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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 4, 1873.

No 5.

NEWS OF THE WEEK.

English advices are of a momentous character; a contest appears to be inevitable with Russia, in relation to her advances in Asia; and the Gladstone Ministry have the supreme satisfaction of knowing, that they have trailed the honor of their country in the dust to no purpose. If honest men had held the helm of affairs when Russia made her insolent demand for the abrogation of the Treaty of Paris in 1870, they would have answered it by open defiance. But with men like Gladstone, and Grenville at the head of affairs, the folly of concession will be made manifest in more cases than this.

Meantime the *Ministerial* and *Manchester* press are busy telling the world how the action of Great Britain is sustained by Turkey, Italy, Austria, and other third class powers. Not a word is said in reference to the action of the *Kaiser*, nor of our dearly beloved cousins over the lines. Both those parties will stand by and see fair play, and probably take up the conqueror.

Under date of 26th January, we have the following from London:—

There is much uneasiness in consequence of the English note to Russia, regarding the disputed boundary question in Central Asia. In the settlement of the relations between the two powers a year ago on the Forsyth understanding, England only required Russia to abstain from the invasion of Afghanistan, but the boundary of that territory was left undefined. The present note declares that the northern boundary of Afghanistan commences at the Lake of Sri Koil in the Pamir Steppe, thence follows the Oxus to Kadajh Saloh, and from that point westward to the Persian frontier. The note states that England informed the Emir of Afghanistan that he may fight the Russians if they crossed this line.

The Russian reply declares that the desire of Russia is to maintain good relations with England, but it refuses to accept the indicated boundary, because it includes countries which never belonged to Afghanistan, but were always independent. Russia's ob-

ject in taking Khiva is apparently to establish depots and hold and occupy the whole valley of the Oxus. England draws this line to interfere with Russia's purpose and to enable the former power the better to hold the Hindoo Kush as a line of defence when the day of fighting comes.

T. Mitchell, Assistant Secretary of the British Legation at St. Peterburg, has just left London for that city, bearing important despatches to Lord Loftus British Ambassador.

A Lahore newspaper states that Sir Dair Abdul Rahmar, under Russian instigation, captured Fort Hissar, a dependency at Cobal, and sent the Governor of the place, a prisoner of the Russians. Hissar is a good starting point for the Russians in any movement they may contemplate against Afghanistan, Turkistan. The same authority states that Sirdair Mahomet Khan has made a successful attack on Sterabat in Cobal. The Governor of that city was likewise captured and delivered to the Russians.

The Australian Government have accepted the proposition of the Imperial authorities for continuing the Colonial Postal Service between Point de Galle (Ceylon) and Melbourne and Sydney.

The British Government have notified the several Colonial Governors of its willingness to undertake the entire transportation of the mails from England to Ceylon, leaving the colonies free to make their own arrangements for the rest of the service. Toward the latter they also offer to contribute a subsidy of £40,000 annually, besides granting every reasonable facility for the establishment of a fortnightly mail. This will virtually make Melbourne the terminal port of the steamers. No serious opposition to the scheme is looked for from South Australia, Tasmania or New Zealand, for though the last named colony avinces what the *Argus* designates "a sort of sentimental preference" for a California mail service, yet the superiority of the old route, via Suez, both as regards celerity and regularity of transit, is so generally recognised that all important correspondence between New Zealand and Europe is uniformly forwarded via Melbourne.

As a postal route, the *Argus* adds, the Suez line is without a competitor; and freely admitting all that can be said in favor of establishing a line of powerful steamers via the Cape, and of maintaining regular communication with the Pacific coast of North America, nature and the great channels marked out by modern commerce have combined to indicate the track as the one along which both our electric intelligence and the tides of our correspondence must run for all time to come. The course of post between England and Australia via Suez, has been reduced to forty-two days while on the other hand, whether, under the most favorable circumstances, the run from Melbourne to London, via San Francisco, can be made in less than fifty days remains to be demonstrated.

One of the most remarkable telegraphic triumphs of the age has just been achieved by the recently constructed cable to Australia. Intelligence of Gen. Grant's re-election on the 5th reached Melbourne, via London, on the 6th and was published in the *Argus* of the 7th.

The International Exhibition was formally opened at Melbourne by the Governor on the 6th. Among the distinguished visitors on the occasion were their Serene Highnesses the Prince Augustus and Philip of Saxo-Cobourg.

The new Theatre Royal, Melbourne, was opened with appropriate ceremonies on the 6th.

It is rumoured that the differences between Great Britain and Russia, on the Khivan question, instead of being in a fair way for a naturally satisfactory adjustment are increasing; and that France, Austria, Italy, Turkey, Denmark and Sweden have determined to support the British Government in the position assumed.

The disturbances among the artillery men at Tarragonte have been renewed. The Government threatens to treat the malcontents with rigour.

Petitions to the Cortes for the abolition of slavery, continue to come in from all parts of the kingdom.

THE AUTUMN MANŒUVRES.

BREAK UP OF THE CAMP.

(From the Broad Arrow

) (Continued from Page 40.)

In our last impression we gave the regulations in full for the movements of the troops from the camp at Amesbury. No time was lost in breaking up. On Friday morning there was not a cocked hat visible, and half the officers were mufti on their way to town. Let us borrow a lively correspondent's description of the scene at the Salisbury station of the South-Western Railway, to meet the 12.25 train:—"If one of the battles was a 'Donnybrook,' it was a mild specimen of its class compared with the Salisbury station of the South-Western Railway. Amid a heaving sea of portmanteaus, campbeds, chests, cocked hats cases, and miscellaneuous impedimenta, multitudinous passengers helplessly bob about. Three parts of the chiefs and staffs of both armies—to say nothing of umpires field, and regimental officers—are gyrating in the Meads, or clinging convulsively to rocks in the shape of pyramids of baggage. Here is a brigadier who but yesterday was brave in many feathers, and ruled over his regiments with a majesty in which there might have been a little fussiness. To-day *cheu! quantum mutatus*, he is lugging his portmanteau to a place where he thinks he can get it labelled, the callous porters utterly ignoring him, for he does not look like a tipping man. There are Sir Robert Walpole and his aide, doughtily doing battle with a canteen proprietor. The general has secured horseboxes, which the canteen proprietor holding that this is a free country, and pinning his faith on the axiom, 'first come, first served,' claims for his pair of hairy-footed dobbins. Sir Robert's skill as a master of tactics, demands circumstances to evoke it in all its elasticity of resource. A kicking horse is backed into the face of the canteen proprietor, and he collapses discomfited. At length all are aboard as the Americans say, and the train quits the station. At a little station near Andover we halt, to find the station full of high military swells. Where did they come from? They are waifs and strays of the worshipful South-western. They had started by an earlier train, occupying the last carriage, which had serenely uncoupled itself, and left them stationary on the rails. In two hours they had advanced eighteen miles. We took them in, and civilly entertained them whether friends or foes, and after a long, long halt, moved on again. Strident voices are heard in the next compartment. The war is being discussed by Southern chiefs. Auricular demonstration makes it apparent that the Northern and Southern generals are actually sitting back to back, divided only by the partition. Then we reach Andover, where there is beer. Strategical evolutions of great dexterity are performed with a view to securing glasses of this beverage, and detached parties get out with great determination and success in search of pork pies. It was at the bar—the stick, as a profane aide denominated it—that the chiefs of the Northern and Southern armies first came into actual contact. There was no need to tremble for the result. Perhaps Sir John was the more dexterous in his flank movement on the barmaid's hand as she brought her glasses to the counter, but Sir Robert left nothing to be desired in the promptitude with which he put himself outside his glass of beer when once he obtained

it. A romantic man, imbued with the Quixotry of chivalry, might have expected them to toss who should pay for the two glasses. They didn't, but they were as amicable as if they had been reared together in childhood's happy hour, and never been parted since. At length Waterloo was reached, some time before five. Over the hand-truck and combat for luggage, cabs, and porters it is merciful to draw a veil. General Shute who had succeeded so well in his raid upon the Wiley, was driven back in his reconnaissance in force on a hansom; and if oburgation from everybody can have any effect in disturbing serenity, not even a canopy of costly state and the lulling influence of sounds of sweetest melody could make sweet the slumber of the directors this night.

THE VOLUNTEERS AND THE CONTROL.

On Friday evening a party of London Volunteer officers, just returned from the manoeuvres, perhaps by way of imitation of the great military dinner at the War Office (of which a separate notice is given on the next page) gave an entertainment of their own in one of the streets off Piccadilly. The campaign, of course, was the question of the night. There was a general expression of gratitude towards the "Line" for the friendly way in which they had acted with respect to the Volunteers, and the Control Department was said to have kept the men from starvation better than might have been possible. There was, however, no effort made to hide the complaint that food had been served to the military on almost every occasion some hours before the Volunteers got sight of it. This was sorely felt when a day came on on which salt pork was in use for the Regulars would, on obtaining the meat, at once place it in hot water, and so get rid of much of the salty nature of the viand before the dinner hour, whereas the Volunteers had to hurriedly cook it and eat it as it was. Another grievance was that Volunteers were charged exactly double price for any provisions they had in the military canteens. In fact, so generally was this the case, and so severely was the matter felt to tell on the pocket, that the Volunteers were obliged to resort to the plan of getting the soldiers to purchase their articles for them. High praise was heard of Solisbury Plain and its neighbourhood as a camping ground. There was water everywhere not alone enough to drink, but enough to bathe in at every point, and the luxury of bathing for men who often remained two nights together in their clothes, had, it was asserted, been so valued by men of all arms, that large groups requested every morning to be "told off" for this purpose.

WEAR AND TEAR OF UNIFORM.

The correspondent of the *Daily News* writes:—"Not a few recruits, I am told, have been brought in by the manoeuvres, and I suspect that there would have been a great many more had the Government behaved with a little more liberality to the men in various points of detail. One of these matters is that of uniform. You cannot—especially when you are wearing shoddy, and indifferent shoddy too—prevent clothes from being a good deal the worse for wear after a month's campaigning and marching than they would be after three months of garrison duty. But nevertheless so far as I am informed, the men are to receive no compensation for the wear and tear of their uniforms, and if the said uniforms require any repairs or replacing, all costs will be stopped out of the men's pay. Surely this is unworthy a great and rich nation. If we are to have autumn manoeuvres for the

benefit of the whole country, it is surely not fitting to make those who work hard to show themselves good soldiers, and worthy of the interest the country takes in them, pay for their hard work as well as do it. A good deal too, might be said on the subject of the extra expense to which officers are put by the manoeuvres, and the necessity of allowing them extra pay during the time they are in the field. But one must not ask, I suppose, for too much at once from that heavily burdened being, the British taxpayer."

