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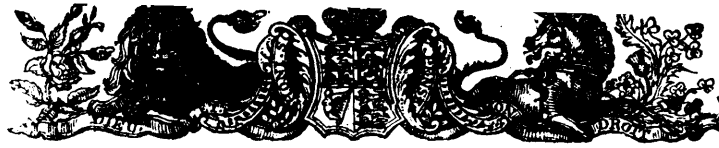
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The Volunteer Review

AND MILITARY AND NAVAL GAZETTE.

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

VOL. VII.

OTTAWA, (CANADA,) TUESDAY, FEBRUARY 18, 1873.

No 7.

NEWS OF THE WEEK.

The Spanish Consul at Liverpool offered a liberal reward for information which will lead to the discovery of the shipments of arms to the insurgents in Spain, and insurrectionists in the Spanish colonies.

Miss Rothschild to-day married Eliot Constantine York, son of Earl Hardwicke.

Mail advices from Rio Janeiro state that yellow fever is raging violently in Rio, the number of deaths averaging 40 daily.

The census of Brazil completed, shows the population of the Empire to be 10,000,000, including nearly 2,000,000 slaves and 250,000 Aborigines.

From Paris we learn that Prince Alphonse son of Don Carlo, one of the aspirants to the throne of Spain, was expected to arrive in that city on the 13th, in preparation for any eventualities that may occur at Madrid.

It is said the principal Communists of London, Brussels, and Geneva have started from those cities for Madrid.

The French Government has issued instructions to the authorities along the Spanish frontier to redouble their vigilance for the prevention of the violations of French neutrality.

Under date of 11th inst, we learn from Madrid that Bands of Carlists have made their appearance in the Province of Toledo.

The Senate has, by a vote of 59 against 6, passed a motion of confidence in the Ministry on the question of the course towards the Artillery with regard to the recent demonstrations of insubordination in that branch of the army.

The Government has created an Ordnance Department.

The Bill for the abolition of slavery in Porto Rico, will be taken up in Congress to day for discussion.

The snow storm which prevailed here yesterday also extended throughout the Northern Provinces, where the fall was very heavy.

King Amadeus manifests a disposition to abdicate the crown, in which case he will resign his power into the hands of the Cortez. The city is quiet.

The Cortez yesterday was the central

point of interest, and bulletins of its proceedings were anxiously awaited by crowds of persons in all the public places of the city.

The two Houses assembled at a late hour in the day. The formal message of abdication of King Amadeus was read in each Chamber separately. It opens with the statement that the King has maturely considered the question of what course he ought to pursue with reference to the Spanish throne, and has firmly resolved upon that course. When he accepted the crown, he did so under the belief that the loyalty of the people who had called him would compensate for the inexperience which he brought to his task. He had found that herein he was deceived. If the enemies who had beset his path had been foreigners, he would not have taken the course now determined upon, but they are Spaniards. By them Spain had been kept in perpetual disquiet. All his efforts to quiet her or put an end to the intrigues which were the source of her agitation, had proved unavailing. It was not enough that he had a partisan support. He had no wish to remain on the throne as king of a party. He therefore announced his abdication on behalf of himself and his heirs.

Senor Pio then proposed a resolution, establishing a Republic and vesting in the assembly the supreme power.

Upon the completion of the reading, the Senate and Congress met together in the chamber of the latter and constituted themselves the Sovereign Cortes of Spain. Senor Rivero, President of the Congress, was called to the chair and in a brief speech declared himself ready to answer for the preservation of order and the execution of the decree and of the sovereign power. A vote was then taken on the question of accepting without discussion the abdication of Amadeus and it was accepted unanimously.

A commission from the members of the Senate and Congress was then appointed to draft a reply to the message, and another commission to accompany the King to the frontier.

The resolution was adopted by a vote of 256 yeas, against 32 nays.

The Assembly was still in session when

the foregoing news was telegraphed from Madrid.

No further news had been received from Madrid. The announcement of the abdication produces a most profound sensation in Berlin.

The German papers hint that it was caused by French intrigues.

An Italian frigate has sailed from the port of Naples for Lisbon to meet Amadeus, and convey him to this country. Another man of war has gone to Valencia to bring away the ex-King's attendance and Court equipage.

The Federal Council has decided to expel Bishop Mermillo from the canton of Geneva.

The Federal Council have addressed a letter to the Papal Charge d'Affairs at Berne, denying in a sharp manner the right of the Pope to dismember the Bishopric of Switzerland. The letter requires Bishop Mermillo to decide quickly whether he intends to obey the Pope or the Swiss Government.

From Vienna we learn that the Bill providing for Ministerial electoral reform has received the approval of the Emperor, and will soon be presented to the Reichsrat.

The abdication of the Spanish King, shews clearly what a state that country is in as regards politics, and the utter impossibility of governing it in anything like constitutional principles. Since the death of Ferdinand VII, over forty years ago, the country has been delivered up to revolutionary measures, the leaders on any side having their own interests alone in view, while the traditions of the people are all in favor of the legitimate monarchy, a lot of speculative politicians have been attempting to impress what are called Republican ideas upon them.

We are decidedly of opinion that the Spanish Republic in full blast at Madrid, will have the permanence of a *Twelfth Night* Queen's reign, and the unhappy land will be again drenched with the blood of its people.

FRIDAY, 14th.—The curling match between the Jersey city club and the Hamilton city club, resulted in a victory for the Canadians at Hamilton.

NEW DRILL AND TACTICS.

(Concluded from Page 63.)

The *Times* commences a critique of the new drill and tactics by referring to the infantry:—In the first place, says our contemporary the battalion used to be the unit, and there has been an almost universal consent among tacticians that it is too large to be held in hand by one man, since the tendency has increased to cover wider spaces with the same number of men. This tendency comes directly from the power of the breech-loader, which covers more ground with its fire than the old weapon. The Prussians divided their battalions into four companies, placed a mounted officer in command of each company, and gave him and his 250 men more responsibility and power of initiative. The plan was found to work admirably, combined as it was with much tactical practice for all the junior officers. Each company was formed into two divisions, so that there were eight divisions in a battalion. In the English battalions there are for the future to be eight companies, and four of them, or a half-battalion, are to be placed under the command of one of the majors, who is of course mounted. As English battalions are weaker than Prussian, and as there is no such scheme for the perpetual supply during war of men trained previously in the battalion, there can be no doubt that the half-battalion will practically become not much stronger than the Prussian company. The English officers being also more numerous in proportion to their men than the Prussians it will be possible for the major to control a larger force than the Prussian company. But a further step has been taken, and one of almost inestimable value. According to the old Drill-book, officers were warned that, Her Majesty having approved the regulations, no deviation from them was to be permitted. No encouragement was held out in the English service to those who were ready to take responsibility, while exactly the contrary feeling was impressed on Prussian officers. They were allowed every latitude, and held responsible that no Regulations should be permitted to hinder their taking the initiative. In the new order given by the Duke of Cambridge, majors are told that much will depend on their adapting their movements to the exigencies of the moment, and they are to understand that it is their duty to profit by any openings which may occur, without waiting for orders. This may be accepted as one of the most important orders ever given to the English Army, and the fact is so inspiring that we hardly like to express the wish that it had been couched in the same terms as the one following it, whereby officers commanding divisions or brigades are told to understand clearly that the formations for attack and changes of front laid down are not intended to be adhered to "unless the features of the ground and the numbers and dispositions of the enemy suit." "In every case they must exercise their own judgment in adopting the formation best suited to the actual circumstances."

Proceeding to details, our contemporary thinks it rather a weak point that two of the small English companies are to be put together and called a double company, as it appears that one-half of the double company will frequently be skirmishing supported by the other half, and as all experience of modern war teaches that the supports will inevitably press forward into the line of skirmishers, breaking up into skirmishing order themselves, there will certainly be a mixture

of men known only partially to the senior captain, who will of course, in such a case take the command. To obviate this difficulty, each double company is recommended to work constantly at drills as a compound body, so that both captains may be acquainted with the men of both single companies.

Heretofore, no authorised formation for attack other than the advance of a whole brigade in line has existed, but the new order will cause a battalion acting alone to send either a definite half-battalion or half of each half-battalion to the front as skirmishers and supports. The remainder will follow in column of double companies or in line, according to circumstances, the skirmishers being 500 yards in front of the main body and the supports 200 yards. The *Times* observes on this: "None of the advocates of progress in tactics, so far as we are aware wished to abolish the line altogether, and substitute heavy columns of attack for it. What they wished to see abolished was that long stiff, theoretical line of battalions, bound fast to each other, so slow in formation so crippled in advance, borrowed from German Frederick, and long ago cast off as an incumbrance by modern German tacticians. They wished to substitute for it some such formation as the new one promulgated by authority—a number of small bodies each working independently, except in so far as it must not lose the others or fail to support them in emergencies, capable of changing from line to column, or into a mixed formation of skirmishers, line and small columns, acting always 'according to circumstances.' There is not a military nation in Europe which does not use the line when occasion serves, and no nation uses heavier columns than were constantly exposed to fire on Salisbury Plain. The old controversy of line versus heavy columns of attack, was settled long ago, and has really nothing to do with the questions which have so lately agitated the minds of soldiers, and are now settled for the present by the new order. For the present we say, because no man can predict when some new development in weapons or increase in mobility may render further modification of forms necessary. We are far, however, from anticipating such further changes, at any rate for a long time, because the new order of attack is adaptable to many unforeseen circumstances, and officers are not only permitted, but enjoined to think for themselves, and act according to these circumstances."

"The formation for a battalion acting alone as an attacking force will be—half of it in front skirmishing (either one of the half battalions, or half of each half battalion) the remainder being held back as a main body, either in double company columns or in line, according to circumstances. The supports of the skirmishers (two companies) are to be in open file, that is to say, they will not form stiff lines, but flexible ones, the individual soldiers being, therefore, more or less independent. They are to be 200 yards behind the skirmishing line. Doubtless this will come to be 'according to circumstances' too—for no officers would be justified in neglecting the cover of a house or a dip in the ground to give shelter to his men. If we look back to the old English practice, as exemplified by the Light Brigade in the Peninsula, and related by one of the actors themselves, Colonel G. Gawler in his *Essentials of Good Skirmishing* (a book well worth republication), we find it laid down that while no man, standing up in his rank, touching a comrade right and left of him in a line, may be permitted to shrink one inch from shot or shell because in that case he

would derange the formation, exactly the opposite course is proper for skirmishers. He 'who in a skirmish neglects to make the most of every foot of cover, has no right to the title of a wise soldier.' For these and other reasons the place of the supports will doubtless be 'according to circumstances,' the distance being only laid down as a guide. The main body is always to deploy when under fire. Doubtless in war it will often reinforce the skirmishers, for we are entirely sceptical as to the possibility of a line of half battalions in formation making their way where a line of half battalions in skirmishing order has failed.

