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Prepare for the Parliament.

Another session of Parliament being near at hand, now is the time for the militia officers—and militia men too, for that matter—to remind their parliamentary representatives of the needs of the force in each particular district, or in the country generally, so that the legislator may enter upon his sessional duties with a clear understanding of the grievances and the desires of this important element in his constituency. We say important, because it should be so in every sense, if it is not. The members of the force as such take no part in politics, but as citizens it is their duty to exert every legitimate influence to further the interests of the body in which they serve, and their sons after them may be expected to serve, in the country's defence.

There is a blue book called the Annual Report of the Militia Department. This volume contains every year a mass of criticism, suggestion and recommendations from the skilled officers holding the highest positions in the force. It is not printed for the use of the Minister. He has the opportunity of seeing the contents before they get into print. The Report is printed really for the information of the Minister's master the Parliament, and for the information of the Parliament's master, the People. Being called upon to pay the salaries of the high military officers whose recommendations form part of these Annual Reports, the People have a right to be told year by year whether these recommendations are or are not to be given effect to; and if not, then the reason for ignoring the professional advice. The proper way to elicit the information is by means of questions asked upon the floor of Parliament. These should not be put in any hostile spirit, but with the sole desire to have the Minister state to the House, in the fullest detail, the true state of the affairs of his department. He should have nothing to hide; he should, and no doubt does, court the fullest investigation. If there is to be criticism of the Government's treatment of the militia, let it be made with the responsibility attaching to the utterances of a Member of Parliament, and in a place where it can be authoritatively met or answered by the Government, or by the Minister having charge of that department.

Our advice then to militiamen throughout the country is to get local members at work upon the Militia Report for 1887; they need not wait for that of 1888 to appear. Let them study up its contents, and learn—if not being military men they do not at once comprehend—the significance of what is seen there. Impress it upon them that the welfare of the militia deserves some little attention in the House other than when, towards the close of the session, the estimates are being rushed through. The subject should be introduced at the very beginning, when the House sits for an hour or less a day for want presumably of something to talk about. In the past it has been too often the case that Parliament has

taken no notice whatever of the recommendations of the Reports and the failure to give effect to them. The militia throughout the country have it in their power to see that a new practice is introduced.

Col. Rhodes, of Quebec, who has just been chosen by Premier Mercier as Commissioner of Agriculture for Quebec, was born in Yorkshire in 1824, his father being Capt. Rhodes, of the 19th Light infantry. He was educated in France and came to Canada in 1844 as an officer of the 68th Regiment. When he retired from the army he settled in Quebec, joining the militia with rank of Lieutenant-Colonel, when he had married Miss Dunn, of that city. Col. Rhodes will seek election in Megantic, the date of the contest being fixed at the 27th inst.

A feature of the Christmas number of the Brantford *Telegram* is a sketch of the history of the 38th Battalion, Dufferin Rifles of Canada, a smart organization not without due appreciation in Brantford and vicinity. Two illustrations appear with the sketch; one the special regimental badge, bearing with the title "Dufferin Rifles" the crest and motto of the Earl of Dufferin, by the special permission of His Lordship when Governor-General of Canada. The other illustration is an excellent portrait of the popular commanding officer, Col. C. S. Jones, and constituting one of the handsomest features of the decidedly handsome Christmas number.

Delay in deciding upon the form of cartridge to be used will postpone the distribution of the Lee repeater to the English army for some time. The Secretary of State for War in a recent address at a public meeting said the pattern of the new magazine rifle had been decided upon, and before long he hoped to issue to the army a rifle which it was believed was superior to any rifle now in course of manufacture by any foreign country. The Government, too, saw their way to the early introduction of a high explosive for the use of big guns, the destructive effects of which were described to him as extraordinary.

In concluding lately a series of articles in the *Chicago Times*, on "Implements of War," Lieut. Philip Reade, U.S.A., said: "The conservatism that clings to officers in the matter of change of armament, even of ammunition, is no new thing. It took hundreds of years to enable gunpowder weapons to supersede the pike, the cross bow and the long bow. The percussion cap was scouted by Gen. Winfield Scott and other veterans who were used to the flint lock. In 1861 our chief of ordnance, Gen. James W. Ripley, protested against the purchase of any more metallic cartridges and breech loaders. Gov. Jeremiah Rusk of Wisconsin, is quoted as believing that the surviving members of the Grand Army of the Republic are able to—as in 1861-1865—defeat any enemy that the world can array against them, however armed with accurate shooting rifles. New Daniels have come to judgment, however. New facts in the laws of projectiles have been discovered. New propositions have been evolved, and new corollaries have arisen from them. It is conceded that we must have coast defences. Let those who have that matter in charge struggle to its success. The need for exhaustive experiment in order to the development of the highest power in the best modern military rifle is equally great."

The Naval and Military Resources of the Colonies.—IV.

[By Robert O'Byrne, F.R.G.S., in A. & H. G. Gazette.]