OUR FOREIGN CRITICS.

For the following, relative to the opinion of the foreign officers who were present at the manoeuvres, we are indebted to the *Times*:

"Setting out with compliments to the excellence of our materials, which may be accepted as sincere, our critics very often gave us to understand that we do not know how to make the most of them. One eminent personage, indeed—a man who is a politician as well as a soldier, after the march past on Thursday, said that 50,000 troops like those he saw, ought to hold in check 100,000 men of any other nation. Mind, he did not say 'beat' but 'hold in check,' and, he added, 'if properly handled.' That was very high praise. But he also said that, looking to the question of expense and to our peculiar position, he did not think England could pretend to rank with the great military nations of the continent, and that she must be content to act with allies, where she could have a sure base of operation, in which case her influence would be enormous. It may be said, without making comparisons that the arm which the French officers most admire is the infantry. They are never tired of praising their steadiness, good humor, perfect repose, order, and fine appearance. But then they are 'desolate' at the slowness of their deployments, their dense formations, and their adhesion to a system which one of them said was 'an order of battle in line, with supports in column, which could not support when called upon.' Their artillery officer cannot bring himself to like steel guns, but he is as great an admirer of the quality of our infantry as the gallant general of the brigade who has watched them so closely, although he might not quite have grasped the nature of field movements. It is from the able and distinguished representatives of the most formidable army in the world that our system receives the most rigid examination. They are not extravagant in praise. But they are earnest on two points—the very fine staff of all sorts in our army, and the deficiency in instruction in what is termed 'fear discipline' of the men, and the indifference or ignorance of officers in subordinate commands when they ought to act without needing orders from above, or being told what to do by umpires. Thus, a line of skirmishers advances far away from its supports with one flank perfectly unprotected, over a field to attack a line of infantry which lines a hedge, in front, and out-flank them on the right or left, and the officer goes on letting his men burn their cartridges as fast as they can till an umpire catches sight of the ruin he is causing and orders him to fall back; or a squadron remains halted under the fire of a battery at short ranges; or guns come into action on the brow of a hill exposed to infantry fire, and not at all properly supported. The faults of artillery officers in this way are, however, not at all common comparatively. They consider the employment of such troops as Yeomanry in regiments quite ridiculous. The real use of such men—and it is

very great—is as *obvious*. In the same way, the mode of employing cavalry is an arm apart, instead of attaching a certain proportion of it to each division, where they would be of the utmost service to the officer in command. "Do not," they say, however, think for one moment that at our great manoeuvres we do not commit blunders every year. We have been at our work a long time. It will take you five years yet to get the system into working order. We learn something every year still, and see errors to correct each time." As to horses, officers and men of the Artillery, they have but one opinion, but it would be too much to say they are quite satisfied with the reasons which have led in this country to the condemnation of the breech-loading system, especially as they think they have found a good time-fuze and can get a shrapnel fuse after all. To officers who are accustomed to companies 250 strong, and squadrons, two of which equal the cavalry regiments they saw on Monday, the number of regimental officers appears unjustifiable; but whatever may be the details in which they consider improvement possible, they, like nearly all our foreign visitors, are completely incredulous as to the dangers or possibility of invasion. "I thought it possible," said one of the officers who were at Fisherton Hall, "till I came here, now I see what a baseless fear it must be." One alone dissented and considered that a coalition between Germany and the United States, or more formidable still, between Russia and the Transatlantic Republic, might render the undertaking not indeed successful, but of possible execution.

OPINIONS OF THE PRESS.

The *Times* observes that it is evident that the main value of the autumn manoeuvres, considered as anything more than a physical exercise, depends on the manner in which the umpires discharge their duties. It is for them to register the lessons of daily experience, and to impress it with due firmness on the officers engaged. It must always be a very difficult task to deduce these substantial lessons, from fictitious warfare; but there are some points on which, if due care be taken, instruction can be insured. Officers, for instance, may undoubtedly acquire the art of duly observing the character of the ground over which they are operating, and of making due use of its peculiarities. There was nothing, in which during the late war, the Prussians were more conspicuously superior to the French, and they had, for the most part, acquired their skill in the exercises of peace. General Blumenthal, indeed, is reported to have said that when the firing begins the instructions of manoeuvres is over. All that is important in them is the disposition of troops and the method of advance. Perhaps there is no army in which such instruction is more necessary than in our own: Leave a British soldier to himself, and his sole idea would be to close upon his foe. We are not good at preparation in anything. But the chief peculiarities of modern warfare lie in the importance now attached to distant, preparatory, and almost intangible pre-arrangements. A good beginning is more than ever half the battle. If our officers do not perfect themselves in this art of opening the game of war, they will find themselves, in the event of conflict, hopelessly outmanoeuvred by their adversaries.

The *Post* asserts that the last fight of the manoeuvres has served to establish an inference already getting well arrived at from the preceding operations—namely that the sys-

tem of "general ideas" adopted on this occasion either goes too far or not far enough. Either the contending generals must be left to operate against each other almost untrammelled, or the conditions of the game they have to play must be laid down much more fully, emphatically, and precisely. A kind of middle course was adopted, but it has not answered. Which of the other two courses ought to be worked on in future? The plan of leaving the generals to fight it out after their own idea has many advocates, and it is very taking at the first sight. Under it all bickering as to what was or was not allowable would be impossible, and the Control Department would be really tried by a crucial test. But those advantages, it seems to the *Post* would be too dearly purchased; for they would be gained at the expense of permitting and teaching a strategy so false and unreal as to stamp the manoeuvres with the mark of downright absurdity.

The *Standard* is of opinion that the autumn manoeuvres of 1872 have been as little instructive and as unreal as could well be. If those of 1873 are to resemble their predecessors, the sooner these military displays are done away with the better.

The *Daily Telegraph* trusts that before the next autumn the worst officer in Her Majesty's Service, General Idea, will be sent into honourable retirement and that the concrete fact, visible, tangible, moveable, will succeed to his place on the muster roll. Apart from the absurdities performed by this pretentious entity, the campaign has been well worth the money it has cost. We have every reason to be proud of the quality of our troops, whatever else may be wrong in spirit and system. The Militia have disproved the accusations put forth last year, while the Volunteers have afforded evidence that discipline and practice alone are needed to make them choice soldiers. We may dismiss the autumn manoeuvres of 1872 with the verdict that on the whole they have been profitable to the nation. But they are still only a beginning, and require the touch of a master hand to bring them up to the high standard which army administrators should ever keep in view.

The *Daily News* says:—None of us will sleep less soundly because it is found we have not an army of philosophers to defend us, and that over elaborate schemes fail of being understood; but the comprehension of positive orders by officers is a matter of life and death in war, and it is discouraging to find that is not under all circumstances to be expected. Failures like these almost discourage the further important inquiry whether our army is making progress in the art of fighting. We know that in some quarters the inquiry itself is regarded as a thing to be discouraged. The artillery has earned again this year the very high encomiums it merited a year ago in Hampshire, while the cavalry is such as it would be difficult to match, horse or man, out of England. These manoeuvres have once more shown to us our deficiencies, which are still many and great; but they have also shown that our army has great undeveloped capabilities. With the abolition of purchase it has entered upon a new career; our officers will take a professional pride in the attainments of their men and the efficiency of their regiments, and if only they are fairly encouraged they will make our army worthy to be compared with that of any military force in the world.

The *Spectator* observes that the second series of autumn manoeuvres are now at an

end, and although marred by some striking blemishes, they have been a great improvement on the operations of the past year; they have stimulated the zeal of the army; afforded officers and men instruction with an object, so much more effective than instruction without an object; varied the routine duty of camp and garrison by the novelties of a novel life; and to some degree tested organization, tactics, and generalship. We have not sufficient information to warrant any observations on the tactical experiments—if there were any—nor can we yet form any definite opinion on the action of the Control Department. Much more evidence than that yet afforded for purposes of criticism. On the bearing of the troops there seems to be but one opinion, and it is creditable to regimental discipline. The auxiliary forces came out better than was anticipated; but so far as the Volunteers are concerned that is not surprising, for they were virtually picked men. The Militia appeared to have raised the reputation of that branch; but we all know that the country regiments only want training, clothing and good food to make them effective soldiers. Hereafter we shall get the complaints of competent observers. The most salient lesson taught by the manoeuvres is—give up the faculty of general ideas, all paper forces and considerations. Define the field and the objects of the campaign, and let the generals manoeuvre as best they can. Another lesson is—choose your commanders from the rising generation of soldiers; for the future belongs to the young or comparatively young, so that the novel, as far as it is sanctioned by experience, may have some chance of being recognized. Another year ought to see material amendments in the system and execution of our peace manoeuvres.

BANQUET AT THE WAR OFFICE.

On Friday evening last week, as briefly announced in our last impression, the right Hon. Edward Cardwell, as Secretary of State for War, gave a grand banquet at the War Office, Pall Mall, to the Prince of Wales, the Duke of Cambridge, and the foreign officers from Belgium, France, Germany, Holland, Italy, Russia, Spain, and Turkey, as well as English officers taking part or assisting in the autumn manoeuvres. The entrance hall of the War Office was carpeted with scarlet baize, and the room leading to the dining room was decorated with trophies of arms and the national flags. The full band of the Grenadier Guards, conducted by Mr. Dan Godfrey, played during the arrival of the guests at the foot of the principal staircase.

The Duke of Teck was amongst the early arrivals. The Prince of Wales, attended by General Sir W. Knollys and Colonel Feesdale, C. B., arrived at eight o'clock, and was shortly afterwards followed by the Duke of Cambridge, attended by Colonel Tyrwhitt. On the arrival of the Prince of Wales and of the Duke of Cambridge, the military band in attendance struck up the National Anthem.

The banquet was served up in the lofty and commodious banqueting room of the War Office (originally built for the Duke of Cumberland, brother of George III.) The table, a horseshoe shaped one, was laid for eighty guests, the Secretary of State for war presiding, supported on the left and right by the Prince of Wales and the Duke of Cambridge, the officers representing the different foreign Governments being seated at the upper table. The festive board was decorated by a profuse display of silver candle

bra and ornamental plate, and tastefully arranged cut flowers.