"A brigade is to send to the front one of its battalions (which of them is to depend on circumstances), four of its companies in skirmishing order and four in support. 'When circumstances of ground render advisable the skirmishers may advance by ranks the front rank 100 yards or so in advance of the rear rank.' Supports, with open files, 200 or 300 in rear of the skirmishers, remaining battalions 'in line of half battalions double columns, at deploying distance 100 or 400 yards in rear of the supports.' If the brigade happen to have four battalions, one of them 'will be placed as a reserve, 400 or 500 yards in rear of the centre, if possible, under cover, and either in battalion or half battalion double columns.'

(To be Continued.)

The German Government is now considering the claims of the various German States to share in the captures made from the French during the late war. Bavaria, Saxony, and Wurtemberg have already been put in possession of the trophies which were won by their armies in the field, but the booty given up at capitulations has not yet been distributed. At Sedan the French destroyed all their military insignia except an eagle, which was afterwards found in a ditch, so that the booty to be divided consists only of guns and the arms and ammunition of the French troops. As the Bavarian army and the Saxon *corps d'armée* took part in this battle, they claim a share in the spoil. The only corps which could put forward a claim to divide the spoil of Metz with Prussia is the Hessian division, which has since been amalgamated with the Prussian Army. The same is the case with the Baden corps which fought at Strasburg. The Mecklenburgers, who were engaged at Toul, might claim the eagle of the Mobiles and the flag of a dragoon regiment which were given up at the capitulation of that town; but they too, have since been incorporated with the Prussian Army. At the capitulation of Paris 1912 guns, but no flags, were given up to the German troops, and a portion of these are claimed by the Bavarians, Saxons, and Wurtembergers.

Several of the St. Petersburg journals are again calling attention to the necessity of establishing a complete system of defence along the western frontier, strengthening their appeal by the *in terrore* argument of the vast preparations set on foot in the same quarters by Prussia. "The Government of Berlin," says a Russian critic, in a recent article on national defences, "has commenced a gigantic reform in its system of fortification—a reform to which we cannot but pay attention, since it is palpably directed against ourselves. Glogau, Thorn, Posen, Churlowitz, are all marked in the list of fortresses to be remodelled upon the newest principles, and transformed into first class arsenals; and to oppose to all this we have palpably nothing."

ON THE BEST DETAIL FORMATION FOR THE NEW INFANTRY TACTICS.

BY J. R. A. MACDONALD,

Brigadier-General Queen's Edinburgh, &c. &c. Brigade.

The Tactical Barometer points so decidedly to change, that all who take an interest in military matters are on the look-out for the coming Infantry Drill Book, and many are the speculations as to what it will be. That the first advance of Infantry to the attack should no longer be made in close formation, even in line, seems now to be universally admitted. But beyond this, all is as yet uncertain. Some maintain that the advance in line, covered by skirmishers, is now an impossibility, others stand up for it still as the true mode of attack by British troops, to whatever extent the preliminary skirmishing may be made more important and protracted by the greater distance to be traversed under fire, in consequence of the long range of modern fire-arms. This latter view seems certainly the more sound of the two; and the keariness with which some have taken up the former is probably attributable to the modern tendency to jostle out of the way everything old in favour of anything new. But as it may be presumed that no one, however revolutionary his own ideas may be on the subject, would propose that the Drill Book of 1873 should contain no instructions for an advance in line, the question whether it must be reduced to the position of an exceptional movement, or is to retain its place as the mode of attack, par excellence, of our army, need not be considered in deciding what the general features of the Infantry Drill of the future are to be. The practical question to be solved at present is, what is the best mode of throwing out skirmishers and supports, and keeping a reserve in hand, for the more protracted fighting in that formation which is now undoubtedly necessary, in whatever way the decisive and final part of the engagement may have to be fought. The real difficulties the compilers of the next "Field Exercise" will have to meet are these:—

1. The determination of the best mode of dividing the battalion into the lines of skirmishing, supports and reserve, in which is included the selection of the best division of the battalion into companies as the units out of which the lines are to be formed.

2. The regulation of the movements of the different lines during the battle, and more especially the adoption of such a mode of throwing out the different lines as shall secure that when reconsolidation takes place by reinforcement, each tactical unit which was divided into skirmishers, supports and reserve, shall be restored as far as possible to its original working formation.

3. The adjustment of commands of the different units, so as to secure two things:—(1) that by the immediate command of those who are with the skirmishing line, that line, as long as no orders come from those in higher command, is kept well in hand, not allowed to go wrong, and duly supported and reinforced as may be necessary; and (2) that orders coming from those in higher command are promptly received and carried out.

4. To find out the mode in which every movement may be done with the least physical wear and tear and loss of time, and the minimum of risk from artillery fire.

It is clear then, that the object of the "Field Exercise" must be substantially

changed. Till now, that book has been a (scarcely) detail of exact movements, following on precise words of command, with here and there a stray hint as to the tactical application of the movements. Till lately, the exactitude was so strict, that in order to make sure that the same form of words should always apply in the exact same manner to the component parts of a body of troops, all transposition of its integral parts was studiously avoided. Whole battalions were countermarched round the centre; in deployments, and formations of line to the front or rear the original order of companies was retained by a most complicated process, in which sometimes the whole battalion was exposed to fire for several minutes without being able to return it, and the young soldier and young officer were harassed by two never absent plagues—Right in front and Left in front—which have now been discarded, their usefulness being demonstrated by the fact that their dismissal from the service, though at the time it caused many an old soldier to shake his head, has in the end given universal satisfaction. Still, even the present "Field Exercise" has much of the old leaven about it. It is still a book of set words and fixed details, containing many unnecessarily complicated movements, and very little tactical instruction. It teaches how to march rather than how to work, how to perform on parade, rather than how to fight on every kind of country. Ground has been sought to suit movements rather than movements devised to suit ground. The system has had more resemblance to the training of a circus horse to go through certain set performances in the ring, than the breaking of a good hunter, spirited and powerful yet well in hand, who has confidence in his rider and will do his best to do anything his master bids him, or will pull up when he feels the curb, and who, if his master does give him his head, will go well, but will not run it against anything. The training has rather to teach how to perform movements mathematically than how to use movements so as to strike with effect. Accordingly in most drills, though the presence of an enemy is vaguely assumed for the purpose of establishing a "Front," (1) the drill is conducted without any regard being paid to a supposed strength of the enemy, either in numbers or position. Moreover the system is characterised neither by simplicity, celerity, nor convenience. There are wanting in it two of the most important elements of Hamley's definition of Manœuvres:—"the quick orderly change of highly trained and flexible masses from one kind of formation to another, or their transference from point to point of a battle field for purposes which become suddenly feasible in the changing course of the action." (2) By "quick" is of course meant as quick as possible consistently with the order, because moments may be precious, both to prevent loss and secure advantages. By "flexible," is of course meant as flexible as possible consistently with "order," for flexibility is essentially conducive to quickness; and it is obvious that if of two opposing forces one is more flexible than the other, it is likely to obtain important advantages in any changes of position that may be required. And that the movements may be quick, and the mass flexible,

*See Maurice's Wellington Prize Essay, where he says, "The principle of the whole drill has been carefully to train all subordinate commanders to know the exact words to give on receiving the command of the drilling officer, and the more to know exactly in what way to move on receiving the executive command." (1.) Field Exercise, p. 105. (2.) Operations of War.

it is essential that the drill be simple and convenient. By this it is not meant merely that it should contain few details, although for that I also plead; but I mean further, that its character should not be stiff and unyielding. There should be nothing in it which requires for its execution an even surface and no obstacles, in order to its being well done; and there should be nothing in it that is circumlocutory, or to use an ecclesiastical term, is a work of supererogation. Companies should not be treated like a number of pieces of stiff board, of a certain length and thickness, with only one side that is capable of being the front, and which alone may be turned towards the enemy, as the flags of a theatrical procession, which are decorated only on one side, are always kept, by the supers who carry them, with that side turned to the audience, in whatever direction they move. There should be no waste of time and energy in teaching men how to wheel "like a gate," a movement totally unsuited to rough or broken ground, which cannot be learned, even on a level parade, without a great expenditure of time and is of no practical value when learned except to "please the ladies." There should be no two ways prescribed for doing the same thing, a difficult way and an easy way—one way for a level parade ground, and another for broken ground. What is just forcing men to learn both, instead of saving them from learning the one that is complicated and not suitable to rough ground, by substituting for it the simple and universally convenient. There is a very significant word of command in many parts of the "Field Exercise" which indicates the "hard and fast" character of our drill; I mean the word "break." The orders "Break into column," "Break off files," the direction when serious obstacles present themselves to a line, that it is broken into fours are most appropriate to the system. Its whole spirit is rigidity, as contrasted with the toughness and elasticity combined. To use an expression derived from the iron-clad vocabulary, it is all plate and no distribution or backing. The same stiffness and hardness of form, which led to the exact squaring of knapsacks by the insertion of a useless wooden frame, and made men move with their arms as jointless as possible and their necks confined in stocks like iron, has till lately pervaded the drill. In the Drill Book of 1833, movements in fours, though allowed, are spoken of in an depreciatory tone as rather to be shunned, and not more than ten years ago I saw a distinguished regiment of British Infantry form line to the rear on the rear company by wheeling the companies an entire third of a circle, rather than to such a hated thing as "break" into the convenient formation of fours. And although within the last few years a considerable change has taken place, the unfortunate thing has been that in many cases changes were introduced, not as simple substitutes for what was difficult and troublesome but merely as permitted additions, which rather aggravated the evil. Thus, instead of the old wheel being retained or abolished, it is still retained absolutely for some movements, "forming" absolutely substituted for it for others, while in some cases it is left to choice whether to "wheel" or to "form." This is a great mistake, for to have two different ways of doing what is, practically the same matter of detail makes it more difficult to do each well. Nothing could tend

*The formation of four deby, though deemed unapplicable to battalion drill, will be of service, may nevertheless, in certain cases be applied." &c.—Field Exercise, 1833, para. 101

more to make men unsteady, at wheeling than to practice them much at forming, and *vice versa*. Again, it is permitted to alter the front of a body of men by the convenient and perfectly efficient mode of simply changing the ranks, but, instead of substituting this quite satisfactory and instantaneous procedure for the older and cumbrous counter-march, this also is retained. These points are referred to merely by way of illustration at present, but will be noticed afterwards in the consideration of the question of simplifying the drill in detail.