Having dealt with Victoria and New South Wales, as the two greatest of our Australian resources, we now proceed to discuss, as next in importance, our Native Army in India. When it is remembered that this force has served us so faithfully and loyally, not only in our many Indian wars, but in many parts of the world, notably in Sir David Baird's expedition to Egypt, Bourbon, Seringapatam, Besi-Boo-Aki, Scinde, Aden, China, Persia, Abyssinia, and again in Egypt under Lord Wolseley, and again recently in Burmah, we may well congratulate ourselves that in the deeply-to-be desired consolidation of Imperial Federation we shall find here much to be thankful for and to be proud of.

From a lecture delivered on a recent occasion at the Royal United Service Institution by Major-Gen. J. F. H. Gordon, C.B., of the Bengal Staff Corps, we gather the following interesting facts connected with our Native Bengal Army:—

This army consists, as it appears, of twenty-four regiments of Cavalry, sixty-four battalions of Infantry, a corps of sappers and miners, and four mountain batteries of artillery. This is inclusive of the Punjab Frontier Force, which has recently been transferred from the administration of the Government of the Punjab to the authority of the commander-in-chief, but continues as a separate unit for frontier duties, and retains its local and distinctive character. It has a strength of four regiments of cavalry, a corps of guides (one regiment cavalry, one battalion infantry), four batteries mountain artillery, and eleven battalions of infantry. In addition there are also six regiments of cavalry, twelve battalions of infantry, comprising the Hyderabad contingent, the Central India horse, and local corps in Rajputana and Central India. With the exception of the Central India horse they are all organized on the old irregular systems, with two to four British officers to each corps.

Two-thirds of the Bengal Army are recruits from Northern India and Nepal, and one-third from the North-West Provinces. Many diverse and warlike races are scattered over this vast area. The chief among them are the Hindoo classes of the Sikh and the Dogra Rajput of the Punjab, the Gurkha of Nepal, and the Brahmin, Rajput, Jat, and other Hindoo classes of the North-West, while of the Mahomedans there are the Pathan border tribes of Northern India, the Punjabi and the Hindoostani classes. All are of the peasantry class, of good physique, hardy, enduring, and courageous. There is no lack of them. The military spirit still lives among them. Our service is popular, and they come forward freely to enlist. Indian history shows what good soldiers Hindoostanis have proved themselves in many brilliant actions against warlike enemies in vastly superior numbers. We know with what courage and honesty the old Sikh Army, composed of natives of the Punjab, fought us in two campaigns, and at what cost we secured victory. The Pathan, the Gurkha, and the Jat have fought gallantly against us, and as gallantly for us. Our stoutest foes have become our strongest friends, and flock to fill our ranks. The regiments have a provincial rather than a territorial character. Some are formed wholly of one class or race, and are called class regiments, but the majority are composed of mixed classes, organized in separate troops and companies, and called class troops or company regiments.

Of the twenty-four Cavalry regiments from the North-West Provinces, and fifteen from the provinces of the Punjab, five are class regiments, and nineteen have class troops. The class regiments are the Bengal cavalry (Mahomedan), the 14th Jats (Hindoo), the 15th Mooltanni Mahomedan, the 16th Sikhs and Dogra (Hindoo), and 17th Punjab (Mahomedan).

Of the sixty-four infantry battalions, thirty-one recruit from the Punjab, thirteen from Nepal, and twenty from the North-West Provinces. Of these twenty-two are class battalions, and forty-two have class companies. The class battalions comprise thirteen of Gurkhas, five of Sikhs, one of Dogras, and three of Muzbis (Punjab pioneers).

The Sappers have class companies, and recruit in Hindoostan and the Punjab. The mountain batteries recruit from Punjab.

The cavalry regiments are numbered from 1st to 19th Bengal cavalry, 1st, 2nd, 3rd, 5th, Punjab cavalry. Seven of the Bengal cavalry are Lancers.

Each regiment consists of eight troops, organized in four squadrons, and has a complement of nine British officers, viz., the commandant, four squadron commanders, and four squadron officers, one of the latter being Adjutant. It has a strength of 625 natives of all ranks, viz., four Ressaldars, four Ressaidars, one Woordie Major (native adjutant), eight Jemadars, eight Koti Duffadars, fifty-six Duffadars, eight Trumpeters, 536 Sowars. One of the Ressaldars has the rank of Ressaldar-Major, which makes him the senior native officer.

The infantry regiments are numbered 1st to 45th Bengal Infantry, 1st to 5th Gurkha Regiments of two battalions each, 1st to 4th Sikh Infantry, 1st to 6th Punjab Infantry. Each battalion consists of eight

companies, organized in two wings or half-battalions, and has a complement of eight British officers, viz., the commandant, two wing commanders, and five wing officers, two of the latter being adjutant and quartermaster. It has a strength of 912 natives of all ranks, viz., eight Subadars, eight Jemadars, forty Havildars, forty Naicks, sixteen drummers, 800 privates. One of the Subadars has the rank of Subadar-Major, and one of the Jemadars is native adjutant.