OUR FOREIGN CRITICS AT WOOLWICH.

The officers belonging to the various continental armies who have visited England to be present at the autumn manoeuvres devoted their first leisure day on Friday last week to Woolwich, having arrived at the dockyard railway-station from London about half-past ten o'clock, thence proceeding to the Royal Artillery barracks. Instead of going to the Royal Arsenal, as originally proposed, the visitors spent the morning in making an inspection of the objects of interest in the vicinity of the common. They first passed through the barracks, the soldiers' rooms been visited and closely examined, and afterwards repaired to the sergeants' mess, non-commissioned officers' library, and the gymnasium, where they witnessed some athletic exercises. They also went to the riding-school, the recreation rooms and theatre, and St. George's garrison church, and at one o'clock were escorted to the Royal Arsenal, and at once repaired to the Department of Artillery and Stores, where luncheon had been served in the model room connected with the department. The foreign visitors consisted of Baron Van-der-Smissen, Colonel Royal Grenadiers, Belgium; Général Davoust Duc d' Auerstadt, Général de Brigade; Capitaine de Frandry, d' Artillerie, and Baron de Grancey, Capitaine de Hussars, for France; Colonel Von Schroetter, General Staff, Germany; Schonstefl, aide-de-camp to his Majesty the King of Holland, and Captain Kromhout, Engineers, General Staff, Holland; General Garneri and Capitaine di Lenna Engineers, Italy; General Comte Pratasoff-Pachmotefl, General Aide-de Camp to His Majesty the Emperor of Russia, commanding the Garde à Cheval; Colonel Qvander, Artillery of the Imperial Guard, and Colonel Comte Koutaysoff, military agent in London for Russia; Don Theódio Noell y White, Colonel of Spanish Artillery; and Captain Von Koch of the Swedish Royal Guards. The only officers absent were a Spanish officer and the two officers who have represented America, they having other previous engagements; but there were present several other officers of distinction, besides those who officially represent their respective nations. In addition to the visitors, Major-General Sir David Wood, K. C. B., commandant of the Garrison, and thirteen other officers, sat down to the dinner, and while they were discussing its merits the splendid band of the Royal Artillery, under the leadership of Mr Smyth, performed a choice selection of music, for which they received the hearty encomiums of the visitors. At the conclusion of the repast which was served from the Royal Artillery Mess, under the superintendence of Mr. Morris, mess-master, and consisted principally of foreign dishes of a *récherché* character, the visitors proceeded to make an inspection of the Royal Arsenal; and in doing so passed through the Royal Laboratory Department, examining in turns the bullet machines and the machine for making lead rod, termed an hydraulic ram, which machine is capable of taking a charge of 4½ cwt. of molten lead, with a pressure of 800 tons upon the whole ram, twelve tons of lead rod for the manufacture of bullets being pressed out daily. After passing through the model-room and shell-foundry, they proceeded to the Royal Gun Factories, visiting in succession the coiling shop, pattern room rolling mills, and turnery. The various objects of interest which are usually witnessed in this department were explained to the visitors, an immense treat

to some, the trunnion piece of one of the largest guns being placed under the 10-ton hammer and manipulated. The visitors expressed great satisfaction with the systematic manner and expeditious way in which the men moved, with apparent ease, the large coil under the steam hammer. In the Royal Carriage Department, they successively visited the wheel factory, iron carriage shop, the saddlery department, and finally the mounting ground. Colonel W. T. Milward, C. B., A. D. C. to the Queen, Superintendent of the Royal Laboratories, conducted the visitors through his department. Captain Maitland, Assistant-Superintendent, and Mr. R. S. Fraser, Deputy Assistant Superintendent, escorted them over the Royal Gun Factories, and Captain Kemmis, R. A., in the absence of Colonel Field, Superintendent at Shoeburyness, with the assistance of Mr. Allen, Chief Constructor, through the Royal Carriage Department. The distinguished visitors were accompanied from London by Colonel J. M. Reilly, C. B., and several other officers from the War Office, and were received on their arrival at Woolwich by Major-General Sir D. Wood, K. C. B., commandant, and the Staff officers belonging to the garrison. The visitors left Woolwich for town by rail at six o'clock.

CORRESPONDENCE.

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

To the Editor of the VOLUNTEER REVIEW.

DEAR SIR,—The courteousness of your very flattering notice of my trite contributions to the pages of the REVIEW, demand however, undeserving of such favorable criticism, my best acknowledgments, which I beg you to accept.

A voyage round the Globe necessarily afforded the REVIEW a respite from my literary inflictions. Returning to our local regions, after a very partial success in pursuit of health, I was gratified to find the old REVIEW, in full blast, and, as usual, ably fulfilling its titulary functions. And I am glad to observe occasionally, hitting hard and to the mark, at Yankee assumption and Radical-Whig imbecility.

Sincerely trusting there exists enough of military spirit in the Dominion to sustain the REVIEW in a more extended sphere of usefulness to the volunteer at least, it should be indispensable. I beg to remain dear sir,

Yours very obediently,

SABREUR.

New Hamburg, 22nd Jan., 1873.

Sabreur will please accept our thanks for the remittance enclosed in letter.—Ed. Vol. Rev.

To the Editor of the VOLUNTEER REVIEW.

SIR,—In looking over the REVIEW of the 14th inst., my attention was particularly drawn to an article copied from the *United Service Magazine*, in reference to the uniform

and accoutrements of cavalry. The writer of that article commences rather ungallantly, by saying that lady's purchases their articles of adornment apparently regardless of the weather it is to be worn in, using this by way of illustration, and then says that the authorities apparently provide our cavalry in a similar way. Now, as far as the ladies are concerned, they display a far better knowledge of human nature than the writer of that article, for they know the influence they hold over the opposite sex by adorning the person, and as they hold an influence by adornments, just in the same way does a well and conspicuously dressed regiment attract smart young men to join it, and there is not the least doubt that just as fast as my article of trimming from a cavalry man's uniform is taken away just so much in proportion is that class of men kept out of the service, which goes to make the British cavalry soldier what they have hitherto been. The helmet in the first place is condemned because it is cumbersome to wear and too hot in summer and cold in winter, and whenever the troops commence to move the helmet slides back until it has got the name of neckhold protectors. Those remarks are anything but correct; I have had over twenty years' experience in cavalry, during which time I have worn the chako, busby, and helmet, and I consider the helmet far superior to either of the others, for it does not draw the heat as represented, particularly those made of German silver, for the metal being white does not draw the sun's rays like anything black. Another advantage is that it sits right down on the head of the wearer, and instead of it falling back on the neck as represented, the only complaint I ever heard was that they fitted too tight across the forehead, and instead of falling back, the men naturally lift the peak and throw them back in order to save their temples, but if the lining strings are drawn up sufficiently to allow the weight to bear equally all over the head, and not to let it come down too far so as to be too tight on the forehead, it can be worn just as easy as a silk hat, and is much more durable than any other head dress now in use. Another reason for preferring the helmet is because it being shaped like the head and fitting closely down upon it, the dragoon can turn his head in any direction without any fear of it falling off. The peak too is quite sufficient to protect the eyes when the helmet is worn in its proper place as described. Coming to the Tunic, the writer seems desirous to do away with all the trimmings, because it speedily loses its beauty in the field. He tells us in the beginning, that ladies can only wear their articles of adornment fifty days in a year in England; but some too forget that the campaigning days of the British army, on an average, is not one day in fifty. He seems so thoroughly imbued with the necessity of being quite ready in every little detail, that he puts me in mind of an

old lady I remember in England, who, after getting a new black bonnet, remarked, "that it would be so handy if anything happened her dear husband!" she would thus add a little to the crumple, and there she was. Now, I wonder the writer does not advise the whole army to be dressed in black, and by each man carrying a small piece of crumple in his pocket, he could put it on out of respect to his dead comrades the moment an engagement was over. The trousers we are told, should be roomy, and as we are also told that a soldier needs just as much room in his clothes, as sailors do. It is natural to infer that the writer obtained his equestrian knowledge on the back of a "Rocking Horse." A Dragoon knows well that his trousers should be as tight as they can be worn with comfort, every extra inch of cloth will fold or wrinkle between the rider's legs and the saddle, making it almost impossible to ride with ease to the rider. The trousers should certainly be long, so as to allow plenty of room for bending the knee, and here, I might remark, that our military authorities make a great mistake in getting cavalry clothing made by Infantry tailors, the result of which is that the trousers are far too short in proportion to size, and do not come up high enough around the waist, by four or five inches. One objection to the Hessian boot, is that the men will need more than one pair of overalls; well it is to be hoped that the day is far distant when a cavalryman will be confined to a single pair of overalls. The case against the Hessian boots is certainly a poor affair; supposing as the writer states, that they are generally made too small for a campaign, it is a very easy matter to make them larger, the fact of their being too small does not interfere with their principle. The writer gives a very detailed account of the Parker Rhodes Boot, which sounded very much like an advertisement for that gentleman; he does not seem to understand that a clump soled boot is not fit for a mounted man, unless he thinks that dragoons, like jockeys, should put their feet in the stirrups as far as it will go; and then with a clump soled boot, it will be a little difficult to get it out again. It is a frequent occurrence in the field with cavalry that by wheeling, or other movements, the crowding of the horses cause the men's buttons or straps to give way, and it is easy to imagine what a splendid figure a Dragoon would be with a pair of high-lows on, and his trousers rolled up to the knee, which takes place directly a man loses his buttons or straps in riding. It would be difficult to conceive a better boot than the Hessian for cavalry, that is for a campaign, or winter wear, for it has all the advantages of the high boot, the unnecessary leather coming up over the knee, is a much neater fit to the leg, and is consequently much lighter and better for men to wear when dismounted. Besides recommending a sort of high-low, the uselessness

of which for anything but stables to a mounted man is easy to understand. The writer recommends a helmet of felt, something like a London Policeman's, and goes on to show, where it should swell out above the forehead, to where the plume of horse hair would meet it. Now, after doing away with all the trimmings, it is not easy to understand what he retains the horse-hair plume for. We are informed that colonels and generals discuss the matter of a boot, or fit of a jacket, in just the same way that a woman will discuss the pattern or shade of a dress, and I would add, with very good reason too, for those officers know full well the importance of making the uniform neat, as well as serviceable. One officer, we are informed, asked when some one proposed doing away with the shabraque, "would you take away the only ornament we have left us?" as if says the writer, the existence of the whole British Cavalry depended on a piece of embroidered cloth, in answer I should say it did not; but, as before stated, ornamentation has its influence, if it has not, I should like to know for why are recruiting sergeants sent out from their different regiments purposely decorated with ribbons of different colors. In looking over the history of the past, we find the greatest deeds of valor done by regiments wearing the most conspicuous uniform, caused by young men having joined those regiments, who took a pride in their dashing appearance, and fought as those sort of men always do fight, for the credit of the regiment to which they belong. If the experience of the past is a guide for the future, it naturally follows, that very little is to be expected from the style of men similar to the writer of the article to which I refer.