[To be Continued.]

CORRESPONDENCE.

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

Victoria, B. C., 27th Jan., 1873.

The *Prince Alfred* sails this afternoon, a batch of B.C. M.P.'s., Messrs. Thompson, Dewdney, and Nelson; also Captain Haughton. If, as is supposed, that gentleman finds it desirable to take the journey to Ottawa to look after his interests in reference to the Deputy Adjutant Generalship, it is certainly rather hard that he should be driven to such an expense in the face of the pledges he is understood to have received; and considerable sympathy is felt with him.

Mr. De Cosmo's Government has signalized its advent to power by several urgently required measures, and some economical reforms. It is to all appearance an honest and an energetic government, and deserves the hearty support of the people of this Province.

The weather has been very wet and very mild till yesterday, which was a balmy sunny day, more like May than January. You can hardly call it winter at all. I understand there are sometimes cold snaps of some severity, but of short duration.

There is no news beyond the daily doings of the Provincial Legislature, nothing military of course, and not even a naval movement to chronicle, so in default of anything of local interest, I send you a letter which I found in the *Army and Navy Gazette* of 30th November from a Line officer, containing some very sound sense about the Prussian company column idea. I really think the two company unit notion is not a bad one, but should anything of the kind come to be adopted there would be no necessity for the retention of the Regimental Adjutant, as the Commander of the unit should be responsible for all its drill and efficiency.

I cannot but think myself that the commanding officer's influence would be better felt through four or five squadrons commanders (so to speak) than at present through the one adjutant, a system which certainly does tend to the company's isolation, but I will leave the "line officer" to speak for himself. G.W.G.

* This will appear in our next issue.

DOMINION OF CANADA.



MILITIA GENERAL ORDERS.

HEAD QUARTERS,

Ottawa, 14th February, 1873.

GENERAL ORDERS (2).

No. 1.

ACTIVE MILITIA.

Provisional Battalion of Infantry on Service in Manitoba.

To be Lieutenant, from 5th December, 1872: Ensign Charles Constantine, *vice* Simard, resigned.

To be Ensign, from 5th December, 1872: Charles de Cazes, Gentleman, *vice* Constantine, promoted.

PROVINCE OF ONTARIO.

"A" Battery, School of Gunnery, Kingston.

The following officer is authorized to join the school of Gunnery, Kingston, on probation for a three months course of instruction.

2nd Lieutenant Charles Edwin Britton, Gananoque Field Battery.

1st Battalion, Governor General's Foot Guards.

To be Ensign, provisionally:

Telmont Aumont, Gentleman, *vice* George Malloch, whose resignation is hereby accepted.

10th Battalion of Infantry or "Royals," Toronto.

To be Captain:

Lieutenant Powell Martin, M. S., *vice* J. Marshall, left limits.

To be Lieutenant:

Ensign William B. Canavan, M. S., *vice* Martin, promoted.

To be Ensigns:

H. J. Hill, Gentleman, M. S., *vice* Canavan, promoted.

J. T. Jones, Gentleman, provisionally, *vice* R. T. Martin, left limits.

16th "Prince Edward" Battalion of Infantry.

No. 5 Company, Milford.

To be Captain:

Lieutenant Alva Vandusen, V. B., *vice* Samuel Gordon, whose resignation is hereby accepted,

32nd "Bruce," Battalion of Infantry.

No. 8 Company, Tecumseh.

To be Ensign, provisionally:

John Oliver, Gentleman, *vice* A. McKee, whose resignation is hereby accepted,

35th Battalion of Infantry, "The Simcoe Foresters."

No. 3 Company, Cookstown.

The resignation of Ensign Walter G. Ayerst, is hereby accepted.

No. 6 Company, Oro.

Lieutenant William C. Wilson, is hereby permitted to retire retaining his rank.

The resignation of Ensign Silas Baskerville is hereby accepted.

36th "Peel" Battalion of Infantry.

No. 2 Company, Orangeville.

To be Ensign, provisionally, from 8th November, 1872.

Sergeant Thomas James Decatur, *vice* Dunbar, promoted.

41st "Brockville" Battalion of Rifles.

No. 5 Company, Carleton Place.

The resignation of Captain David McPherson, is hereby accepted.

No. 44th "Welland" Battalion of Infantry.

No. 4 Company, Fort Erie.

Ensign Joseph Newbigging is hereby permitted to retire retaining rank.

45th "West Durham" Battalion of Infantry.

Erratum in No. 1 of G. O (1) 24th January 1873 read "45th West Durham," instead of "44th West Durham."

PROVINCE OF QUEBEC.

"B" Battery of Artillery and School of Gunnery, Quebec.

MEMO.—A short course of Instruction will commence at the School of Gunnery, Quebec on 1st March, 1873. Officers, non-commissioned Officers and Gunners wishing to join for a three months course of Instruction will forward their applications through the usual channels to the Commandant of the School who will take on as many of each rank as there are vacancies for.

Transport requisitions from Battery Headquarters to the School of Gunnery, Quebec will be furnished by District Staff Officers.

21st Battalion "Richelieu Light Infantry"

No. 5 Company, Laprairie.

The "Laprairie" Company, which although attached to the 21st Battalion as No. 5 Company, for military purposes, being

within the territorial limits of Military District No. 6, is to be considered for administrative purposes, otherwise as an Independent Company belonging to Military District No. 6.

50th Battalion of Infantry or "Huntingdon Borderers."

Honorary Captain and paymaster Joshua Breadnor to have the Honorary rank of Major from 3rd January, 1873.

62nd "Brome" Battalion of Light Infantry. No 1 Company, Abercorn.

The resignation of Captain Asa Erary is hereby accepted.

60th "Missisquoi" Battalion of Infantry. No. 3 Company, Dunham.

To be Ensign, provisionally:
Charles E. C. Brown, Gentleman vice E. N. Brown left limits.
No. 5 Company, Stanbridge.

To be Lieutenants:
Ensign Judson Bockus, V. B., vice M. Beck, left limits.

To be Ensign, provisionally:
Charles Vaughan, Gentleman, vice Bockus promoted.

BAVER.

To be Lieutenant Colonel:
Major Leon P. Voth, V. B., 9th Battalion, from 31st January, 1873.

To be Major:
Captain Theophile Amyrauld, 1st class G. S., Sheffield Field Battery, from 3rd May 1872. This officer's previous service being specially allowed to reckon towards promotion.

CONFIRMATION OF RANK.

Ensign William Foster, 1st Battalion, G.T. R. B., from 15th January 1873.

PROVINCE OF NEW BRUNSWICK

67th Battalion or "The Carleton Light Infantry." No. 8 Company, Brighton.

To be Ensign, provisionally:
Robert Vince, Gentleman, vice Orser resigned.

PROVINCE OF NOVA SCOTIA.

72nd or "2nd Annapolis" Battalion of Infantry.

Lieutenant Colonel Henry E. Dedia is here, by permitted to retire retaining rank,

No. 2.
CERTIFICATES, BOARDS OF EXAMINERS.
The following officers and others have passed their examinations before, and have been granted Certificates by Boards of Examiners:

PROVINCE OF QUEBEC.

At Point St. Charles.
FIRST CLASS.

Captain William Harder, 1st Bat. G.T.R. B.
do Arthur Owen Radford Huddel, 1st Brig.
do Robert Gardner, 6th Battalion.

SECOND CLASS.

2nd Lieut. Terence William Elliott, 1st Brigade, G. T. R. B.
2nd Lieut. Charles Thomas Christie, 1st Brigade, G. T. R. B.
2nd Lieut. Francis William Radford, 1st Brigade, G. T. R. B.
2nd Lieut. Hugh O'Neill, 1st Brigade, G. T. R. B.
2nd Lieut. Randolph Clarke, Engineer Com. G. T. R. B.
Ensign William Foster, 1st Battalion, G.T.R. B.
Sergt. W. B. Boyd, Engineer Com. G. T.R.B.
S. Whittaker, Gentleman, 1st Brigade, G. T. R.B.

By Command of His Excellency
The Governor General,
P. ROBERTSON-ROSS, Colonel.
Adjutant-General of Militia.
Canada.

A somewhat ridiculous blunder was committed on Friday night last week by the Turkish military authorities at the Dardanelles. Just as the French direct steamer was passing the town of Tchanak-Kalch she was suddenly warned to proceed no further by a shot from one of the castles. Wondering at this unexpected show of hostility, the captain sent off a ship's boat to inquire what he had done to offend the Turkish garrison. Matters were however, quickly explained; the French steamer had been taken for the American corvette *Shenandoah*, which was supposed to be forcing her way up to Constantinople. The identity of the French steamer having been discovered, she was allowed to pursue her passage without further molestation.

The *Journal de Débats* published a special telegram from Vienna, which says that the documents mentioned by the Duc de Gramont prove nothing in his favour, being posterior to the declaration of war. It is completely established that Austria did not encourage France to undertake the war, but, on the contrary, did its utmost to dissuade her. When war was declared, the Austrian Government, in the interest of European equilibrium, desired to help France and with that object commenced treating with Italy. The Austrian Cabinet was finally prevented from carrying out this plan; first by the attitude of Russia; secondly by the opposition of the German population of the Empire and a wish expressed by the Parliament in Pesth in favour of neutrality; thirdly, by the unprepared condition of the Austrian army; and, fourthly, by the rapid progress of events not allowing the Austrian Government to act at the proper moment.

A MONSTER STEAMSHIP.

DESCRIPTION OF THE S. S. "EGYPT" OF THE NATIONAL LINE.

One of the most magnificent vessels afloat is the steamer "Egypt" of the National Line between New York and Liverpool. Second only in point of size to the "Great Eastern," she was launched in Liverpool on 9th February, 1871, since which time she has been plying between Europe and America to the satisfaction of all who have sailed in her.