The corps of Guides of the Punjab Frontier Force consists of six troops of cavalry and eight companies of infantry, under one commandant. It has a complement of fourteen British officers, and a strength of 1,381 natives of all ranks organized on the same system as cavalry and infantry regiments.

The corps of Bengal Sappers and Miners consists of eight companies, viz., six service companies; A Depot company—specially for bridging, telegraphs, submarine mining, field printing, and photographic services; B Depot company—recruits; Commandant, Adjutant, Superintendent of Park, Superintendent of Instruction, 8 company commanders, 8 company officers, 1 warrant officer attached to the Park, 1 Sergeant-Major, 1 Quartermaster-Sergeant, 12 sergeants, 14 Corporals, 14 Second Corporals of the Royal Engineers, and 8 Subadars, 16 Jemadars, 48 Havildars, 80 Naicks, 1,200 Sappers, 16 Buglers, making a total of 1,331 natives of all ranks.

Each mountain battery of six mountain guns has a complement of four British officers from the Royal Artillery attached to it, viz., a commandant and 3 subalterns, and a strength of 3 native officers, 98 gunners, and n.c.o., and 138 drivers.

A British medical officer with a native hospital establishment is attached to each regiment.

We should like very much to go into the interior economy of each regiment, its equipments, reserves, pensions, rewards and decorations, but our limits will not admit of this; we therefore pass on at once to the Madras Army, taking our facts from the evidence of Major J. Michael, C.S.I., Madras S.C., late Secretary to Government, Military Department, Madras.

From this officer, we gather, historically, that the town of Madras was founded by the servants of the East India Company in 1639, and the first Fort St. George built in the following year. Although the merchants employed armed retainers, known as "Topassas and Misticas" to the old writers, for the protection of their factories, it was not until about a century later, viz., in 1726, that any attempt was made to raise and organize troops. England was then at war with France, and in this year Madras was besieged, and capitulated to the French.

The local British Government of the day, having been compelled by this disaster to betake itself to its other settlement—Fort St. David, near Cuddalore, on the Coromandel Coast—began to entertain forces for the maintenance of its position against the French. These forces seem, however, to have possessed but little organization, and were armed with matchlocks, bows and arrows, spears, &c.; but they served their purpose, supplemented by Topassas, a half-caste Portugese, negroes and, Arabs hired from Bombay, Rajpoots, Hindoostans, and any fighting men that could be picked up.

At first these levies were composed entirely of such foreigners, and it was not till 1758, when most of the troops, which had been sent on a sudden emergency to Bengal with Clive, were still absent, and another collision with the French was imminent in South India, that the Madras Government began to raise regiments composed of the inhabitants of the Carnatic. In this way the present Madras Sepoy force came into existence.

Colonel Wilson, in his history of the Madras Army, tells us that the Sepoys thus raised were formed into regular companies of 100 men each, with a due proportion of native officers, Havildars, Naicks, &c., and that some sound rules were established for their pay and promotion.

(To be continued.)

So the cuirass is doomed, moralizes the *United Service Gazette*, and not without a reason. "The value of a weapon—and we consider here the cuirass as a defensive weapon—does not consist merely in its material power, but its value increases or diminishes according as it inspires more or less confidence in those who use it, and more or less fear in those who are menaced by it. It is the moral value of the weapon. In days gone by, when firearms were in their infancy, or at most in their childhood, in the days of the flint lock or the muzzle loader, a musket ball was seldom known to pierce a breastplate and kill its wearer, who, thus considering himself almost invulnerable, rushed to the charge and bore down his opponents with the audacity inspired by confidence. The foot soldier, armed with the musket, felt himself at a disadvantage against this foe, on whose shining plate-scales his bullet would flatten and his bayonet turn aside. But those days are gone by."

Correspondence.

[This paper does not necessarily share the views expressed in correspondence published in its columns, the use of which is freely granted to writers on topics of interest to the militia.]

THE INFANTRY SCHOOL FOR QUEBEC.

EDITOR MILITIA GAZETTE,—I have been much pleased to see that you have urged the removal to Montreal of the Infantry School now stationed at St. Johns. To the readers of the *St. Johns News*, the school may have been a "gratifying success," but certainly those outside that very limited circle would hail its removal to Montreal as a step—and a long step—in the direction of making the school of practical use; this it can claim at present only in a very limited sense. If it be necessary to keep the school at St. Johns, let the old Board of Examiners be resuscitated so that our officers have an opportunity of passing their examinations and obtaining their certificates without wasting two or three months away from their business. It is well known that those best adapted for the role of officers of volunteer battalions, especially in the cities, are men who cannot afford to spend even the shortest term of ten days away from their secular occupation, and though they may be perfectly well up in their drill, having plenty of time in the evenings, are debarred from joining or remaining in the force. At present all the city corps are suffering from vacancies on the roll of officers, and this altogether because men otherwise eligible and willing to join cannot do so, under the existing regulations, with the school at St. Johns. At the same time there is not the slightest doubt that at least as large a number of officers from outside corps would attend the school were it in this city.