For weapons we are recommended to the sword, or lance, or long barreled pistol. The pistol, we are told, would kill at 600 yards, which is perhaps true when it hits, but when we find that very few shots hit, at that distance, in proportion to the number of rounds fired from rifles having all the appliances for the proper elevation of the piece and consequent accuracy of aim; it is safe to infer that a long barreled pistol when fired at long range, particularly on horse back, is of no use whatever. The revolving pistol is undoubtedly a good weapon at close quarters, but the question is, how are cavalry to get to close quarters under the long range and quick fire of breech loading rifles, supposing that some portion of a body of cavalry, making a charge, succeed in gaining the object aimed at? It will be found that the advantages gained will seldom pay for the sacrifice made. Reason shows that to make good use of cavalry in future, a new system of tactics must be adopted for that arm of the force. The Snider Carbine now in use amongst our Volunteer Cavalry is a splendid weapon, and by dismounting part of the men at a time, and fighting them as rifle

men, gives the cavalry a chance to fight on something like equal terms. Any advantage that the infantry may possess in having a rifle with longer range, is made up by the quickness by which cavalry can be remounted and moved in order to attack them at their weakest and most exposed points. But in future wars, the chief uses of cavalry will be in outpost duty, cutting off the supplies of the enemy, reconnoitring his position, &c., in any of those duties, the men must act independently; if they are armed with a pistol, and expect to find an enemy armed with a rifle, it will be found that instead of finding out his position, thereby running the risk of coming into contact with a weapon with which they have not the shadow of a chance to contend, they will be following a system which our neighbors got especial credit for during the late war, viz., the looking more to a safe retreat, than to finding the enemy's position. The ridiculousness of having but one sling to the sword can be at once imagined, because the rider would, in that position, at a gallop be just as likely to find his sword in front of his leg as behind it, or turned back foremost. The use of the back sling was never intended to carry the weight of the sword, but simply to keep it in proper position. Again, suppose we have, as recommended a leather scabbard, suspended by one sling? its position will then be nearly perpendicular, we shall find that when mounted, it comes directly in contact with the spur, and would be cut through in a few days.

In reference to the saddlery, unquestionably some little improvement might be made but it is not of that vital importance the writer would imply, for after it has been reduced to its smallest possible weight, the fleetness of the horse thereby will not make up for the improvement in the firearms of the other arms of the force.

Hoping the next writer on cavalry and its equipment may understand thoroughly the subject about which he is writing.

I remain,

Yours respectfully,
ROYAL DRAGOON.

In the report of the Chilean Minister of Marine to Congress an account is given of the construction of nine new war vessels contracted for the Republic by the representative of Chili in London, with certain ship-builders there. These vessels are: 1st. A despatch steamer for the Straits of Magellan; 2nd. An iron-clad of six guns, 800 pounders weighing 12 tons; 3d. An iron-clad ram.

MILITARY.—Mr. R. A. Sisson, (formerly of Canada) the efficient reading clerk of the Senate, of South Carolina, has been commissioned as Major of the Fourth Regiment, First Brigade, First Division, of the National Guard of the State.

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The Volunteer Review,

AND

MILITARY AND NAVAL GAZETTE.

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

OTTAWA, TUESDAY, FEBRUARY 4, 1873.

To CORRESPONDENTS.—Letters addressed to
 either the Editor or Publisher, as well as
 Communications intended for publication,
 must, invariably, be *pre-paid*. Correspon-
 dents 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 (ac-
 cording to the weight of the communica-
 tion) 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 al-
 lowing a reasonable time for settlement,
 if not paid, the paper will be discon-
 tinued and the Accounts placed in Court
 for collection.

We have had occasion quite recently to
 direct the attention of our readers to *tacti-*
cal changes which have taken place in the
 British Army, especially what is known as
skirmishing drill, and to record our objec-

tions to the arrangements by which supports
 as well as reserves were brought under fire
 and quite as much exposed as the advanced
 line; to shew the movement in column of
 sub-divisions or sections, or by a flank, was
 objectionable; as well as the proposal to
 break up battalions into small sections or
 squads, by which the officers lost all the con-
 trol of the units, and the concentration at the
 decisive moment was rendered impractica-
 ble.

In another column will be found an extract
 from the *Militaire Wachenblatt*, a Prussian
 military journal of high standing, in which
 all our objections are borne out, and almost
 the identical words in which they were con-
 veyed used, and the very same conclusions
 arrived at.

It would seem as if an entirely new *tactical*
 system must be devised, and that the requi-
 site changes involve two alternatives, either
 the number of officers to be increased, or the
 first line of skirmishers must be composed
 of the best shots and most intelligent men
 in the army; and this necessarily leads back
 to the old flank companies of sixty or
 seventy years ago.

Under the by-gone system of *tactics*, the
 object sought to be accomplished by the for-
 mation of flank companies was precisely
 that which we are now trying to effect by
 assuming that the whole rank and file of
 an army are equal in activity, intelligence,
 and mental capacity; in fact, under the sys-
 tem proposed every private soldier must
 know the exact purport of every operation
 in which he is engaged, and, moreover,
 must have the same mental capacity and
 physical vigour as each individual of his
 comrades, the whole force being moved by
 the volition of one will; consequently, the
 loss of a commanding officer would not be
 felt; the operations in which the section,
 sub-division, or company, happening to be
 engaged would go on as usual.

If the *tactical* reforms can bring about
 this state of affairs, the Millenium is near at
 hand, and the world will be in that state
 of peaceful blessedness, so much admired
 by JOHN BRIGHT and his followers. Unhap-
 pily, however, wars and rumors of wars
 still agitate the earth; and as it is impos-
 sible to secure lasting peace, even by arbi-
 tration, so is it equally impossible to ensure
 the execution of tactical manœuvres by the
 united, spontaneous action of the rank and
 file of an army. All experience proves, that
 no matter how high the intelligence of the
 individual may be, except he submits to be
 come a portion of a mere machine—an ac-
 tive, and intelligent portion, by the way—
 he is not fit to be a soldier.

It is manifestly absurd to propose the in-
 crease of officers. The average now is about
 one to every eighteen soldiers; and, there-
 fore, it follows that the best shots in each
 battalion must be organised as parts of one
 of its units. If there are men sufficiently

trained to form two companies, a great
 point has been gained; And at least in Ca-
 nada, we could by a little exertion turn out
 110 *sharpshooters* out of every battalion of
 440 bayonets.

Those men should be trained in a higher
 degree than the battalion companies, and
 their places should be on the right and left
 of the battalion in line, leading and cover-
 ing the rear in column. The manœuvres
 taught should be simple, principally direct-
 ed to advance under cover; to use their wea-
 pons in every position, not by rapidity of
 fire, but by certainty of aim; to be quick to
 watch for and obey signals, which should
 be given by the officer in command alone;
 and to take care never to separate so far
 from the other sections as to make concentra-
 tion difficult.

While engaged, the skirmishers should
 carry no *impedimenta* whatsoever—nothing
 but their arms and ammunition. Knap-
 sacks, great coats and blankets, should be
 left with the regimental carts, and when the
 action was over they could be easily regain-
 ed. In training troops for this duty, open
 ground should be selected, because it will
 in future offer more serious obstacles to the
 advance of troops, than the roughest possi-
 ble surface. In manœuvring skirmishers,
 neither trumpet nor whistle should be used;
 the signals should be given by a mere move-
 ment of the hand, and the word passed
 from section to section. No rule can be
 given for operations that will change every
 moment, except that a company should
 not cover too great an extent of front. There
 should not be a greater interval between
 the files than three yards; but, even that
 will be modified by circumstances, while the
 mode of advance should be in line, the sup-
 ports drawn up under cover in line, and the
 reserves also in line.

Now, as to the distances they should be
 apart. A man will easily run 400 paces in three
 minutes. Allowing this interval between the
 advance and supports, and the same be-
 tween the latter and the rear, a distance of
 800 paces from the front, and which can be
 traversed in six minutes, will place the re-
 serve in comparative safety, while it will
 enable a concentration to be effected in half
 the time, in case the advance should be
 driven in.

In this order, all the difficulties attendant
 on bringing the whole advance, support, and
 reserves within 300 yards will be obviated,
 and all the advantages of an attack in force
 retained. But the soldier must not be im-
 peded by a single article besides his fight-
 ing gear, or perhaps entrenching tools.

A perusal of the extract referred to will
 repay the reader's trouble.

In these days of *tactical* revolution a very
 serious question will present itself to the
 mind of any thinking military man, as to

the position *field artillery* should occupy in future warlike operations.

The accuracy of fire attained in experimental practice would lead to the conclusion that all future actions will be determined by this arm alone, and that a modern battle will be an artillery duel at long range, on a large scale. Big battalions will no longer turn the scale of victory, because it can be demonstrated, experimentally, that they would be pounded to pieces long before they could comb within available rifle range.

The advocates of this theory loudly proclaim that artillery must no longer be hampered by the movements of infantry, and plead for thorough independence in action. Now, as the tactical movements of all arms of the service must be controlled by one will during the operations of war, it cannot be easily understood how this entire freedom is to be allowed to the artillery; or that the chief officer in command of that arm should exercise the functions of an auxiliary general, and post his contingent to suit his own ideas of the service in which the whole army is engaged.

It is evident that the whole of this theory is based on the idea of long range; that battles will be fought at distance of three or four thousand yards; and that artillery practice will be as good there as on the sands, say at Shoeburyness. To say nothing of the difficulties interposed by the irregularities of the ground in most countries where contests will be tried, the obscuration by smoke alone would be fatal to the theory of long range; while, under its friendly cover, a body of active skirmishers could find little difficulty in pushing their line of fire as close to the guns as to render the position decidedly uncomfortable.