We give the following particulars of her dimensions, construction, &c., from the *New York Nautical Gazette*:-

"She is 440 ft. in length over all, and 435 ft. on the load line; 44 ft. beam, 36 ft. depth of hold, and measures 5,150 tons. She has four masts, on which she spreads an area of canvas amply sufficient to enable her to take care of herself in event of her machinery giving out. She has a compound engine of 500 N.H.P., but capable of being worked up to 2,500 H.P. She has six boilers, set in batteries of three each, and carrying a maximum pressure of 75 lbs. She has accommodations for 100 first class and 1,400 steerage passengers, all under a spar deck, which greatly adds to their comfort in bad weather. The saloon is a perfect gem of comfort and convenience, and while rich and tasty, there are no tawdry embellishments to weary the eye. The steerage accommodations are large, roomy, well ventilated, and, in winter well warmed, so that the emigrant, who pays a moderate price, has his share of comfort, as well as the sloop passenger who pays a high price for luxuries.

"She is a complete four decker. The upper deck is flush spar deck fore and aft, with no obstructions but the cabin entrances and skylights. This and the deck below are strongly planted with steel, and planked with pine. Throughout the vessel the work is of the highest class, for the Company are their own insurers, and, having so much risk they provide against it by having the best possible materials.

"The National Line has been one of the most successful lines in the transatlantic trade, and the company now owns one of the finest of fleets, as will be seen from the list we append:—Egypt, 5,150 tons; Spain, 4,850; Italy, 4,340; France, 4,260; Holland, 3,847; Denmark, 3,724; Canada, 4,500; Greece, 4,500; The Queen, 4,470; England, 4,130; Helycitis, 4,020; Erin, 4,040.

It may be of interest to compare the relative denominations of the Egypt, with Noah's Ark. In so doing it will be seen that while in length and depth there is no great difference, the breadth of beam shows considerable disparity:

	Length	Beam	Depth
Noah's Ark,	450	75	45
S.S. "Egypt,"	440	46	36

REMITTANCES Received on Subscription to THE VOLUNTEER REVIEW up to Saturday, the 15th inst.:-

BROCKVILLE, O.—Capt. W. H. Grayes.....	\$1.00
KINGSTON, Ont.—Major Duff.....	2.00
LYN, Ont.—Ens. Geo Adams.....	4.00
NEW HAMBURG, O.—Ens. Geo. Holwell.....	6.00
NORTH ELY, Q.—Captain Joseph Smith.....	2.00
STRATFORD, O.—Major M. Stephenson.....	4.00
SYDNEY, C.B.—Capt. Chas. W. Hill.....	2.00
(Per Col. Lovelace.)	
BEDFORDVILLE, O.—Lt.-Col. Brown, M.P.....	2.00
CHATHAM, Ont.—Lieut. J. G. Weir.....	4.00
HAMILTON, Ont.—Lt.-Col. P. Carroll.....	2.00
NORTH RIDGE, O.—Capt. W. H. Billings.....	2.00
PRESBURY, Ont.—Capt. Wm. Armstrong.....	2.00
PORT HOPE, Ont.—Lt.-Col. A. Williams.....	2.00
QUEBEC, —Major J. Burstall.....	2.00

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The Volunteer Review,

AND

MILITARY AND NAVAL GAZETTE.

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

OTTAWA, TUESDAY, FEBRUARY 18, 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

The Accounts for Subscriptions to the "Volunteer Review" are now being made out, and will be forwarded by post to each subscriber, and after allowing a reasonable time for settlement, if not paid, the paper will be discontinued and the Accounts placed in Court for collection.

Through the kindness of the author, Lieut. Colonel J. H. A. MACDONALD, of the Queen's Edinburgh R. V. Brigade, we are enabled to present our readers with the first instal-

ment of the very best essay we have yet seen "On the Best Detail Formation for New Infantry Tactics."

The author, with a very commendable modesty, pleads as an excuse for writing on a theme of such importance, that some proposed alterations in drill suggested by him a few years ago were embodied in the present edition of the "Field Exercise," and this notwithstanding the fact that he is not a soldier by profession. Our experience here is that the problems connected with the present "tactical revolution" will not be solved by professional soldiers, because they will be hampered with traditional usages and routine, but by natural born soldiers of Colonel MACDONALD'S stamp, whose thoughts and actions are not directed as to how the propositions would look at Headquarters, or in what light they would be viewed by General so and so, but to the actual effect they would be likely to produce under given conditions; for if we recollect aright, the first person to cast aside Dundas redivivus in the Field Exercise, and substitute therefor a system better adapted to the new weapons, was a Canadian officer, Lieut. Colonel BRUNEL, then commanding the 10th or Queen's Royal Regiment of Volunteer Militia at Toronto; and if there is no mistake in dates, it was precisely at the same time Colonel MACDONALD proposed his innovations.

Our object in reprinting Colonel MACDONALD'S valuable essay is to bring before our military authorities what we deem, with one exception, the best and ablest system of tactics yet proposed, theoretically or practically. The exception taken will be best illustrated by the letter of His Grace the Duke of MANCHESTER to the editor of the Volunteer Service Gazette, as follows:

"SIR.—Colonel Macdonald's pamphlet of "Formation for Infantry Tactics" seems from your notice to be ably argued, and to advocate principles in which I entirely agree. But I venture to differ from him in his suggestion that the front rank of a four deep company should be the first skirmishers. There is no doubt that each tactical unit should be as much as possible under the control of its own commander; but I think the principle should be carried beyond captains and their companies; I would extend it to the sections of a company, each of which should have a subaltern or sergeant permanently told off to command it; inspecting it on parade before joining the company, &c. I would carry out the usual system in skirmishing. When a company is ordered to the front, I think it should send out one of its sections, under the subaltern officer of that section, under the subaltern officer of that section, to skirmish; the other sections forming successive supports under their respective subalterns or sergeants. The captain would superintend the movements of his whole company, and he must no doubt be on foot under fire; though, if there were only one field officer per battalion, it might be advisable for him to be mounted when on the line of march, and before coming into close contact with the enemy. According to the plan I have suggested, each party of skirmishers, besides being under the control of the captain, would have with them their

own subaltern. This is very necessary to prevent their wasting their ammunition by useless firing, to move them forward when they have to advance, to regulate their advance, and halt them when they arrive at a suitable position. By this plan, as in Colonel Macdonald's, the skirmishers would be reinforced by men of their own company, and, if the ground is favourable and the enemy's line wavers, the whole company is at hand to rush forward in as solid a line as is considered advisable to storm the position, but if no such opportunity offers, it is because the fire of the enemy is too heavy, and the ground too much exposed to it. In that case, I think no line could advance against breech loaders. Then you must try and get at the flank of your enemy. If the position occupied by the companies skirmishing with their skirmishers and successive supports is a strong one, you might use the remaining companies of the battalion to prolong the line of skirmishers towards the flank for which you are feeling, or you could send another battalion to prolong the line, disposed in the same manner as the first. I would suggest, as a normal formation, that four companies should skirmish, each furnishing its own skirmishers with successive supports, and the other four companies should be in reserve, as near or as far as may be considered advisable.

I shall read Colonel Macdonald's pamphlet with great interest.

Your obedient servant,

MANCHESTER.

Kimbolton Castle, Jan. 5, 1873.

While thoroughly agreeing with his GRACE in the advisability of having a more extensive line in front skirmishing than that could be furnished by a company extended four deep, there is, however, this much to be said in its favor, that it will bring a greater weight of fire on a given point than could be brought by a line two deep; and as the proposition is to extend the files to arms length, in other words "as a squad formed with intervals, the front actually covered would be little less than that in close formation two deep.

The question, however, is one of mere detail, and can only be solved practically; at the same time it is an highly useful formation, and under the varying conditions of attack which the topography of the fields of action will present, it will doubtless be a highly effective manœuvre, and even in the hypothetical case put by the Duke of MANCHESTER it is quite possible to suppose that it would be as equally impracticable to turn a flank as to assail in front, and, therefore, the formation might be the very one required to dislodge the enemy.

While entertaining a great dislike to have a company broken up into a series of units we quite agree with the Duke of MANCHESTER in the idea that the supervision of a subaltern or steady non-commissioned officer is a necessity for each section in action, and for the simple reason that without such supervision the tendency will be on the part of the best drilled soldiers to fire away their ammunition at long range and needlessly. Other details, such as the forward movements, seeking shelter, &c., demand administrative authority, which can be supplied without increasing the officers.

Our Volunteer regiments have a captain, lieutenant and ensign to each company of 55 men, taking out supernumeraries, this would give about 48 rank and file in line, four sections of twelve men each, commanded by subalterns and the two senior sergeants, would be the fighting disposition; while the command of the whole would remain in the hands of the captain.

Supposing the whole to be effective the remaining five men would be engaged in supplying ammunition, in charge of the provision carts or carrying orders. Colonel MACDONALD has pointed out how advisable it would be to have the ammunition placed on pack horses during an action, as it thus could be brought nearer to the front than by any other means, with the system of regimental transport we shall be compelled to adopt, this can be effected by one of the spare horses belonging to the company; and we are pretty well satisfied that the gallant Colonel has solved the most difficult portion of the problem involved in the new tactical formations for Infantry.

In our last issue we published the text of a pamphlet by Colonel GAWLER on the same subject; and he, an officer formed in the school of WELLINGTON, coincides in all the main features of his system with those principles laid down by Colonel MACDONALD, clearly showing that the mere profession has had nothing to do with the natural talent and inherent abilities of the volunteer soldier in the one case, or the matured judgment of the Regular soldier in the other.

Both these gallant officers deserve the thanks of the Empire for setting the question of the tactical superiority of Prussia at rest, for both conclusively show that the position of that power might be defined as being as totally destitute of tactics as its opponent was of discipline. The proposition of mounting captains on horseback is also summarily disposed of.

We have to thank Colonel MACDONALD for his attention in sending us his very able and satisfactory essay, and we hope to see its main provisions a portion of our tactical system.

The following extract from an English exchange is suggestive of the means whereby Russian power and influence, are so rapidly overspreading Central Asia. No Empire of modern days possesses the same power for rapid conquest, or the energy to use it. In this respect it is only inferior to the Tartar Empire of Tamerlane, or Chinghis Khan of her Middle Ages.

What really constitutes the power of the irregular troops is the facility with which they can make war without the appliances of modern armies, and levy supplies for subsistence in the country they overrun. Beyond ammunition, the transport is comprised in what they carry with ease on their horses backs, and as they never change their clothing till they are worn out, their march-

ing order is of the lightest possible description.

Russia made a great mistake when she attempted to bring these irregular troops into subjection to the tactical discipline of her regular army, and there can be little doubt but that error will be remedied. Meantime, it is a lesson to other people that the tactical discipline of each nation must be in accord with the habits of its people, and not based on the mere imitation of supposed or accidental excellencies of others.

