send address prepaid to undersigned. Occupation easy and honorable, suited to all, & especially TO LADIES. \$2 to day without risk or expense. TO LADIES, \$1 per C. L. BOSSE, Montreal.

Wanted,

A BAND-MASTER for the P. W. B. Rifle Band. For particulars as to salary etc. apply to RICHARD W. BARROW, Captain, Resident Band Committee Kingston, Ont., July 19th, 1872.

30-1f.