As it is impossible to separate the artillery from the other arms of the service, it might be possible to make such a distribution of it as would leave a very large proportion of its force to act in action as might seem best to the Chief Artillery Officer. While *Field Artillery*—guns of position—should be made to conform to the infantry movements, as part of the plan of battle, there is nothing to prevent Horse Artillery acting with the advanced skirmish line, or in any other direction in which its services could be always effective.

It would seem to us that the old practice of attaching a certain number of field pieces to every battalion, would be about the best and most advisable under the new system of the service, because it would give greater mobility, occupy less space in the line of march, during advance or retreat; would leave every battalion ready to assume the offensive or defensive, and it would be a point of sacred honor to protect the guns.

Under what, evidently, will become the new system of tactics, massing guns in front

of a position could be productive of little effect; and as for artillery duels, they are amongst those pleasant speculations which contribute to while away an idle hour. The result of such a contest should, if the theory derived from experiment be correct, illustrate the time-honored story of the Kilkenney cats.

The disposition of Field Artillery with reference to the other arms of the service is attracting attention in England.

Broad Arrow of 28th December says as follows:—

“The present state of field artillery tactics in England is very unsatisfactory. Some recognized system of combination with the other arms must shortly be decided on, and to what extent that system will be a good one depends principally on the officer who will shortly succeed to the command of the Royal Artillery at Aldershot. At the Chalons of England, the country is open and diversified, and it is the only permanent camp of instruction where the three arms are exercised together in anything like force. At it will have to be decided the mooted questions of how to take advantage of the increased accuracy of rifled guns without letting the batteries get out of hand, how to combine with the other two arms in future, and whether artillery cannot assume a new offensive phase of its own. In addition to important tactical matters there are many anomalies in the service which it is high time were swept away. The carelessness with regard to the annual practice, the utter disregard of any instruction in judging distance, the unnecessary waste of valuable time in the perpetual burnishing and polishing, the incessant inspections, are all matters calling for reform. The lead of Aldershot is wanted in these matters, but to obtain it, the coming man must be one who will travel out of the groove of tradition. A glorious chance is open to a true reformer to break the bonds of red tape, and further most essentially the progress of the Royal Artillery. That the position of commanding officer of Artillery at Aldershot should not be held by a general officer is an anomaly co-existent with the purchase system, and which will, like it, in time be done away with. If from forty to sixty field guns are not sufficient to compose a general's command, it might be seriously asked, what does suffice? That the successor to the present distinguished occupant of the post will be a general officer is not probable, but those interested will look forward with anxiety with regard to his being a man “out of the groove.”

The article on “Russian Artillery” at the Moscow Exhibition, which is copied from the *Broad Arrow* of 28th December, throws details of the means by which the breech-loading variety was closed at the breach, was in use in that outlandish country as early as the fifteenth century!

Its perusal will interest many of our readers, as showing one of the earliest modifications of artillery, abandoned because the mechanical impossibilities it involved rendered it practically inoperative, has been revived in our day with the main problem of the system yet unsolved.

All the varieties in construction and rifling which have been revived as novelties at Woolwich were in existence between the fifteenth and eighteenth centuries, even to the *Gatling gun* or *Altraileuse*, and all were abandoned for the same reasons.

It is highly probable that the rifled artillery became obsolete as soon as leaden balls were superseded, which event occurred in the seventeenth century, cast iron being cheaper and more effective in battering stone walls, but useless in rifled guns. The bronze rifled gun of the era of MICHAEL FEDOROWITZ never fired cast-iron bullets: it is a breech-loader with the chamber slightly larger than the bore.

A most useful work for the interests of Great Britain would be a history of the various systems of artillery in use during the earlier stages of the revolution in the Art of War which gunpowder brought about, and it might be continued with advantage to the present period. Enough of the weapons exist to shew how they were constructed; and a full description of their mechanism, projectiles and history, would prove beyond doubt that the present systems are mere revivals.

It is quite possible that hints might be derived from a careful study of those ancient culverins, sakers, falcons, &c., which would lead to the solution of the mechanical problems which neutralize the advantage of monster artillery of the present day, and give us guns available for service under all conditions. As it is evident that unless the stability of the weapon is certain, its power will be of little avail; a 1400lb. shot will be useless without a corresponding shell; and neither will be of much value if subject to the continued failures of the present system.

The value of the system of ship-building, to which the attention of English naval architects has been lately directed, is illustrated by the following account taken from the *Daily Telegraph* of 4th January, of an accident to three of the largest ironclad vessels of the British fleet:—

“A despatch received last evening by the *Western Morning News*, from its Madeira correspondent, announces accidents during the late gale to three of the finest ironclads—the “Northumberland,” “Hercules,” and “Sultan”—the former of which has sustained serious damage. It appears that while the “Northumberland” lay at single anchor her cable parted close to the block at five o'clock on Christmas morning. The officer of the watch displayed exemplary activity, and steam was got up within twenty minutes, but not before the “Northumberland” had been driven against the ironclad “Hercules,” carrying away the latter's jibboom and top-gallantmast. The “Northumberland” was shortly afterwards brought up by anchors, and her officers were congratulating themselves upon having only sustained the loss of three boats and being prevented from going ashore by the collision with the “Hercules,” when, during breakfast-time, it was noticed that the vessel had a strong list to port.

Upon that a search was made, and it was found that she had a large hole in her side, and two compartments filled with water. The sea was too rough that day to send down divers, but next morning the men reported that they had found a hole inside five feet long by two feet wide, which, doubtless has been caused by contact with the ram of the "Hercules." One part of the iron plate was bent outwards, the other twisted inwards. The two filled compartments appearing quite watertight it was decided to proceed immediately to Gibraltar, and the "Northumberland" accordingly did so, accompanied by the "Hercules." She probably would then make for Plymouth. The new ironclad "Sultan" has also sustained damage, the extent of which is unknown, by having touched ground at Ferrol during a storm.

Captain SELWYN lately advised the sale of the whole fleet of ironclads, and experience seems to point out the wisdom of that course as they are decidedly more dangerous to friends than to foes, and appear to be utterly unmanageable in a gale.

We should not be surprised to hear of more of those floating gun carriages following the example of the ill-fated *Captain*. The risk of running the *Northumberland* from Madeira to Gibraltar with two compartments full of water must be fearful, and if she encountered a heavy gale there would be very little chance of her ever reaching that port, the weight of water would be sufficient to break her back.

The ram of the *Hercules* appears to have been very efficient in this instance at least, what the effect would be in action is quite another matter, moving at the rate of fifteen miles an hour or twenty two feet per second; her impact would be equal to 75,000 tons. No structures ever yet raised by man could resist it, but what would be the consequence of meeting an opponent moving at a similar rate and weighing 10,000 tons also? The result would be illustrated by the sequel of the tale of the Kilkenny cats! England's ironclad navy does not appear to be designed for great achievements.

There does not appear to be any limit to the mechanical ingenuity of the age in the production of monster ordnance, except the difficulty that will be found in constructing vessels to carry such weights.

As pointed out in recent articles, the rifling and the projectiles are the mechanical problems which yet remained to be solved. The following from *Broad Arrow* of 18 Dec., shows what the mechanics and scientists of England are capable of:—

"Drawings have been prepared and forwarded to the War Office for the construction of two 50-ton guns (fifteen tons heavier than the Woolwich infants) in case it should be deemed desirable to arm ironclads of the *Téméraire* class with weapons of that description. The authorities at the Royal Gun Factories have also designed and are prepared to construct a gun upon the Fraser principle seventy tons in weight, to throw a projectile 1400 lbs. With this the most approved system of constructing guns by coil upon coil of wrought iron, there is practically no limit to

the size of the gun which can be produced. One of the 35-ton guns has just completed a series of experiments at the long or sea ranges, Shooburyness, in order to decide as to its range and accuracy of fire. The gun was fired with two kinds of charges—with 110lbs of powder and the service shell of 700 lbs, and also with 85lbs. of powder and a common shell of 618lbs., containing a bursting charge of 35lbs. of gunpowder. The shooting was found to be exceedingly good, as was expected to be the case from the closeness of the holes made in the armour plates by the projectiles fired from this gun.

The *United Service Magazine* in an able article on tactics has the following sensible remarks relative to the desire expressed by closet soldiers to imitate the example of the Prussians in everything connected with the operations of the war.

"It is well at a time like this when we are told by every one who can give an opinion on military matters as well as by those who cannot, that the Prussian system of fighting is the only one we should follow, to remember that British skill, valor, and discipline gained victories in the past equal to any that have been won in late campaigns, and we will volunteer to predict superior in one respect namely; they gave to Europe a more lasting peace than it can ever dare to hope for again."

The writer might have added, that notwithstanding the superior tactics bequeathed to this same Prussia, by Frederick the Great, British victories rescued her from slavery, and prevented her political extinction. The article says:

"The fact is that the late wonderful war taken together with the invariable success that attended the arms of the Prussians has caused an amount of respect to be felt by all civilized nations for that power, which has gone far to blind our judgment, and narrow our vision in many important points. One Prussian private wrote Sanskrit, therefore, we were led to imagine that all their soldiers conversed in Latin and quoted Greek. Severe discipline was said to be the corner stone of Von MOLTKE's art of war, so we are called upon to admire officers and sergeants who box the ears of those beneath them in rank. The French neglected the most common duties of placing outposts, and sending out scouts to the front, and flanks, and because the Prussians did not pursue a similar suicidal plan of warfare, they are praised out of all reason, simply because they knew their duty and performed it in a creditable way. To have known their duty was a matter of praise, but we need not have gone such lengths in adoration and imitation of the victors as we have done. We are copying the Prussians in everything save one—that is wearing spectacles—and why every private, non commissioned officer and officer in the British Army has not been supplied with a pair of spectacles is certainly strange, if we but remem-

ber how often those useful articles to shortsighted persons were spoken of by lecturers on the war as well as being mentioned in the letters of special correspondents."

The value of cavalry is then discussed and the assumption that they should be converted into mounted infantry, summarily disposed of as impracticable; while their real relation to the other arms of the service, as cavalry is ably discussed and illustrated, the infantry is thus dealt with.