"A pamphlet on the Russian cavalry, which was recently published at Tashkend by General Pistorikors, has been received with much favor by the leading papers of Moscow and St. Petersburg, which strongly urge the Government to adopt the general's recommendation. The German Army, he says, now has the reputation of being the best in Europe, and if Russia wishes to retain her old position on the continent, she must make her military force at least equal to that of Germany. Unfortunately, many years must elapse before the Russian infantry can be raised to the German standard; but this need not be the case as regards the Russian cavalry. The regular troops, it is true, have all the defects of the cavalry of other countries, besides several peculiar to themselves, the latter chiefly caused by the importation of regulations from Western Europe which are not suited to the Russian soldier. Moreover, in these days of immense agglomerations of infantry, a force of 50,000 not very efficient cavalry soldiers, which it would cost a very large sum to increase, is almost useless. It is in her irregular troops which, if properly employed, would be the best and most numerous in the world, that the real source of Russia's military strength is to be found. During the last ten or twenty years the Cossacks have been systematically neglected, yet if they were thoroughly reorganised they would make the finest cavalry in Europe, and entirely supply the place of the costly and inefficient regular troops. The first thing to be done (proceeds the writer) is at once to abolish the utterly inapplicable system of European drill, which is quite opposed to the traditions and character of the Cossacks. They have for centuries been a nation of riders and warriors; every man in their military colonies has always been a soldier as well as a peasant. They should be permitted to ride with their traditional short stirrup, and to resume their old weapons, which a foolish mania for uniformity has abolished. The old custom by which the State paid every Cossack for the horse he brought with him into the field should also be revived; under the present system they are badly mounted, because they leave their best horses at home. The experience of the American war has shown that the most useful cavalry are dragoons armed with revolvers, i. e. horsemen who can fight on foot. It would not be difficult to train Cossacks for such service, as they are accustomed to the use of fire-arms from their childhood. At present there are from 260,000 to 280,000 Cossacks in the Russian army; if the regular cavalry were abolished, and the sums appropriated for its maintenance were expended in the organization of a Cossack force, the above numbers would be increased to half a million, including the Kalmucks and Bashkirs, who now serve as regular troops. "No European state," concludes the writer, "could compete with Russia in producing so numerous, effective, and inex-

pensive a force, for none of them have such an abundance of excellent material for the purpose. Russia might then recover her military predominance in Europe, and force Germany to withdraw into her natural limits." The Russian Ministry, whose policy it is just now to be on good terms with Germany, is of course not likely to endorse all the opinions expressed in this pamphlet, but there is good reason to believe that they are shared by many Russians of all classes, and it is doubtful whether even so absolute a ruler as the Czar will long be able to resist a feeling of national jealousy which is so persistently and generally manifesting itself." - *Pall Mall Gazette*.

Future historians will find in the events of the year 1870 matter for speculation and analysis never before furnished by the records of a single year since history itself became a science. The fall of the French Empire, and the rise of the German on its ruins, is sufficient matter for laborious research as to the cause of such unparalleled disasters and sudden depression of a great as well as powerful nation, till that period undoubtedly the first military power in Europe.

The ex Emperor, Louis NAPOLEON, was undoubtedly a great man—as a Statesman and ruler, far in advance of his uncle, who could only claim to be the greatest military genius of his age and country, and we believe history will deal fairly with his administration and pronounce a true judgment on his merits, as well as clear his memory of the blame of those great disasters which has overwhelmed the country for whose prosperity he had done so much. An exchange has the following on the completeness of his overthrow.

"The suddenness and completeness of the late Emperor's overthrow is explained by a few details of the Franco-German conflict. War was formally declared between the two powers on July 15, 1870, and terminated on Feb. 16, 1871, lasting 310 days, but practically 180 days, in consequence of the first and last periods being free from engagements. In one week the German troops were mobilized, or prepared to march, and in two weeks were despatched to the west, and were arranged on the line from Treves to Landau. The troops sent to the front numbered 600,000; and 45,000 men, with horses, guns, carriages, and ammunition, had to be conveyed every day on five lines of railway, two of which, however, were little used. Four Prussian *corps d'armee* had to traverse from 400 to 600 miles to reach the French frontier, and had to be fed on the way. During the 180 days of active service, there were fought 156 engagements, 17 great battles; 26 fortresses were taken; 11,659 officers and 463,000 men of the rank and file were made prisoners, and 6,700 guns and 120 eagles were captured. The late Emperor surrendered at Sedan on Sept. 4.—49 days after the declarations of war, and only thirty-two days after actual hostilities began.

As we have never been so deeply impressed with the superior excellence of Prussian strategy or tactics as most of our contemporaries, we are not surprised that

they are beginning to find out the only quality in which they did excel, and of which the French, unhappily for themselves, were deficient, was the single one of discipline. In every case when beaten, the French were outnumbered. The following extract will set this in a proper light, it is from a Prussian journal.

"An article in the last number of the *Militair-Wochenblatt* on the three great battles—Koniggratz, Gravelotte, and Sedan—contains some interesting details regarding the relative positions and tactics of the armies engaged. Gravelotte was purely an infantry and artillery fight. At Koniggratz, on the contrary, the cavalry of both armies engaged in frequent smaller or larger conflicts, especially towards the end of the battle. At Sedan, again, the French cavalry only attacked *en masse*, and were invariably driven back by the German infantry. The handling of the artillery showed a great advance at Gravelotte and Sedan compared with Koniggratz. While in the artillery combats on the centre of the 3rd of July, 1866, there is no trace of any uniform plan on the part of the general in command, at Gravelotte and Sedan the artillery was splendidly handled. After none of the three battles was there any protracted pursuit. The numbers engaged at Koniggratz were much larger than at either of the other 2 battles. The Prussians mustered 215,000 men, as against 220,000 Austrians and Saxons; whereas at Gravelotte there were only 120,000 French against 200,000 Germans, and at Sedan 130,000 French against 200,000 Germans also. Koniggratz was in point of numbers the greatest battle of the century, as there was 30,000 more men present than at Leipzig. The losses in killed and wounded at Koniggratz were 30,000 Austrians and Saxons, as compared with 10,000 Prussians, or a total of 40,000 men. At Gravelotte there were 14,000 French and 20,000 Germans killed and wounded, or 34,000 men in all; while at Sedan the total loss was 24,000 namely, 12,000 French and 10,000 Germans. Thus Koniggratz shows the largest number of killed and wounded—much larger than we find in the greatest engagements of the war of 1870-71."

Two great mechanical and scientific authorities and one seaman have given their opinions to the world on the present position of the science of naval construction. Sir W. Armstrong recommended that the amount of armor used in future on ships of war should be just sufficient to break up a common shell with a large bursting charge. For this purpose a plate an inch in thickness will be all that is required and when the shell is thus broken, "the charge explodes without violence like gunpowder."

Mr. REED is of opinion that the time will arrive when guns will play a very secondary part in naval warfare, and that ramming will be the agency resorted to for the purpose of settling the question of tactics in a naval action. Armor should, therefore, be increased, not for the purpose of resisting shot but for strength to resist the shock of two large bodies coming together with resistless force. Admiral ELLIOTT is in favor of what is known as the deflecting principle, it dispenses with side armor, has heavily

armored fixed turrets low free board and a bulkhead armored in bow and stern to prevent raking; his deck is also heavily plated a low free board (not exceeding six feet), the sides, tumbling home rapidly from the water line and for six feet below it built on the cellular system, so that she might be riddled at the water-line without sinking.

It is evident from the above that guns have completely overcome the resistance offered by armor, that it will be no longer possible to protect vessels from solid shot, but it is evident that the most dangerous projectile will be shells with large bursting charges and a very light armor will break them up.

In all the cases argued out it is assumed that in action a vessel would keep on a level keel that she would neither pitch or roll, and that consequently every shot that would strike her would do so at right angles or nearly so to the plane of her topsides. The theories or rather practical experiences on which all these views of the penetrative power of shot has been founded, were acquired on the level sands at Shoeburyness, the gun was fired from a solid and stable platform, and the target representing a section of the vessel's side was also solidly seated as well as stationary. For any value or knowledge that this course of practice would give respecting the relative action and power of guns on armor at sea, the experiments might as well be carried on by pelting the targets with roasted apples.

Without firing a shot it could be demonstrated that; given a certain thickness of iron, a projectile and force could be got to penetrate it at given distances, the simple problem to be worked out was the velocity of the shot, its weight being known, the effect produced could be predicated as certainly before as after the explosion and impact. Next comes the experiments with the *Glutton* and *Hotspur*, it was simply the experiments of Shoeburyness transferred to a millpond, neither vessel had any motion and at 200 yards the decision was by no means favorable to the guns. With all due deference to the great authorities who have written on this subject there seems to us to be yet wanting experimental knowledge of what would occur in an action at sea, and the question has yet to be answered in what position a shot will strike an ironclad at right angles to the plane of her sides.

We are told that in an ordinary gale one of those large ironclads will roll from 16 to 18 degrees, alternately exposing her deck and plane sheer considerably below the water line; her opponent will not be steady, and except she is exactly alike in every particular, she will not roll in the same time or the same manner. The whole science of naval gunnery as it used to be, when English fleets won victories unequalled in ancient or modern history, was comprised in the single

quality of *knoping when to fire*, so as to secure a reasonable chance of hitting the opponent at all. Moreover actions were fought at not more than two cables length, (40 yards) and frequently within one. What is sufficiently evident, however, is the fact that if the shot strikes at an angle less than a right angle, it will be deflected, and therefore apart from the shell question, a certain amount of armor would be an advantage.

What is to be dreaded in future is the chance by which the deck of a vessel can be penetrated, and Admiral ELLIOTT seems to be alive to this contingency as in his proposed system that portion is to be more heavily armoured—indeed made practically impregnable—and there can be very little doubt but the gallant seaman is perfectly right.

Another nuisance to be got rid of is the turret. Under a heavily armored deck, guns could be fought as efficiently as in a turret, and the deck load which makes all vessels built on this system, dangerous, could be got rid of. The weight of evidence seems to be in favor of retaining a certain amount of armor as protection to men, guns and machinery, and reducing the size of the vessel.