Were it possible to obtain the sense of all the commanding officers of the province, I believe there is no doubt that scarcely one outside of the charmed circle of the *St. Johns News* would not favour the removal of the school to Montreal.

MAJOR.

Montreal, 8th December 1888.

Regimental Notes.

Lt.-Col. Smith, Deputy Adjutant General of Military District No. 1, Ontario, is anxious that volunteer officers commanding companies should get up their work during the ensuing winter months, so that they may be better able to perform their various duties at the training camp next year. A memorandum to that effect has been sent through the Colonels of the various battalions in the district to the officers in command of companies under them. It says those who can make time to attend a school of instruction should do so if they wish to occupy a reasonably creditable position in the force.

The Montreal troop of Cavalry last week went through their annual drill in a very creditable manner under Capt. McArthur and Lieut. Clark. The galleries of the drill hall were filled with a large company including several ladies. Lieut.-Col. Houghton, D.A.G., inspected the troop, and was accompanied by Lieut.-Col. Mattice, B. M. Amongst the officers of other corps present were Lieut.-Cols. Massey, Turnbull, Gardner, Major Radiger, Capt. Hood, Pettigrew, Esmond and Ross, and Lieuts. Shaw, Shorey and Kemp. The sword exercise was particularly good and the men were complimented on their appearance by the inspecting officer.

A Whitby despatch of the 5th inst. says: "The drill shed here is in a bad state of repair and the management of the South Ontario and Durham Exhibition Association have been interrogating the Minister of Militia with the view, since the structure will soon have to be probably rebuilt, to have it removed to the fine new fair grounds, consisting of 25 acres, part beautifully wooded, and with many stables, sheds and other improvements that would make the place suitable for a large military camp. Lieut.-Col. Otter, Deputy Adjutant-General, having been deputed by Sir Adolphe Caron to investigate and report upon the matter, ran down from Toronto on the afternoon train and paid a visit of inspection to the new fair grounds. He was met at the station by Lieut.-Colonel O'Donovan, of the local battalion, the gallant 34th; Mr. John Miller, of Thistle Ha', Pickering, the well-known president of the Exhibition Association, and Wm. Smith, M. P. for South Ontario. The party drove to the grounds. There had gathered Major Long, Postmaster Howden, Directors Wm. Beith, A. A. Post, James Willis, Wm. Anderson, D. C. Downey and Secretary W. R. Howse, of the Exhibition Association, and a number of citizens interested in the successful continuance and improvement of Whitby's Central Fair. The visiting military gentleman was delighted, and intimated that he would report favourably upon the proposition of the Exhibition Association, which is upon receiving a grant of \$1,000 from the Government to undertake to move the drill shed and put it in first-rate order in the new exhibition grounds. Col. Otter expressed himself as much pleased with the extensive grounds and surroundings as a site for the district camp, Whitby being much more centrally situated than Kingston."

Toronto.

The Queen's Own Rifles furnished a guard of honour on Friday evening (30th ult.) to His Excellency the Governor-General on the occasion of his attending the St. Andrew's Society ball at the pavilion. The following was the detail: A Co. 12 men, B 10, C 8, D 12, E 12, F 10, G 10, H 10, I 8, K 10. Total 102, but 116 men put in an appearance. Busbies and great coats were worn. Capt. McGee was in command, with Lieuts. Mercer and Rennie as subalterns. Arriving at the gardens, the guard was drawn up in open order, and, after waiting five or ten minutes, whilst the chill November wind blew gently through the whiskers of those possessing such hirsute adornments, received His Excellency with a royal salute, the band playing the national anthem. The tramp back to the shed through the mud was highly enjoyable, but, taken as a whole, the evening's proceedings were not of a wildly exciting nature.

Says the *World*: Col. Gray, District Paymaster and Superintendent of militia stores, was in Cayuga Saturday, turning over the stores of the 47th battalion to the successor of Capt. Wm. Mussin. The Colonel while standing in the village street, was accosted by a tall, gaunt farmer of Haldimand, who stood admiring his gorgeous uniform. Said the stranger: "Say, mister, what *band* do you belong to?" The Colonel, who draws the line at being mistaken for a bandsman, almost fainted.

KUNE SOHN.

The Canadian Route to the East.