"The infantry, from its numbers, will always be the backbone of an army; so its method of manœuvring must at all times be of the highest importance. The increased range and more deadly effect possessed now by arms of precision, has called forth new methods of attack and defence, in order that the men engaged on either side may not be led on when attacking, or exposed when defending, to certain destruction. The line attack, which had several advantages, was the favorite mode in the British Service, while the attack by columns at half or deploying distances, was the custom in most Continental armies. Both of those systems are now partly exploded from being too dangerous inasmuch as either afforded too good a mark for their opponents, rifles or artillery to aim at. The line remains; but only in loose order—a line of skirmishers, who, as they advance, do so cautiously, seizing upon every kind of shelter with care and rapidity. The column also is to the fore, but that is only considered well posted when it is out of sight, yet within call of the skirmishers who cover its movements. The drill now being introduced into the English army is the skirmishing line with double supports, which in our opinion is all the better for not being exactly the German idea and we are further of opinion that if the following suggestions are observed, it will rather act upon our system of attack, would not only become more effective, but more British and consequently less Prussian.

Our first proposal will, we are aware, be a startling one, as it is no other than to discard the bayonet as a weapon not to be worn by British infantry.

"Infantry, be it remembered, is a body, elastic even in its solidity, and so formidable by its fire and by all the aids of art and nature in availing itself of ground adapted for offensive or defensive movements, that when so situated it can only be successfully attacked by infantry." The above is another of these military aphorisms which carry conviction by their mere repetition, as the facts they state cannot be refuted, which is the reason we have taken it to build our proposed system upon. If 1,000 men held an eminence which had been strengthened artificially by a deep ditch, that had been dug round its crest, the position would be deemed sufficiently strong to resist a force double that number. We will therefore next suppose that 2,000 men are ordered to attack the position in question, and first having surrounded its front with a line of skirmishers some 700 strong, next made arrangements for carrying it by assault. In the ordinary way, the skirmishers, by their fire, would keep under or master the fire from the troops in the entrenchments, while the supports behind creeping nearer and nearer under cover, so long as cover existed, would, when near enough, make a dash and attempt to carry the place at the bayonet's point. If we keep in mind that the fire from troops advancing to attack must be in a great measure useless, while

that of men from behind an entrenchment must be deadly in the extreme, while either to run up-hill or cross a ditch and clamber over gabions, no more unserviceable articles could for the purpose be in a man's hand than a rifle and bayonet, we will at once recognize the difficulties as well as the dangers of the undertaking, and the attack would, if both sides were equally brave and similarly armed, prove a failure. "Formerly," Lieut. Maurice tells us, "all fire-arms prepared the way for the bayonet." Now the bayonet, or rather the charge, in which the bayonet counts almost for nothing is only the means by which the fruits of the fire-action are reaped when they are fully ripe. Formerly the fire-arms were used to induce such a state of things as would make it possible to bring the bayonet to bear. The fact of a bayonet charge then implied that the critical moment had come. Now the rush to seize a position implies that the critical moment has passed, or the rush is sure to be fruitless.

The foregoing plainly proves that the bayonet is only a morally efficacious weapon, useful against troops already beaten, useless against all others. *Its days then has departed, let it depart also*; but supposing that one-third of every regiment of infantry were armed with short sharp cut-and-thrust swords—have no other weapon whatever—and that these at the right moment were allowed to attack or defend a position, would they carry all before them? Most undoubtedly they would, and we need only look back about a century in our own history to find proof of this. At the battle of Preston-Pans for instance, less than 2,000 Highlanders armed only with broad-swords and wooden shields overthrew 3,000 British infantry in twenty minutes, and at the battle of Falkirk a similar feat was performed while at Culloden wherever the Highlanders reached with their claymores, that portion of the English line was overthrown. We are of course aware that the infantry of 1745 can not be compared with that of 1872, but we do not mean to put swords in competition with rifles and bayonets; what we propose doing is to finish the attack with the sword instead of with a weapon now allowed on all hands to be useless—viz, the bayonet.

We therefore suggest that every infantry regiment should be composed of nine companies, 100 strong; that six of these companies should be armed only with the rifle, and the remaining three companies with nothing but a cut-and-thrust sword; that the six companies do all the skirmishing and distant fighting, and whenever it came to close quarters, the others should fall upon the enemy, sword in hand, making the attack, of course, whenever practicable, a surprise from the flank or rear. As it is well known that the most active men in a regiment are usually indifferent shots, in the three sword companies would be found a proper field in which to display their particular abilities, as smart men would be best suited for such work. In line, numbering, from the right, the sword companies would be Nos. 3, 6, and 9. In manœuvring, each regiment could be formed into three grand divisions, the colonel commanding the centre one, and the majors those upon the flanks. The position of the sword companies would be in rear of the supports, but kept so close and in hand that they must always be ready to rush forward and complete a victory or arrest a defeat.

This is a rough outline of an idea—which to our mind could be easily made perfect and manageable system of infantry attack or defence. At present the men composing

our Foot are burdened with a weapon—the bayonet—which is allowed by all parties to have become useless. In night engagements the second companies would, we believe, be found very valuable, either in making or resisting an attack, for they would be able then to get at once to close quarters, the position of greatest safety for themselves, and of greatest danger to their opponents. Having made the suggestion, we now leave the matter in the hands of the authorities.

The artillery—a description, however brief, of its mode of engaging, taking up positions, for direct or enfilading fire, where its supports should be placed, and other equally important matters connected with that arm would take up many more pages than we can now afford to give. However, we may return to this subject at a future time, when it shall have due attention. Before concluding, we may further remark that while a greater amount of liberty must now be granted to subordinates, they must be made to understand that this does not tend to lessen their responsibility, but to increase it. To fit themselves for the increased amount of responsibility which will now rest upon their shoulders, it is only necessary for them to study the art of war, to the utmost of their ability, and if they do so, it will be a curious combination of adverse circumstances that will ever cause them to make a mistake. Everything connected with engaging the enemy is profoundly simple, and once this great truth has been recognized, to think and act promptly and with energy, will bring any one out of a difficulty, in most cases successfully, or at least creditably.

The article fully supports the opinions put forth by the *VOLUNTEER REVIEW*, that the line is the only proper formation for attack or defence. That actions would be decided as heretofore by a charge, and that the bayonet had lost neither its power nor its prestige. The proposal to arm any proportion of troops with a weapon so obsolete for infantry, as the *broad sword*, could only emanate from a closet soldier. The very examples adduced in support, show that the bayonet was at the period referred to, a clumsy weapon, only available for offence, and opposed by troops using wooden targets was rendered useless, by a well known act of manipulation; but in the hands of a soldier properly trained to its use, no swordsman, however active, could have a chance with him. It would be wiser to advocate a return to the era of pikes. The writer in the *United Service Magazine* should remember they were used in such a combination with fire arms, as he suggests broad swords should be towards the close of the 17th century.

It is evident that infantry drill will be merely simplified; that *object teaching*—peace manœuvres, where the intelligence of the individual must be largely developed, will enter largely into the new tactics. But it is simply nonsense to advocate radical changes in a system that has been far more, severely and extensively tried and successfully too, than the Prussian idea.

It would not add materially to the number of our soldiers, to allow officers or non-commissioned officers to cap the rank and

file at their own good pleasure, nor would it make better soldiers of them if every man was an accomplished tactician or a distinguished linguist. Our troops must be trained to act as soldiers, and not to fear the consequences, of necessary exposure within the range of accurate shooting.

REVIEWS.

Blackwood for January contains the following articles:—

The Parisians, Book IV.
The issues raised by the Protestant Synod of France.

A True Reformer—Part XI.
Christian Philosophy in England.
The Lost Secret of the Cocoa Group.
Sir Tray—An Arthurian Idyl.
Republished by the LEONARD SCOTT, Publishing Company, 140, Fulton Street, New York

We have to acknowledge the receipt of the *Phrenological Journal* for February.

REMITTANCES Received on Subscription to THE VOLUNTEER REVIEW up to Saturday, the 1st Inst.

ALTON, Ont.—Dr. John K. Riddall	\$2.00
COBURN, Ont.—Ensign John McCaughey	2.00
GLENCOE, Ont.—W. K. Merrifield	2.00
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HEIDELBERG—ON THE TERRACE.

We stood upon the castle's height,
So full of old romances,
The moon above shone clear and bright,
And silvered all our fancies.

The Neckar murmured in its flow,
The woods with dew were weeping,
And, lighting up the depths below,
The quiet town seemed sleeping.

The battlements rose grim and still
In majesty before us,
And floating faintly up the hill,
We heard a student's chorus.

Inspired by the brimming cup,
Their words were wildly ringing;
They sang of love—and I took up
The burden of their singing.

I spoke to you; in sweet surprise
A little while you hovered,
Then in the depths of those gray eyes
Your answer I discovered.

We vowed that while the Neckar's vow
(How low the words were spoken!)
Ran undisturbed these towers below,
Our truth should rest unbroken.

Again beneath these walls I stand,
And here my footsteps linger,
Where once I pressed with loving hand
This token on your finger.

But now the well-loved view I see,
Its old enchantment misses;
The evening breeze sighs back to me
The shadows of our kisses.

Untired still the Neckar flows
In the soft summer weather,
But last year's leaves and last year's vows
Have flown away together.

W. H. POLLOCK.

THE NEW PRUSSIAN INFANTRY TACTICS

The *Militar Wochenblatt* has an excellent article on this subject, and as it is one with which the minds of all our thinking officers of the present day are occupied, there being a general feeling of dissatisfaction with regard to the system of drill at present carried on by our infantry soldiers, we need offer no apologies for giving a translation of it to our readers:—

"The experience derived from the war of 1870-71 has plainly shown once more the manifest contradiction which exists between several of the tactical formations which we employ on the *champs de manoeuvres*, and those which are really practised under the enemy's fire. It appears that the authorities have come to the determination to banish from the drillground those formations which are considered to be superannuated, or else at the least to confine their use to a small number of settled occasions. This is the first point of view from which it is necessary to regard the instructions recently published, with the object of introducing, as an experiment, new tactical formations in our infantry. The second point of view has been instigated by the recollection of the enormous losses incurred in certain circumstances during the late war; consequently, one has been induced to search for the proper methods by which an attack, especially on open ground, may be made to succeed without too great sacrifices.