A project has been broached for building a vessel equal in capacity to carrying armor three feet in thickness. She would be some 343 feet in length, with 40 feet above water deck, and 60 feet at the water line. Her topsides, tumbling home rapidly, and her free board would be at least thirteen feet above water. The objections would be to her great length, which would make her difficult to manœuvre, and if anything happened her steering gear, she would be totally unmanageable; in addition to which her roll would expose her plane sheer and deck just as much as an ordinary vessel.

What is to be feared appears to be lost sight of amidst all the theoretical nostrums laid down for to meet present exigencies and that is the qualities of *speed and handiness* so essentially necessary in a vessel of war will be sacrificed to theoretical considerations.

Swift wooden ships with an outer iron shell just sufficient to break up a shell, will be not only useful but essentially necessary as cruisers, while floating batteries will be likely to be the type of the line of battle ship for some time to come.

Our neighbors over the lines appear to be realizing the inconvenience of their success in imposing their unjust demands on Great Britain. The *Alabama* claims seem to be as difficult to settle in the United States, as outside that country. The following is from an exchange and is not a bad idea of the situation.

"The United States Government is in a sad dilemma. It doesn't know what to do with that fifteen millions awarded at Geneva

Congress had come to its relief and is trying to legislate it into some channel of relief. If the Congressmen could only get their own fingers upon the money a solution of the problem would be at once made. As it is, their ablest financier can only make something approaching an equitable claim to eight million dollars, by including losses and probable losses.

If the eight millions be thus disposed of what will be done with the remaining seven? It is proposed to recognize claims for benefits upon speculations never entered upon, but which might have been if there had been no *Alabama*. In this way they may dispose of the surplus; but the Geneva Arbitrators would have done the United States a favor, if they had not obliged the British Government to pay them more money than they know what to do with."

The following extract from the *Broad Arrow* of January 25th, is a fair specimen of how history is, and has been written. It is not yet twenty-five years since the event to which we suppose it refers, occurs, and we find no less a personage than the Assistant Quarter Master General of the British Army credited with the arrest of the late SIR RICHARD O'BRIEN on the Railway platform at Thurles in 1848.

It was well known at the time and it was proved on the subsequent trial that a Railway Guard (in Canada a conductor) of the Great Southern and Western Railway named HULMS arrested Mr. O'BRIEN, and received £500 sterling, the reward offered for his capture by the British Government. For the same, Colonel KENNETH DOUGLAS MCKENZIE might be then an ensign quartered at Thurles with a detachment of his regiment, and had about as much to do with it as with the discovery of the North Pole; but it is a curious illustration of how history has been travestied to serve personal adulation, or for even worse purposes. What the object of the learned "Flat, &c., Ruat Cœlum" in assigning to an unknown individual when the event occurred, a prominent position in an historical episode, now almost forgotten, is hard to say, but it is too bad to rob the Railway Guard of the honor, as it cannot add much to the Assistant Quarter Master General's laurels.

"The following letter relating to a memorable episode in the military career of the present Assistant Quartermaster-General at the Horse Guards, has been addressed to our contemporary the *Globe* (under the signature of "Flat &c., Ruat Cœlum."):—"Oister" will be glad to hear that though "Ireland revisited" contains a "sneer" at the monument of Smith O'Brien, individuals are sometimes seen doffing their hats as they pass. The like honor was probably paid to the effigies of Roman heroes whose stars had recently risen amongst the constellations. Justice ought to be overtaken. There is room for another monument opposite to that which is "sneered" at. Poor Smith O'Brien was doubtless grateful to the officer who terminated the cabbage garden campaign by taking its hero prisoner on the railway platform at Thurles, for it exiled him from a painful and embarrassing

position. Let Ireland be grateful too, and erect a peaceful drinking fountain near Carlisle Bridge in honour of Colonel Kenneth Douglas McKenzie."

On Thursday last, the fine and imposing battalion of the Governor General's Guards, under the command of Lieut.-Colonel T. Ross, marched through the principal streets of the city, preceded by their admirable band; the various companies mustered strongly, and altogether, presented the best military display this city has witnessed for some time.

This battalion is composed of the late Civil Service Corps, and of young men from the different classes in the city, the officers being in about equal proportions. At present there are only six companies, but there would be no difficulty in raising its strength to ten companies; and, as a movement has been made in Montreal to change one of the battalions in that city into guards, we hope to see Colonel Ross's battalion numbered as the 1st Royal Canadian Guards, which ought to be their proper title.

The city has been indebted to the liberality and enterprise of the gallant colonel and officers for the best military band in Canada, whose services have been given with un-checked liberality on every public occasion. Although we cannot boast of reciprocity on the part of that same public, seeing that the band is supported at the expense of the officers altogether, and they have given the best (as well as the only series for this year) of Assemblies, and Promenade Concerts, this city has yet seen. As might be expected, the Guards are tolerably well drilled, and in the hands of Colonel Ross and Major WHITE will speedily take precedence in that as well as every other soldierly qualification.

Ottawa can now boast of having the best Field Battery of Artillery, the best Brigade of Garrison Artillery, and the best battalion of infantry—the Guards—in Canada, the whole force numbering close on 800 non-commissioned officers and men—a very fair proportion of soldiers in those piping times of peace, to the population, considering the said soldiers serve at their own expense. The city has good reason to be proud of its military force, and especially of the Governor General's Guards.

REVIEWS.

The *Canadian Illustrated News* for 8th February contains a portrait and *fac simile* of the autograph of Her Excellency the Countess of Dufferin, a double page illustration of the Montreal citizens' ball, a sketch of the fancy dress skating entertainment held in honor of their Excellencies; the wreck of the *Germany* on the French coast, an illustration of Professor Pepper's curious optical illusion of the

Ghost with a paper explaining the means whereby it is produced, and other well got up illustrations; a column of Notes and Queries have been added, as well as a ladies' department.

We have to acknowledge the receipt of the first number of the *American Protestant*, a monthly Journal of choice literature compiled from the best magazines and authors. It is published by S. M. Kennedy, editor, at No. 26, North Seventh Street, Philadelphia, United States. The subscription being \$1.75 per annum; the present number is for the month of March.

The *New Dominion Monthly* for February, 1872, has a portrait of the late Emperor Louis Napoleon, a spirited historical sketch by J. B. Lamoiné of *la guerre des Bostonnais* under the heading of "Trifles from my Portfolio," a notice of "Letters from High Latitudes," and some good poetry. The *New Dominion Monthly* keeps up the reputation with which it started.

Notwithstanding the favourable construction put upon the Alsatio Lothoringian conscription by the official *Provincial Correspondent*, independent Prussian journals prove the result to have been by no means satisfactory. Instead of 5324 men as was desired, only 3039 men have been actually brought under the conscription from a contingent of qualified persons amounting to 7454. The 3039 are obviously not exclusively conscripts of the usual order, but reinforced by reserves of the first and second class; for as in the ordinary course of conscription only 250 men are taken to the colours out of 1000 able-bodied persons, if the same proportion had been observed only 2000 ought to have been selected out of the 7454. Even the ratio of 7454 is, however, low, for a population of 1,597,219—especially of the strong and healthy build of Alsatio Lothoringians—ought to yield at least 18,000 or 22,000 able-bodied youths liable to the conscription after the German average. Two-thirds of the ordinary number are thus shown to have escaped their military obligation. Such men as have been taken are described as strong and well built, and a large proportion have been drafted into the Guards.

The Marquis of Lorne, in a speech delivered at Glasgow on the evening of the 7th expressed regret at the emigration of Scotch men from their native country, which is capable of supporting an immense population and where labourers are scarce. If, however he said, people were determined to emigrate he hoped they would stick to the old flag and go to one of the British colonies. No doubt the advice given to the Scotch people by a son-in-law of Her Majesty the Queen will have the effect of materially increasing the stream of emigration to the colonies, and a splendid opportunity is now afforded the Dominion agents in Scotland to secure a larger share of the emigrants who leave North Britain than has hitherto been directed to Canadian shores.

IS IT WORTH THE PRICE?

More men in search of the icy pole,
The tropic staff around which we roll,
More treasure, ships, and lives may be,
All sacrificed to the Polar Sea,

What if they find both the Pole and Sea?
What better than shall earth's children be?
Who wants a home that needs must share
With a friendly seal or a polar bear?

Silence and glaciers, snows and fogs,
Train out and darkness, and wolfish dogs,
And though Aurora may gild the night,
One need'st must freeze while they see the sight.

No ship on the errand of commerce bent,
Would cross by the new found continent,
No church would rival the iceberg's spire,
No chimney shelter a household fire.

"Science" I know As the old wife wails,
Going backward down to the Blessed Gates,
Looking earthward yet for some token set
As the brave Sir John whom she can't forget.

Think you, all the charts that explorers gave
Can hide from her that unsodded grave?
Think you the wives of the missing men
Can say God speed the search again?

There shall be new tales of beleagu'ed ships,
Amid toppling bergs and the ice-blue "rips,"
Of men homesick for the meadow soil,
And the sound of bells in the house of God.

Snow-blind and faint with the ceaseless stare
They shall stumble on through the summer's glare;
Wearied and worn for the vanished light,
They shall fight the gloom of the Arctic night.

Is there life to aid, or a soul to save,
E'en a calm to lay on a brave man's grave,
Is there wrong to right, or a heart to bless,
Shall the search go on? Yes, in God's name
Yes.

But this, to outline on a chart anew,
Where a good ship carried her colors through,
To claim fresh fields of the sterile ice
At such fearful cost—It is worth the price!

THE BRITISH LINE IN ATTACK, PAST AND FUTURE.

(Continued from Page 72)

CONDITIONS OF THE ATTACK CONSIDERED.

Conditions of the Attack.—To advance is of course a condition inseparable from the attack. The first object of the attack is to gain ground. To destroy the enemy, if he resists, is only the second.

A rapid advance shortens the affair, and tends by the varying distance, if not by moral effect, to spoil the enemy's aim, and for both these reasons diminishes the losses of the assailant. Nevertheless, a simple advance without protection, even across a comparatively short space, is, in the face of modern fire, hazardous.

Modern Improvements favor the Defence.—The improvements in modern fire-arms are mainly:—

1. Range increased from 200 to 300 yards with greater precision.
2. Loading can be effected without exposure.
3. Rapidity of fire increased three fold.

In the days of smooth bores, the assailant except for the fire of artillery, might approach with comparative impunity to within 200 yards of an enemy's position. By the method of loading the defenders were obliged to expose themselves. They might be kneeling, but as the distance remaining to be surmounted by the assailant before he was within charging distance was very trifling; this position did not materially alter cases, but they were more generally standing, and therefore the terms were more even. Under these circumstances the defender had no time to fire many rounds, and the affair,

begun late was soon settled in one way or another.