The leading shipbuilders in the country have submitted to the Canadian Pacific Company offers for the construction of three large and speedy screw steamers for what is now known as the Empire Route to the East *via* Canada. It is proposed to end the Atlantic journey at Halifax in the winter time and possibly Quebec in the summer season, and that thence a voyager will cross the continent on the Canadian Pacific Railway to Vancouver, and from that point sail to Australia, China, or Japan. It is for the Pacific route that the new steamers are intended. Much that is controversial has been written on the various routes to the East, and without desiring to enter into this controversy it may be interesting to indicate briefly what is claimed for the Empire route since it has in a measure forced itself before the engineering public. To the patriot the fact that he does not sight foreign land may be a consideration. The route follows practically a circle, or travels at latitudes where degrees of longitude are shortest; the seas crossed are cool—an advantage to the marine engineer—and free from monsoons and tropical cyclones; and 2,500 miles are overland. With shorter sea passage and coal-fields at or near Halifax, Vancouver, and Sydney, less coals would require to be carried, and thus extra freight money recovered. With Halifax only 2,400 miles from England, it could be reached in five days, and it has advantages over New York, as there are no shoals. The railway journey, even although the climate is very cold, is rendered pleasant by artificial heating, &c., and again, the Pacific sea voyage is short. The voyage to Japan, *via* Canada, is about $9\frac{1}{4}$ thousand miles, whereas *via* Suez it is $13\frac{3}{4}$ thousand miles, and *via* the Cape $15\frac{1}{2}$. To Shanghai it is $10\frac{1}{2}$ thousand miles, as compared with $12\frac{1}{2}$ thousand miles *via* Suez, $14\frac{1}{4}$ thousand miles *via* the Cape, and 16,000 *via* Cape Horn. Hong-Kong is about equi-distant *via* Canada, and Suez 11,000 miles; $13\frac{1}{2}$ thousand by the Cape, and 16,000 by Cape Horn. Sydney and Auckland are also the same distance by the two steam routes, 12,000 miles, but the latter is only $11\frac{1}{2}$ thousand miles by Cape Horn, and the former $12\frac{3}{4}$, and they are 14 and $13\frac{3}{4}$ thousand miles *via* the Cape. Singapore is 3,000 miles nearer England by the Suez (9,500 miles) than by Canada, but Brisbane is 1,000 miles farther away, the Canadian route being $11\frac{1}{4}$ thousand miles against $12\frac{1}{4}$ *via* Suez. It is therefore patent that to Japan and Shanghai the new route will be the more suitable, and the question of the development of trade with these countries enters into the count. British trade with Japan in a quarter of a century has improved fully 33 per cent., with China 25 per cent., and with Java and the Straits about 130 per cent.; and looking to the prospect of Japan being opened up with railways and telegraphs, there is every likelihood that trade may be further developed. In any case, both the Pacific companies seem to think so, for not only do the Canadian Pacific Company intend building at an early date, but the old Pacific Company are having a fast steamer built at the Fairfield yard on the Clyde, and a couple of similar vessels at Philadelphia.—*Engineering*.

In a letter to the London *Times* Sir Samuel Baker puts forward the theory that the low Nile this year may perhaps be due to the damming of the Akbara, which is the fertilizer of Egypt. This, he states could be done with great ease, as the bed of this river is dry for five months of the year, and by constructing a dam in a suitable position, the course of the river could be deflected towards the Red Sea.

The Employment of Artillery in Masses.

In the last report of the Royal Artillery Institution there is a translation from the *Neue Militarische Blätter*, by Captain E. S. May, R.A., on the above very interesting subject:

When we speak of employing artillery in masses, we mean the concentration of a larger number of pieces than are contained in the tactical units for the attainment of some definite end. Such a method of employing them is no new idea; for neither modern ideas about the fire combat nor modern tactical knowledge are necessary to enable the advantage to be seen that may be derived from the concentration on a single point of many guns, and the heavy losses such a use of the weapon, most effective for destruction, must entail on the particular part of the enemy's position which is chosen for a target. Gustavus Adolphus concentrated his great batteries in action in this very way, and Frederick the Great's endeavours always aimed at a similar handling of his artillery. "The fewer guns brought into action the more human blood has to be spilt." If under the Great King such tactics remained still in their infancy, it was not because their worth was unrecognized, but because the mere technical knowledge of those days did little to aid their development, and prevented their general adoption.

The smooth-bored guns had neither sufficient accuracy nor range to permit of artillery firing over the heads of the infantry on their own side, and positions for artillery had therefore to be selected where they would interfere as little as possible with the infantry advance. Naturally enough, such positions were often only to be found at intervals along the line of battle. Moreover, a certain fixity of position is required to thoroughly develop the advantages of concentration; a position once taken up must not be lightly abandoned. Now, to carry out such tactics successfully, the guns must be possessed of so great a range that, however much the tide of battle may surge to and fro, they need not be in a hurry to change their positions. Yet, although there was seldom space for the employment of his artillery in masses, we observe that Frederick never forgot the fundamental principle of keeping the fire of his guns concentrated as far as possible on one target.