"The first paragraphs of the instructions mentioned above meet our approbation, in fact, every intelligent officer has certainly hailed with joy the laying down of the following principles—Within range of the enemy's fire the first line of a brigade, for example, will only present thick swarms of skirmishers and company columns, the employment of compact battalions deployed in line, or

forming a single mass in column will for the future be given up; for it is no longer possible to handle them in this formation—battalion volleys, attacks in battalion column, rallying skirmishers to a particular bugle sound—a prescription particularly unsuited to war—will no longer take place. If one ought, and with justice, to be sparing of that principle which maintains that not a single extra movement should be made on the *champs de manoeuvres*, which would not be employed when under the enemy's immediate fire, it is however incontestible that the execution on the drill ground of complete manoeuvres in formations generally impracticable, is only fit to give false ideas to the young officers and to the men. It would be out of our province to discuss or analyse the utility of these principles put forward as premises, because in this respect the difference of opinion in our army is very small. We will, consequently, pass to the second point of view, viz., to find other formations which will diminish the losses in an attack, whilst at the same time it loses none of its vigour.

"A great deal has been lately written on this subject. One has endeavoured to establish a sort of system to prevent great losses based on the study of what are, and what are not, *zones dangereuses*. In putting altogether on one side the question of finding out whether these investigations are useful, and if this way of looking at the problem is really the right one, it appears to us, however *à propos*, that to have as an end the avoiding losses is not in itself sufficient, and should never take the first place when it is a question of examining a tactical formation; the consideration which ought to precede everything, and which should never be lost sight of in a discussion of this kind, is the manner of attaining that end which one has in view in a combat.

"It is self evident, that bringing your men right up to the enemy with as little loss as possible contributes, though indirectly, to attaining this end. Every innovation, which has been made more particularly during the last twenty years, as, for example, that of advancing to the attack in scattered order instead of in column, has always had the above result for its object, more or less. Nevertheless, the considerations which have preponderated have been those which have a direct influence upon the victory; that is to say, a formation which is a real preparation for fighting, and which is the most favorable to the best action of the firearm, finally, the moral element. Let us see whether, in the new formations, this is everywhere the case.

"In the first place, it appears to us that in the reasons alleged for their being introduced as an experiment, there has been a good deal of exaggeration in carrying the destructive effect of the rifle up to 2000 paces as this distance appears to us much too great.

"The attack of the Prussian Guards upon St. Privat has been often cited as an example of late.

"Although one cannot dispute that it did suffer great losses at a very considerable distance from the enemy's position, nevertheless, one cannot base a tactical system upon one single example of the effect produced by a mass of bullets at every considerable distance, the less as one could find, in this particular case, other causes which would account for these enormous losses; amongst others, exceptionally advantageous positions occupied by the French was undoubtedly the principal one. The greater part of the observations made upon other occasions when the losses were equal to those of the Guard at St. Privat, would show that the

destructive effect of the Chassopôt at distances exceeding 800 to 1000 paces is not really very considerable.

"We do not, therefore, share in the opinion which has served as a base in the motives to which we have alluded above, for transforming the formations in close order into others which are more flexible, although we would make no difficulty in admitting that certain cases have their exception, and that troops marching to the attack would be often inconvenienced by the enemy's fire at beyond 800 to 100 paces. regard must therefore be had not to those exceptional cases, but to the men of those which are most generally common in the practice of war.

"It is with the preconceived idea that one would suffer severe losses at great distances that the proposition has evidently been advocated of advancing in long thin lines, or in breaking up the smallest tactical unit, the company and even sometimes the subdivision, the whole preceded by strong lines of skirmishers, and we have acknowledged above that their employment was absolutely necessary. These formations can certainly only be employed when it is necessary to make a front attack, and upon ground at once flat and uncovered. Let us examine up to what point they answer the conditions cited above, that is, whether they permit of the troops manoeuvring easily, or whether they facilitate their instant readiness for fighting without bringing any injury to the moral element.

"Let us commence with the formation of the line of skirmishers immediately in contact with the enemy. According to one of the propositions, this first line should be followed by a second line of skirmishers.

"In one part of the army no clear idea appears to have been come to as to the significance of the second line.

"It has been allowed that it was impossible to keep the supports close to the skirmishers who are being engaged, when the ground does not offer sufficient shelter. Nevertheless one does not wish to lose a support placed at a short distance behind, and, consequently, it is made to follow in scattered order. It is evident that, under similar conditions, this second chain of skirmishers will suffer less than a subdivision in close order. On the other hand, the commanding officer has no longer his men in hand even before the moment has arrived when they are actually to be employed as skirmishers, an inconvenience which is likely to become the greater nowadays, since the dispersion caused by the phases of the combat is already quite great enough without that. The commanding officer has already dispersed his forces to a certain extent, and it becomes very difficult to make the support—which performs the part of reserve with regard to the line of skirmishers—serve every eventuality which may arise.

"In this manner it can be employed hardly anything else except for directly reinforcing the first line of fire by doubling it. But let us suppose for example that the enemy suddenly makes an attack upon one of the flanks. If the support has remained compact it has only to change front and then deploy to offer a front to the enemy, which it can rapidly carry out; on the contrary, a similar movement would be almost an impossibility if the support formed a second chain of skirmishers. There is no doubt that in introducing the innovation, a view was had to the support of the second line, simply by doubling it. If we were rightly informed, this doubling ought to take place from that moment when the first line of skirmishers

are engaged. But then the object which is proposed is no longer attained, viz., the avoiding bringing subdivisions in close order within the zone where the enemy's bullets will have full effect, whilst it is then necessary that a support in compact order the third subdivision of the company, must take up a position behind the line of skirmishers thus reinforced. Moreover, it is doubtful if, with a trajectory as flat as that of the arms now in use, a second line of skirmishers marching one hundred and fifty paces in rear of the one in front of it, would not suffer in most cases just as severely as a support formed into column of sections and skilfully handled. Besides this we must call attention to this fact, that in will be extremely difficult for young soldiers as soon as the first line shall have become engaged in firing, to abstain from firing in the second line, which would certainly cause no slight confusion in the former.

"The practice of doubling the lines of attack appears to us in every case a necessary measure. It is a thing which is so often inevitable in war that soldiers ought to be invariably accustomed to it in peace time. It must be practiced on the *champ de manœuvres*, as we have already so often advocated, and upon a much larger scale than has hitherto been the case, having in view, at the same time, the end of habituating the soldier to obey other officers than his own immediate ones. It was in this that we were so often wanting in the great battles of 1870-71. The cause which made it frequently so difficult to handle the groups of skirmishers mixed up with one another may be attributed to the troops failing to obey officers not immediately their own.

"We say frankly, that to obtain this result is of more importance than the practice of all the new formations. It is self evident that when the fight begins to assume a serious aspect it is necessary to keep the men as much as possible under the orders of their immediate commanding officers, for mixing them is never anything but a *pis aller*, even when it becomes inevitable.

"As far as we can make out, the motives which have governed the introduction of the new formations, recommended as the essential for the fighting of skirmishers in the open the suddenly throwing forward strong swarms of skirmishers whilst in broken ground the skirmishing is confined to groups.

"With regard to this subject, we shall add remarks worthy of consideration in a work recently published by the Bavarian Captain von Hoffman—'The Storm as a Formation for Fighting.' Advancing in large numbers is a most admirable manoeuvre; on the drillground, advancing to attack with the bayonet at the double may be practically carried out. However, with regard to what actually takes place in war, it must be remarked that very often the attack at the double could not take place, owing to the exhaustion of the men, or because the standing crops would render it simply impossible; consequently, subdivisions in close order and lines of skirmishers should continue to practise advancing at the ordinary pace.

"The subdivisions forming the support follow in close column of sections. This formation has all the disadvantages of the second line of skirmishers, and none of its questionable advantages. The officers losses the direction of subdivision without finding an equivalent. One section is nothing in close column. The personnel of our non-commissioned officers is not qualified to di-

rect or keep up a subdivision thus split up into small fragments. The effect of artillery would—according to the officers of that arm—be more destructive, most probably because these groups, scattered over the battle-field, would present such a number of targets that the splinters from every shell would take effect.

"With regard to breaking the company of support up into subdivisions, at the moment when the line of skirmishers attacks, it is a manoeuvre proportionately liable to the same disadvantages, and which does not give for a bayonet attack a sufficient breadth of front.

"Supports formed by one of the flanks. There is no doubt that this formation presents advantages against a fire coming from the front; on the other hand, however, an oblique fire would be so much the more dangerous.

"If a small front is presented to artillery fire, it can be compensated by taking advantage of the depth. In admitting, however, that the losses are really smaller, this little advantage is largely made up by other and greater disadvantages. The subdivision marching by one of the flanks is never ready to fight at any moment, it must first form line, and this often takes up too much time. The influence of the commanding officer is diminished; marching at the head of this long string of men, he is no longer seen by them, and reciprocally, he can no longer have them in hand as before. Weakness and cowardice will have greater opportunities for exhibiting themselves. A subdivision formed in line or in column of sections, we recommend heartily: this latter formation obtains cover easier owing to inequalities in the ground, than a subdivision formed up to a flank. For finally, in examining all these propositions, we must not think of looking upon flat ground in the light of a level floor. How often would one have to traverse a space perfectly level in advancing to an attack? One would be wise in every case to avoid it as much as possible. And how often is it not the case, that ground, which appeared as flat as the hand before one came up to it, was found to be intersected with very sensible depressions when one had got on it."

During the artillery experiment at Calais, under the direction of Colonel de Montluisant, other experiments of the same kind are to be commenced at Fribes under the orders of General Aubac. Colonel de Reffyo is sent to this locality by the President of the Republic to take part in these trials in which the experiments of Trouville will be renewed. Finally, a special experiment commission, ordered at Bourges, will commence operations on the 1st January. These comparative trials carried on at three separate places in France will be continued till the spring. By that time, the *Paris* says, all the elements necessary to enable a definitive judgment to be come to in regard to the gun of the future will have been obtained.

The *Berlinische Zeitschrift* states that the Danish Minister of Marine and War, Herr Haffner, has tendered his resignation, and that Colonel; Thomson will be entrusted with his portfolio. The official paper denies the change to be of any political importance. It has, notwithstanding, caused considerable sensation, as a new bill upon army organization is shortly expected to be brought into the Diet.

RUSSIAN ARTILLERY AT THE MOSCOW EXHIBITION.

The *Invalide Russe* has inserted in its columns a series of most interesting articles on the different groups now being exhibited in the military section of the Moscow Exhibition, and we propose, with the aid of our well-known French contemporary, the *Revue Militaire de l'Etranger*, to give an account of that formed by the Artillery.