But the affair is now begun at 900 yards (if the defenders have been able or have had the sense to choose proper ground), and the assailant must move all that distance under fire; while the new system of loading allows the defenders to carry on their fire even in the open, with a mere nominal exposure.

The effects of the third improvement are not so apparent. The hits are not in proportion to the larger number of rounds fired, because there is three times as much smoke, and three times as much noise, and consequently more excitement. The terrible effects of rapid fire must be exhibited principally, under strict supervision, at short ranges say 200 yards and under, at distinct objects, when men cannot well miss.

Aimed and Unaimed fire.—The fire of the defenders tells upon the assailant in "aimed" and "unaimed" fire. Against the "aimed fire" troops find protection, observes Major Tellenbach, "by taking advantage of ground," lessening the size of the mark, loose touch, slight depth, and motion; from fire not aimed or badly aimed at them, chiefly by avoiding the shot sphere as far as possible, or if they are obliged to delay in it, by seeking out the places where the shot fall least thickly.

Under "aimed fire" the chances that any number of men run of being hit may be generally stated to be in proportions to the intensity of the fire and its rapidity.

The intensity of fire from a given number of men may be called medium when it is direct (or when their lines of fire are parallel) less when it is divergent, and is greater when it is convergent.

It has been found that the common inclination is to fire at the centre of an object where it is therefore more intense, and hence it is better to bring up supports in rear of the flanks of such object.

Herein lies the pith of the reason why loose order is a protection against aimed fire. Because the more open order invites the more direct or even divergent—i.e., less intense fire; the closer order—i.e., as the men form an object, invites the convergent or more intense fire. Thus if 100 men in line are firing at 25 advancing towards them the fire will be convergent or intense if the 25 are formed in a body; but if the latter extend themselves, say four paces, they will occupy a front rather wider than their enemy; they then offer no special attraction, and therefore invite a direct or less intense fire.

One great safeguard, therefore for those exposed to aimed fire is to equal the enemy's front.

It has also been observed (Major Tellenbach, p. 19) that "the bottoms of defiles are as a rule heavily swept by fire; the sides or slopes much less heavily." This is probably owing less to any inclination of men to prefer firing into a hollow to firing straight to their front, than that because the lines of defence across the head of the hollow or defile would be re-entering, producing therefore a convergent fire at the bottom.

The common fault in firing is that it is too high.

As regards the "unaimed shot sphere," it is the space within which these bullets fall which have missed their mark, or which have been more or less blindly delivered. The breech loader offers great facilities for making plenty of smoke and noise, which men dearly love in proportion as they lack nerve and discipline, and it is found that there are created in various parts of the field bullet-storms of various dimensions through which

it is dangerous to pass. The French "Moulin a Café" was just the system to make these storms dreadful if encountered, while actual contact with a foe so educated would be comparatively insignificant.

It should also be noted that at the long ranges the unaimed shot sphere will probably be very close in rear of the mark, while at the short ranges, if the defenders are lying down, it will mostly be at a very considerable distance in rear.

If a whole front were evenly engaged, the unaimed shot sphere would probably be a continuous strip in rear of the assailants, if there are several attacks it also will be in patches.

It is important to observe that in passing through the "unaimed shot sphere," speed alone can diminish the risk of loss. Avoid it or cross the least intense portion of it, if such be possible, but formation can effect the question in no way whatever, except as it may effect the speed. Bullets are flying at a given rate within certain limits, and if all must pass through those limits, the individual chances are not affected by being in company. It would be otherwise reasonable to assert that a body of men marched through a shower of rain in skirmishing order would be reached by fewer drops—i.e. would get less wet—than if they passed through at the same place in column, or that you would get less wet—walking alone in the rain than you would do in company with a friend!

MEANS OF NEUTRALIZING THE ADVANTAGES OF THE DEFENCE.—Improvements in fire-arms having multiplied for the defenders' advantages which remain largely in their favour until the assailant can reach that point when for the first time he will be on even terms, i.e., when they must rise to repel him; it is for the latter to consider what means there are of neutralizing those advantages.

The advantages in favor of the defence may be neutralized, directly or indirectly, more or less, by some of the following means.

1. Ball-proof cover, as walls, ditches, undulating or broken ground.
2. Concealment by fog or darkness.
3. Mere concealing cover, hedges, &c., with neither ditches nor banks) and under wood.
4. Keeping the enemy otherwise occupied.
5. Formation.
6. Attitude.
7. Speed.

Of these as regards:—

1. If the defenders are wise none will be available.
2. Fog not always present, and together with darkness not generally suitable.
3. Of use only while the enemy is unawared of its being occupied, otherwise dangerous. 4, 5, 6, and 7 are the only means constantly available, and in the power of the assailant and are therefore principally to be considered.

KEEPING THE ENEMY OCCUPIED.—The first important means of protection for the assailant is to oppose fire by fire; just as in storming a breach the protecting fire of a covering party is necessary while the stormers are crossing the ditch and mounting the ladders. Firing has a double application—viz. to destroy, and to deaden his fire. Wild unnecessary firing cannot be too strongly condemned—while doing the enemy little harm, it tends to embolden him.

To attain a superiority of fire at the point of attack is one great problem for the assailant.

Aiming.—Men who aim well, whether from habit only or from natural coolness, will

soon quell the fire, even of superior numbers of those who have no such qualities. The fire of the latter (if they do not run away) will probably become more rapid, but the muzzle of their rifles will rise as their heads sink gradually behind their cover, and the bullets will fly harmlessly over those for whom they were intended.

Firing obliquely with the Line.—Every one acquainted with the use of fire arms knows that fire is delivered to the left front of the individual; in fact, that to fire to this front a man makes a right half turn or brings up his left shoulder. The front rank of a closed body can fire to its left front as easily, as rapidly, as correctly as to its front, and the fire thus delivered is, in proportion to the acuteness of the angle, more intense than direct fire. This is worth remembering, both on account of the important aid which, without disturbing the front, can be rendered by one body of men to another on its left which is either attacking or receiving an attack as well as that, when there is the choice, it is always better to attack the right front or flank of your enemy than the left.

Oblique Fire against the Enemy.—On the same principle as with artillery fire, firing obliquely, when it can be adopted against an enemy, will be much more effective than direct fire, particularly against troops in loose order. If a handful of stones be thrown at a line of open railings, where, according to the space between the railings (the size of the stones being the same in each case), only one in four perhaps, or less, would hit when the throwing was direct all would hit if thrown at an angle of 30 deg. with the line (supposing it to be of sufficient length).

FORMATIONS.—Reverting to the remarks at p. 16 on 'aimed fire, it may be observed that it would be a difficult thing to inveigle an enemy into delivering a divergent fire, but it would be very easy to draw from him a convergent one. The best course, therefore, for the troops immediately engaged with him is to strive for a general average, or "medium," by offering no inducement for a convergent fire; preserving a formation so uniform that no part of it shall attract his eye more than another. Skirmishers therefore should be drilled as heretofore into maintaining this even line to avoid getting into knots and clumps, which inevitable attract a convergent fire. Cover, that is in their road, should be made the best of; but, as it (as well as fire) is only to be employed as it may aid towards attaining the main object gaining ground, any resort to it which would break the line or check the advance must be avoided. This is generally the commencement of getting into knots; it is very easy to get into these clumps, and very difficult to get out of them. And if the enemy cannot hit these groups while under cover, he can at least watch for them as they break.

The most efficient skirmishing line, therefore, is that which allows every individual composing it to combine ease and rapidity of movement with the best use of his weapon. It should never be so thick as to risk more men than can find honest employment, nor so thin as to draw the enemy's attention to individuals; single rank, therefore, and the extension, whatever it may be, well maintained; or the formation least resembling a swarm.

Of the formations of those who back up the Skirmishers.—*Supports in single rank.*—As being nearest the skirmishers, support should move in single rank. Extended over the large front, they would be as well or better able to reinforce the skirmishers, and

if they happened to come under the aimed fire of the enemy, the more extended front would be preferable. The rear rank might be used either to extend the front echeloned in rear of one or both flanks.

Line two deep.—Line two deep is suitable to the greater fire power, deliberation, determination, and order required of the body prepared to take the enemy in hand at the "critical" point. Until then it should not come under the aimed fire of the enemy's infantry.

Four deep.—A third formation is four deep which, with two front ranks kneeling, represents the greatest intensity of infantry fire. It is suitable principally for defensive purposes and for second lines. The four deep formation was used on a memorable occasion in our military history, viz., by the late Duke of Wellington to meet the last great efforts of the French at Waterloo.

"The Duke had perceived the concentration of heavy columns to the right of La Belle Alliance, and to oppose a more solid resistance to the evidently approaching attack, had ordered all the infantry corps between the two great roads to be formed from two deep into four deep lines." (*Crises of Waterloo*, p. 13.) With what result is known.

One regiment had the left wing doubled in rear of the right; another formed the four deep line by wheeling up from half column by half companies to the left. The double line of companies would probably be the better formation, six paces being preserved between the lines. If the whole fire were required, the rear companies would close up and the front companies would kneel, their supernumerary ranks turning outwards and moving to the rear as in a four deep square. The advantages of this formation compared with the two deep line are:—

1. Greater mobility, with the whole fire available if required.
 2. Fire more concentrated. The same amount being available in half the space.
 3. Readiness to thwart a flank attack without diminishing the front by wheeling up a rear company.
 4. Formed in half the time from column. Compared with the Jomini column the advantages are:—
1. An extent of front (for British regiment) equally manageable. The front of the columns used by the French in Italy (100 men), it would only exceed by one half, battalions 600 strong.
 2. No fire sacrificed, and therefore no delay necessary for deployment.
 3. One third less depth offered to the enemy's projectiles.

It may of course, at any time, be partially or wholly deployed into two deep line to fill gaps or for other purposes.

These closed formations are orderly bodies upon whom the skirmishers can depend, and whose presence infuses a moral force into the whole, and ensures an orderly and steady advance.

They should be kept as much as possible out of the aimed fire, and if the skirmishers work well and avoid as much as possible everything which would draw a convergent fire (which makes the "unaimed fire" hot also), they have no unusual risks to run. In any case, however, their extended front, uniform slight depth, and pliability, provide them with the best general chances against sudden or unforeseen risk from aimed or unaimed fire.