It was not the number of the guns brought together, but the way in which positions were taken up, and the uncompromising way in which the same point of their foe's line was adhered to for a target, that forms the chief characteristic of the handling of Frederick's artillery on the field of battle. They endeavoured to produce a decisive effect by a rapid fire at short ranges. Now, to accomplish this, it was absolutely necessary that the artillery should march near the head of the column, and should be possessed of considerable mobility, and the defeat of Kunersdorf was in a great measure due to the fact that in this respect the guns were still somewhat to seek." In spite, too, of the inevitable and often considerable separation of batteries, we find that in all Frederick's battles almost a concentrated effect was produced. This fact speaks volumes for the intelligence with which they were commanded, though doubtless such good results were only possible under the circumstances in an age where the course of an action might more clearly be foreseen and provided for than now-a-days. The King could pretty well decide beforehand the exact positions his batteries were to take up, and the way in which his attack was made showed tolerably clearly what the course of events would be. When it was known before the battle which of the enemy's flanks was to be assailed, it was not a very difficult matter to bring the artillery early into action against it. Often and often the guns were so exposed in the long preliminary march that against any but an incapable and unenterprising cavalry such a manoeuvre must surely have ended in disaster. (Mollwitz, Rossbach, Leuthen.) During this last battle, where we may also see an excellent example of the celebrated oblique line of battle introduced by the King, there are some interesting phases in the handling of the artillery to be noticed. 1. An early development of a powerful artillery fire against the wing of the opposing infantry selected for attack. 2. The formation of a strong battery to oppose the enemy's artillery (on the Muhlenberg). 3. The advance of the artillery *pari passu* with the infantry. (First of all to Sagschutz, and then to the Muhlenberg). 4. No reserve of artillery is set aside. Rossbach shows in the same way the concentration of eighteen guns into one battery (on the hill of Jaunsberg). The splendid results obtained by the fire of these guns is a feat of arms which is perhaps too little lauded in history, compared at any rate with the much praised deeds of Seydlitz's Cavalry. Had it not been for the confusion they occasioned, although only for a short time, in the enemy's ranks the charge of the Prussian Cavalry would scarcely have been as decisive as it was. The battle of Kunersdorf likewise furnishes an example of the employment of the artillery of that period in masses. At that battle three batteries of about twenty guns posted in somewhat widely separated positions on the Klosterberg, Wachsberg, and Spitzberg, cannonaded the Russian left, which rested on the Muhlenberg,

with excellent effect, especially so in the ease of the battery on the Spitzberg.

The defective organization of Frederick's artillery, however, formed the greatest obstacle to its consistent employment in masses. No regulations on the subject existed, and there were only a few instructions (in their own way, however, quite exceptionally good), which inculcated the pounding of the point of attack with masses of artillery, uniformity of direction; and the formation of an Artillery Reserve. The greater mobility of the "regimental guns," and the unwieldiness of the guns of position prevented these instructions being fully carried out. It is the merit of Napoleon that he succeeded, at any rate to some extent, in getting rid of many difficulties of organization, but the constant wars he was engaged in left him neither time nor leisure for a thorough reorganization of the arm, although he more than once contemplated such an undertaking. In spite of the evil experiences which the French suffered at the commencement of the wars of the Revolution, owing to the defective organization of their artillery already alluded to, they could not bring themselves easily to break away from the old system of artillery attached to a regiment, and at the battle of Pirmaseuz the "regimental" were placed in position between the "position" guns.

Another advance in tactics introduced at this time furnished an additional obstacle to the employment of artillery in masses. The advance to attack in column no longer rendered impossible to decide on the positions for artillery much beforehand, and they had to be taken up as opportunity offered during the development and progress of the action, yet the prompt accomplishment of the orders then given was often impossible owing to the unwieldiness of the pieces. But the nature of the tactics of those days, and the advance of large masses to the battle-field, led Napoleon to employ his artillery in masses too.

"Victory will be his who understands how to bring a great mass of guns into action unexpectedly." His first experiences, however, in a change of organization were by no means agreeable. The combination of different calibres in one battery robbed the divisions of Austerlitz of all their 12-pounders, which had been called together for the formation of one vast battery. The enterprise displayed by the French artillery thus collected in masses during the wars of Napoleon, their advance, as at Friedland, to within the shortest ranges of the enemy, placed them often in very precarious situations, but frequently determined the fortunes of the day, as during their campaigns in Spain. At the battle of Wagram, Lauriston massed 102 French guns between Aderklaa and Breitensee against the Austrian centre to prepare the way for the assault by Macdonald's great column. A new change in artillery organization was the outcome of the experience gained in this battle. Each corps set aside an Artillery Reserve of at least twenty-four pieces in addition to the divisional artillery, and the Artillery of the Guard formed an Artillery Reserve for the whole army. The fire of 102 guns was concentrated against the Bagration entrenchments at Borodino, and 101 guns cannonaded the Rajefski redoubt at the same battle. This battle shows, like that of Waterloo, that a general Artillery Reserve for the whole army is not necessary. It hardly ever is used in mass, and generally acts merely as a reserve from which to replace disabled guns in the front line, as was the case with the French on August 16, 1870.

The chain of epoch-making changes in artillery organization comes to an end with the Napoleonic period. In later years its employment in masses was carried to an excess, and beyond the point its organization rendered desirable. Modern views on the tactical employment of artillery are based on the experiences and lessons of the two greatest masters in the art of war, Frederick the Great and Napoleon. The campaign of 1870-71 was noticeable amongst other things for the decided preference shown by the Germans for the employment of artillery in masses, especially so at the battles of Worth, Mars-la-Tour, Vionville, Gravelotte, and Sedan. Modern views have extended as regards this subject in the directions we will now indicate.