For several years Russia has made enormous sacrifices in favor of her military establishments, and more especially for those of the Artillery. The founderies, manufactories of arms and of gunpowder have been greatly deployed. The object proposed by the organizers of the exhibition was to show the successive progress made by the national industry, and to exhibit the actual process employed in the manufacture. Consequently a large part had to be reserved for the manufactures of the State in which one can follow step by step the progress accomplished by science, and which in consequence may serve as models for private industry.

The Artillery exhibition comprises two distinct portions—the one, an actual museum of arms, shows the state of the armament at different epochs up to the present day; the second, exclusively reserved for the various Government establishments, enables the visitor to follow in all their various details the different manufactures. The arms are divided into three classes, guns, small arms and side arms. This classification renders the study of each of the divisions easier, and a slight attention will be sufficient to enable us to put together in one group the arms which show the state of the armament at any one particular period.

CANNON.—The cannon which appears at this exhibition are arranged in four groups, corresponding to four different periods. The first extends from the commencement of Artillery until the time of Peter the Great;

The second from Peter the Great to Schuvalow;

The third from Schuvalow until the adoption of rifled guns.

The fourth corresponds to the present day.

First period.—This group is of great interest from an historical point of view, for we find in the cannon of this period—though in a very rudimentary form—the method of loading now in use. It appears that the slow progress of industrial advancement has alone prevented inventors from making a practical application of their ideas. The collecting of all these different objects, scattered in every corner of Russia, presented great difficulties. It was necessary to transport these pieces, to study them; and to make out their history recourse was had to the museum of St Petersburg, but it was also necessary to search the archives of certain towns and monasteries. The oldest of these cannon is not of Russian production. It is of iron, and the fifteenth century is fixed as the date of its origin. It was found in 1852 at the bottom of the sea near the coast of Denmark. It is a breech-loader, and rests upon a piece of wood, which serves as the carriage. It is about 1.25 metres in length and its calibre is four inches.

By the side of this piece there is a bronze of calverin of Prussian origin, dating about the end of the fifteenth century. It is a breech-loader, and have no trunnions; its length, without the butt, is 1.87 metres and it throws a two pound ball. This piece may be looked upon as one of the first cast in Russia, and it is attributed to an Italian artist, Aristotle Fioravanti.

Without stopping any longer to consider the bronze pieces of this epoch, we now come to the iron culverins, of which one deserves particular attention. It is loaded by the breech, its calibre is four centimètres, and its length is 4.90 mètres, or 109 calibres. In giving it this great length, the designer no doubt thought that he would obtain a considerable increase of its range. Unfortunately the breech mechanism is wanting; but as far as one can judge from the arrangement of the opening for it, it must have been very complicated, and somewhat similar to the actual wedge system. Another iron piece, but more finished than the one just mentioned, has got its breech apparatus. It consists of a moveable chamber, which is lodged in the bore, and is kept in its place by means of a wedge. This piece was found in the Island of Hortitz, in the Dnieper. Most probably it formed part of the armament of the vessel which defended the passage of the river.

Several other iron culverins are also exhibited, which show the great improvements which have been effected in the manufacture of a metal which even in our day we find so difficult to handle in the manufacture of artillery. Amongst the pieces of the sixteenth century, we find prototypes of the mitrailleuses of the present day. They are of different natures. Some consist of several cannon arranged like the spokes of a wheel, and moving round a horizontal axis. In others, small mortars are arranged in rows one above the other, on a large sort of general bed, or they are placed in a circle and moved round an axis.

Among the cannon of the seventeenth century there is one of bronze, which is rifled and is loaded at the breech. This piece, which dates from the reign of Michael Feodorowitch, refutes the idea prevalent amongst the English that the first rifled piece dates from the middle of the eighteenth century, and was made in England.

The dimensions of this gun are nearly similar to those of the present day. The breech closing arrangements, which unfortunately is no longer in existence, was adjusted with care. The calibre of the chamber was slightly larger than that of the bore. There are traces of five vents. These vents are spiked, which proves that the piece has been actually used.

Two other rifled pieces of iron must also be noticed, which date from the reign of Alexis Michaelowitch.

The greater part of these culverins have a calibre of from four to six centimètres; they have sixteen grooves, the section of their helix being semicircular, making one turn in 1.80 mètres, or about six feet; they are remarkable for the finish of their work.

Besides these and other iron pieces, we find amongst the guns of the seventeenth century there are both bronze and cast iron smooth-bore guns loading at the muzzle. The cast-iron guns and mortars are of small calibre, whilst those of bronze are of large and small calibre, and ornamented with inscriptions and chasings.

Second Period.—Upon the accession of Peter the Great, the chaos which had hitherto existed in the calibres, and the construction of artillery ceased, and made way for a regular organisation.

Fantastic inventions were laid aside, it was endeavoured to assimilate the different calibres, and above all to render the artillery capable of following the movements of infantry and cavalry.

With this in view, the loss of all the old Russian Artillery at the battle of Narva may be considered as a blessing. After this defeat, Peter, who reorganised his artillery, de-

cidated on the following calibres for them, viz., 12lbs., 6lbs., and half pound (8lbs.) He did did away with howitzers, and replaced them with unicorns, which he made as light as possible, in order to give them more mobility. It was also at this time that horse artillery made its first appearance, pieces being attached to dragoon regiments. At the same time the artillery was divided into field artillery, garrison artillery, and artillery of position.

Unfortunately the guns of this armament have almost entirely disappeared. The Exhibition only possesses a few bronze field pieces and three iron guns of position. Some guns dating from the first half of the eighteenth century are however exhibited, which are remarkable for their construction, but which formed no part of the regular armament—for instance, a 3 pounder of damascened iron, a muzzle loader, and constructed in 1709 by the workmen of Ioula. This piece is inlaid with silver ornaments and the way in which it is finished speaks very highly for the brilliant state to which working in iron had been brought in the eighteenth century at Ioula. By the side of this piece there is another one, a 4 pounder, even more elaborately ornamented, which was also made at Ioula during the reign of Elizabeth.

Amongst the pieces we have just mentioned there is one of bronze, presenting the appearance of an immense revolver. It is placed upon a carriage of primitive construction, and weighs fifty two kilogrammes.

It is supposed that this model owes its origin to Sicily, and this was the subject of a correspondence between Peter the Great and the Prince Kourakine, his ambassador in Paris, and of which he speaks as being an most interesting novelty.

Third Period.—From the time of Peter the Great to that of Elizabeth the Artillery experienced no fundamental modification, but on Schuwalow's being nominated to the post of Master-General of the Ordnance a series of reforms was commenced, of which he was personally the promoter and organiser, but which did not realise the expectations which he had formed.

The howitzers, called after him, the construction of which was kept secret, and bell-shaped field pieces called "Bluzniat," were amongst those which he introduced. The pieces of this nature in the Exhibition enable us to become acquainted with these engines of war, whose reign, however, was ephemeral. One show howitzer, of which the metal is of very second-rate quality, but whose interior shows remarkable finish, is especially noticeable. On the breech the following inscription is engraved—

"This piece was proved, examined, and fired in 1753, before the College of War and the 'généralité,' and was considered better than all the others pieces hitherto used against the enemy." After death of their originator all these inventions were laid aside, but, nevertheless, to Schuwalow is still due the merit of having lightened the material, of having introduced unicorn mortars, "licarnes," which have been preserved up to the present day.

During the reign of Paul I. the field-pieces were made still lighter, and their carriages were lightened; and lastly, in the time of Alexander I. the Artillery received the organisation which it retained, with some slight changes, during the whole of the reign of Nicholas I.

Fourth Period.—In order to represent at the exhibition the present state of the Artillery, a piece, representing each of the actual calibres now in use has been sent.

We find three field-pieces.

- 1st. The rifled canon de 9, breech loader.
 - 2nd. The rifled canon de 4, breech loader.
 - 3rd. The Gatling gun,
- Three siege-pieces.
- 1st. The 6-inch rifled mortar, breech loading.
 - 2nd. The cast iron rifled canon de 2 breech loading.
 - 3rd. The 9 inch rifled stool gun, breech loading.

Last of all the mountain gun, which is a rifled breech-loading canon de 3.

Amongst the objects which should be more particularly noticed is the 6 inch mortar and its carriage, the design of Colonel Semenow of the artillery of the Guard. Its carriage is made of plate-iron, and by no means of a pinion which works on a toothed are fixed under the piece, a depression of five degrees can be given to it.

The 9 inch steel gun should also be noticed; the breech is reinforced by two steel rings struck on, and the breech is closed on the Trouille de Beauve system. This piece was constructed at the Form steel foundry and weighs about 14,500 kilos. Its carriage, also of iron, is like the preceding one from the design of Colonel Semenow. This carriage is supplied with compressors, by means of which the recoil is checked, as with a charge of 52lbs. of powder it would be too great. All the visitors stop before this piece and regard with astonishment the effect produced upon iron armour plates eleven inches thick, which are either pierced or broken.

From a technical point of view we cannot pass over the mountain gun de 3, which is one of the first specimens of phosphoric bronze casting. The resistance of this metal and its homogeneity greatly surpass those of ordinary bronze. Thus in the comparative experiments, the gun of ordinary bronze burst when the bore had been subjected to a pressure of 2,250 atmospheres, whilst the one of phosphoric bronze was only greatly bulged under the same amount of pressure, and was afterwards fired twice without bursting.

With the ordinary charge the normal pressure is only 400 atmospheres for the mountain gun.

Amongst the projectiles we notice one recently introduced, called the "Scharoch," of which the front, which is spherical in shape detaches itself at the moment of explosion, and acts as a bullet.

The Bill on the Recruiting of the Italian Army, submitted to the Chamber Deputies by Signor Ricotti, proved that all the citizens shall be personally liable to military service from their eighteenth to their fortieth year. The contingent, to be levied annually, is to be divided into three categories, of which the first and second would comprise those persons who are to serve successively in the permanent army, the mobilised militia, and the sedentary militia. The third category would include those who are incribed on the recruiting lists, but who, from family considerations, are dispensed from service in the permanent army and the mobilised militia. The system of one year's volunteers will be maintained. The bill comprises regulations respecting the recruitment of students who have been sent home on leave as well as other matters of local interest.

Contrary to information given by the Naples journals, the war ships *Vedetta* and *Governolo* have not gone to Borneo, but to the Red Sea on a voyage of instruction and commercial interest. They will probably proceed to the East Indies.