ATTITUDE.—In crossing open ground under fire the attitude of the soldier is of very great importance. A man of 5 ft. 8 in. may, be

stooping, take nearly 2 feet off the top of the target which he would otherwise offer to the enemy, and be able to move without inconvenience. What lover of wild sports has not compressed himself into the smallest possible compass, walking and running for a length of time till every muscle has ached? The men should be drilled to this, and, when under fire, all dashes across exposed places should be made in this attitude.

SPEED.—On this subject, and the general method of getting over the ground, the following appeared in an English military work as early as 1852, on the first introduction of the Minie rifle. "All movements of skirmishers, under fire of a well posted enemy, must be at the double-quick to avoid ruinous destruction. If the distance cannot be surmounted in one effort at such speed, it must be traversed by successive dashes to intervening cover;" also, exposed to the long range it would appear that supports will be often obliged to loosen into extended order." (*Essentials of Good Skirmishing*, 2nd Ed., pp. 21-31.) This was the essence of the plan adopted by the Prussians at Le Bourget.

THE ADVANCE TO THE ATTACK.

Skirmishers.—In the "advance to the attack," i.e., at the long ranges, the skirmishers should be comparatively few. Very little of the enemy is visible, and to produce any appreciable effect, physical or moral, firing at such distances requires deliberation and judgment. The temptation to the skirmishers to throw away fire is much greater now than formerly. It is better to get over the ground to the borders of the "attack proper," than to waste time and ammunition, increase noise and smoke. They may be reinforced, however, if circumstances demand it, and should be doubled at point-blank range.

Bodies in support.—The ground most favourable to the defenders i.e., the clear open front, would—if the enemy were kept well occupied, be most favourable to the advance in line. If the front were not clear and open so much the better for the assailant.

Officers commanding divisions, brigades, regiments, and companies, each within the limit of their command, possess the power of altering their formation, and increasing or diminishing their front to suit the conditions of ground, and they must exercise their judgment in the same way in regard to the enemy's fire. Our own military history is fertile in instances exhibiting the readiness and pliability of our troops, and that there is nothing stiff in our system, or opposed to the exercise of intelligence.

The following is an instance of a regiment crossing open ground and a daffie swept by fire. At the Nivelle on the 10th November, 1813, "the line of the French main position was in front of the regiment with an intervening rocky water-course, which it would seem was deemed impossible by our enemies. The 52 moved by threes the small open ravine and wood in their front under a smart fire of artillery from the ridge which was next to be assailed. In front of this wood, the water-course was crossed by a small and narrow stone bridge, on the opposite side of which was a road running parallel to the water-course, with a sheltered bank towards the enemy. The officers and men of the 52nd crept by twos and threes to the edge of the wood, and then dashing over 100 yards of open ground, passed the bridge, and formed behind the bank, which was no more than eighty yards from the enemy's entrenchments. The signal was then

given, the rough line sprang up the bank and the enemy gave way." (Records, 52nd l. 1., p. 210). Order is the rule, and such circumstances demand exceptional measures. Under modern long ranges such cases will occur more frequently.

The nature of the intervening ground and the enemy's fire must determine the question. That formation will be the most suitable which will enable the assailant to traverse the intervening space with the least loss, in the best order to guard against interruptions, and from which he can form line most readily before entering upon the arena of the attack proper.

Even the Prussian "small columns marching swiftly," might be accepted as a means if suited to the ground, provided they deploy before entering upon the arena of the attack proper.

Across ground the nature of which renders an advance in line impracticable, and except where it is so exposed to fire that the extension and successive dashes of the whole (as with skirmishers and supports, p. 23) advisable, the flank march of fours, from the wider freedom which it offers to the exercise of judgment among subordinates, whether for divergence, variety of pace, or temporary loosening of files, seems likely to combine the greatest facilities for getting over the ground, taking advantage of all cover, and maintaining an amount of order, from which the order of the whole can most readily be resumed. It might almost be denominated the independent march of companies but not quite so—order must be the rule, independence the exception.

Advance of the second line—The circumstances under which the advance of the first line across the space to the holders of the attack proper is made, differs somewhat from those of the second. The first line follows the skirmishers while they are still in motion. During their progress the enemy are comparatively slightly engaged (though the artillery must endeavour to make up for it), and they might even share with the skirmishers a small portion of the aimed fire; the unaimed shot sphere is continually varying with the mark; and the firing generally is more scattered. When the skirmishers and the first line have reached their position the enemy will be more hotly engaged, the direction of their fire will be more steady, and the shot spheres pretty constant. The second line (except for the enemy's artillery), when the time arrives, may advance in almost any formation that the ground will admit, avoiding the unaimed shot spheres. If the ground admits, the four loop line will often be the best for present and future purposes.

From this it will be seen that if the attack is opened by bodies separated from each other by 400 or 500 yards special facilities will often be afforded for bringing up the second line with little risk. These dispositions may then be converted into converging attack by inclining towards the centre, or a flank, during the attack proper.

(To be continued.)

RUSSIA IN CENTRAL ASIA.

(From the New York Times.)

The question is asked what is the meaning of this restless and determined advance of Russia eastward and southward? It is mere lust of conquest that prompts her to absorb the Khanates now, and to use them afterward as a stepping stone towards British India? Partly so, perhaps, but not en-

tirely so. It has been the misfortune of Russia to have acquired an empire as large of this continent, on the wrong side of the backbone of the Western Hemisphere. In Europe and Asia alike the immense plains which constitute the Dominions of the Czar, slope in the wrong direction. Her great rivers have either no viable outlet at all, or flow into the Arctic Ocean. Did the people at the North Pole need her grain, her hemp, or her fur, and were the girdle of perpetual ice removed, she would take rank as one of the foremost commercial and maritime powers of the world. But as the great highways of western commerce are the Mediterranean, the Atlantic, and the Indian Ocean, and as she possesses very inadequate means of reaching any of them, the greatest problem of Russian statesmanship must continue to be as it has been for the last two hundred years, how to obtain for her a southern seaboard? Elihu Barritt published, in March 1871, a little pamphlet composed of contributions inserted in the *Times* and other journals, in which the view of the subject is very fully illustrated. Here are some points from his argument:—

"Russia is virtually a riverless empire. It is full of rivers, great and small, but either they run to no ports of her own or they are worthless for commerce. Imagine a great bayou of the Mississippi, just below Vicksburg, of the dimensions of the Black Sea. Imagine all the rivers in the United States from Maine to Texas, to run into this salt-water bayou, and that all the commerce that floats on those rivers has through that short length of the river that connects the inland sea with the Gulf of Mexico. Then realize, if you can that this short and narrow strait is called the Bosphorus, and that New Orleans is Constantinople, and that all the commerce of the United States, east of Rocky Mountains, that finds its way to the Atlantic, has to pass between the ports of a foreign nation, of a race, language, and religion as alien to us as any pagan people can be. See what long rivers run northward into the Arctic Ocean, as the Ob, Yenisee, Lena, and others. Look the other way and see the length and course of the famous Volga and Ural. These fall into the Caspian a warmer sea; but they might as well run into our Lake of the Woods; so far as ocean connection and commerce are concerned."

The political and geographical necessities of Russia means one and the same thing. Trace the long line of her southern frontier, and you have a key to the past, present, and future problems of Russian diplomacy. Denmark holds the entrance to the Baltic; Prussia debars her Muscovite neighbor from getting a port on the North Sea; Austria lies between her and the Adriatic, and she must conquer Turkey to command the Dardanelles, where a fort or two could at any time neutralize all the benefits of the few hundred miles of seaboard between the mouth of the Dnieper and the mouth of the Dan. Then comes Asiatic Turkey, then the land-locked Caspian with Persia on its southern shore, cutting off access to the Persian Gulf, and then, assuming the ultimate conquest of Turkistan there are Afghanistan, and Beloochistan, interposing a solid wedge of territory between Russia and the southern ocean. From that point onward to the far distant Pacific, half a continent lies between Russia and the southern seaboard of Asia. Nicholas has tried to pierce this wall of territorial adamant at its weakest point, in the Danubian Principalities, and found reason to repeat his rashness. His son is driving the wedge

of military possession in now as far as he dare, with the view of striking some day for Persia or Afghanistan, and so giving Russia a broad ocean outlet for products which she at present carries by many tortuous and narrow channels to the markets of the world. It may seem that he might as well continue his father's policy and by intrigues and money in Greece, Roumania, and Servia pave the way for another armed attempt to clutch at the sick man's inheritance. But then he would have to fight Austria, and perhaps Germany as well as Great Britain. In Asia on the other hand, there is only the British to deal with and an effete dynasty to topple over, whether Herat or Teheran be made the objective point of advance. It is difficult to see on what grounds the usually well-informed *Independence Belge* assumes that there is no necessary divergence between the interests of Great Britain and Russia in Central Asia. Keeping in view the fact that England might as well quit India at once, as allow Russia to command the coast of the Arabian Sea, it is very hard to see how she can avoid drifting into war about Persia or Afghanistan some day.

STRATEGICAL RAILWAYS.—The Prussian Minister of Commerce has laid before Parliament a scheme of new Government railways, 113 millions; works to be entered upon forthwith, and in order to complete communication with all parts of the country. One line is to be built at once between Coblenz, Trier, Driedenhofen (Thionville), and by this means there will be direct communication between Metz and the Russian frontier through Berlin. Other short lines are also to be made, so that there may be a concentration of several lines of railway on the new frontier and there will never again be the same delay as in the last war in sending troops on to the front.

An ingenious English inventor has turned electricity to a new account, but not as yet with complete success. His object is to use it as a motive power for the propulsion of vessels in lieu of steam, and he tried the experiment the other day on a yacht named the *Miranda*, with a screw detached. The result was the driving of the shaft at such an immense velocity that before the machine could be stopped, it had broken away the fastenings, being to powerful by half for all the work it had to do. The inventor of the machine, which is called the "Electro Magnet Motor," estimates the number of its revolution at full speed at from 1,400 to 1,600 per minute.

The French papers continue to dwell upon the letter of the Duc de Gramont. It is stated that the Duc de Gramont is to communicate to the Commission of Inquiry several important documents to prove that Austria had intimated to France its occurrence in the war against Germany. Among these documents is said to be the authentic draft of a treaty of alliance between the two Empires. On the other hand, it is stated that the most emphatic contradictions of the statement made by the Duc de Gramont are received from all quarters. It is specially stated that the draft treaty in question had no connection with the events of 1870. The publication of these documents, which has become indispensable, is anxiously looked for.