1. It is no longer a matter of cannonading one point of attack, or target, but in the case of a battle in which hundreds of thousands of men may be engaged there will be several points on which it may be necessary to concentrate fire as the progress of the action may dictate.

2. Ranges have considerably increased, and a crossing, oblique, or often even enfilading fire may be concentrated on one target in addition to that from the direct front. Changes of position to cannonade a more distant target which may suddenly appear during the battle's course will be less necessary than formerly; and lastly—

3. The vast increase in the number of guns renders their employment in masses an absolute necessity. Since they cannot fire over one another, the guns must be placed side by side; and since the whole artillery of an army corps must get into position within the front it occupies, which would be about two thousand yards, and as there are about 100 guns with usually twenty paces between each to be provided for, we see that the guns would want nearly as much front as the whole army corps itself requires, and can readily understand how concentration

in masses has become no longer a matter of choice.

It was for this reason that especially in the first battles of the campaign of 1870-71, which were generally the result of no preconceived plan, the whole artillery were often brought into action all together, and at the same moment, in order to extricate the advanced guard who had pushed forward in too head-long a fashion, and to allow the main body to come up in well-organised formation.

There are, however, many difficulties in store for the commanding officers of the Artillery which is thus to be massed: 1. The heavy fire renders the issue and understanding of orders at a distance difficult. 2. It is hard to ensure good practice, as it is not easy to distinguish the effects of one's own shells from those of a neighbouring battery, which is very likely firing at precisely the same target. 3. It is often difficult to get certain distant batteries to cease firing just at the right moment, when the Infantry of one's own side are getting close to the enemy's position. To overcome these obstacles, which will otherwise very probably bring about a want of method in the employment of Artillery in large masses, and thus perhaps rather check than assist the operations of the rest of the Army, a sound and uniform system of direction of the whole line of Artillery must before all else be adopted. This can be easily enough and as a matter of course attained in the case of the smaller bodies, but as soon as the Corps Artillery has become amalgamated with the divisional guns, the "Artillery brigade commander" must assume the direction of affairs. Should the Artillery of several Army Corps find themselves in position beside one another, the command of the whole must be assumed by the officer commanding the Artillery of the Army, or, if he be not present, by the senior Artillery brigade commander on the spot. Of course the direction of this chief commander of the Artillery must be confined to general instructions, the carrying out of which in detail must be left to his subordinates. In directing the fire care must be taken that the whole of the enemy's line of Artillery is brought within its range, while it is concentrated on certain individual batteries, such as those which are the points designated by the chief commander of the Artillery as targets for a concentrated aim. Great care must be observed in telling off batteries to their various roles.

We may close with a short *resume* of the views we have expressed:

1. The growth and continued advance of Artillery science has increased and will continue to increase the necessity for its being employed in masses.

2. It is impossible in the case of battles between great armies not so to employ it, because of the small space usually available for the large number of guns.

3. The more the difficulties of such a use of it are increased the more necessary is it to strive for a good and uniform system in directing fire.

In this way will Artillery always be enabled to fulfil its role of commencing the engagement, of destroying the hostile Artillery, and ultimately of shaking the enemy's Infantry, and thus, if it do not actually gain the victory, it will at any rate pave the way which leads directly to it.

Lastly, it will materially develop and enhance the triumph by pursuing with a heavy shell fire the flying foe.

The *Avenir Militaire* quotes from the official sanitary reports of the German Army during the Franco-Prussian War a number of very interesting particulars concerning the Germans killed and wounded. The following are a few statistics: Total number wounded during the war, 116,821; died in the field without medical care, 17,255; attended on the field or in the ambulances, 99,566; of whom 11,023 died and 88,543 were cured. Location of the wounds of the 99,566 men: 10,013, in the head; 1,700 in the neck; 9,460 in the back or chest; 3,366 in the abdomen; 32,307 in the arms or shoulders; 39,811 in the legs; 2,909 in places not indicated. Of 49,624 wounded, 39,054 were by infantry balls (7,629 died); 2,676 by artillery projectiles (565 died); 6,777 by projectiles not indicated (1,152 died); 104 by sabre cuts (12 died); 273 by bayonet and point wounds (8 died); 390 by blows, kicks from horses, etc. (17 died); 118 indirectly by projectiles (4 died); 192 by falls from horses, etc. (8 died); and 40 by burning (1 died).

The lance now being issued to the German Cavalry is composed entirely of metal, the lance-pole being replaced by a steel cylinder, which renders it handier and lighter than when made of wood. The French are considering the advisability of restoring this arm to their cavalry, as its hasty abolition was a doubtful proceeding. Although the weapon is of little avail in the *mêlée*, it is most formidable otherwise, and its moral effect is enormous. As seen during the Indian Mutiny and in the Zulu and Egyptian wars, men will throw themselves on the ground before Hussars or other troops unable to reach them with the sword, and when they have passed spring up and fire, whereas the approach of Lancers will cause a precipitate retreat.

Machine Guns in Future Warfare.

(United Service Gazette.)

On the above subject an Indian contemporary observes that when arms of precision were first developed to their full power in the breech-loader it was prophesied that the day of Cavalry was past, and that a gradual dwindling away of that arm was imminent; yet, though the improvement in small arms has been great and unceasing, the value of Cavalry has rather increased than diminished. That the tactics, etc., of the arm will be somewhat altered under certain conditions, and that its arms alter slightly to meet the extended duties called for, is merely one of the incidental facts necessary in the development of any Service. The future of Cavalry must be an important one; the only question is as to the direction in which their work will tend. As the eyes and ears of the Army, Cavalry will always have a role of its own and be invaluable to any Army, but it is in the actual shock of battle that its future is liable to change. That Cavalry must add fire to shock tactics will be admitted by the most ardent lover of the *arme blanche*; but the extent to which this is to be carried out and the amount of shooting to be done still seems a moot point, which will probably not be decided till the next great war. Russia has adopted the new fire-tactics theory in its entirety, and has turned all her Cavalry into Dragoons, but, *pace* Sir Charles Dilke, we do not believe this to be a good plan, feeling convinced that the sword and the lance still have a great part to play on the battlefield. A Dragoon, according to *Punch*, was a "man who fought indifferently either on horse or foot," and the *double entendre* exactly described the facts of the situation. The great danger of Mounted Infantry is, as we have pointed out in a previous article, that they may develop into indifferent Cavalry, and the Dragoon runs the risk of developing into an indifferent Infantryman. Therefore, we think the Russian system a mistake; Cavalry should remain Cavalry, and the word done by "Infantry with the power of moving rapidly from place to place" should be relegated to the arm that best knows how to use it. This refers, of course, to the actual employment of Cavalry on the field of battle, and not to its use on convoy duty, or as a reconnoitring body, when it must be trained to shoot dismounted, and, therefore, must go through a certain amount of musketry practice. The old feeling of contempt for firearms, which was so strongly felt by the knights of old because they could not stand against them, has not yet left the Cavalry, and all musketry is looked on more or less as an unnecessary fad. It must, however, be acknowledged that a proper knowledge of the use of the carbine is essential to a good Cavalry soldier of to-day, especially when we consider the foes he will probably have to encounter and the work he will chiefly have to do. It is essential, however, that musketry should not interfere with equitation, and the axiom that a "Cavalry soldier should be a good horseman" is rather likely to be forgotten, unless encouraged under the stress of modern ideas. For this purpose we welcome the "Lloyd Lindsay" competitions, as they are called, and everything that encourages both riding and shooting.

But there is one part of a Cavalryman's duties which, above all, requires marksmanship, and we are sure that the strongest opponents of Cavalry shooting will agree that advanced parties sent on to seize positions need the assistance of marksmen, who must be Cavalry, as nothing else can keep up with them. Repeating rifles are very necessary to Cavalry, a fact that we find recognized as far ago as 1866, when the Confederate Cavalry were armed with revolving carbines, the chambers of which were fashioned and worked exactly like those of revolvers. They were very imperfect weapons, with a terrible back blast of gas, which cut up the cheeks of the men firing, but they were infinitely superior in a *mêlée* to the weapons opposed to them. The habit of shooting while mounted should also be practised—a training which must extend to horses as well as men—or the excitement and movements of the animal under fire will greatly detract from the steadiness of the shooting. But there is a weapon which is being gradually introduced into English Cavalry regiments, and has been adopted in some German squadrons with considerable effect. This is the machine-gun, one of which attached to every troop or even to every squadron adds enormously to the power Cavalry possesses of holding an advanced post. Armed with a machine-gun, a troop can push on to seize and hold a redoubt or a village or even a position on the height without having to consider "when will the Infantry come up." Having taken their position, they dismount and use their repeating carbines in Infantry fashion, while the machine-guns enable them to fire at long ranges and also save them from being overwhelmed by sheer weight of metal, a danger to which small detachments of Cavalry are very liable. The type generally selected for Cavalry work is the "Maxim," as this, being automatic, cannot "jam" or fail at the critical moment (which other types nearly always do), besides being able to range over 2,000 yards with ease. The machine-gun is likely, however, to play no inconsiderable part in the Cavalry engagements of the next great war.

Americanisms.

(Admiral and Horse Guards Gazette.)

In a Transatlantic Service contemporary we find many quaint touches of the humour which Brother Jonathan has been for generations associated with. Our contemporary, which corresponds to our own leading service papers, gives many details and odds and ends which would appear to our English readers somewhat superfluous. For instance, we cull the following announcement: "Miss — and — daughters of Lieutenant-Colonel —, — Artillery, stationed at Fort M'Henry, are visiting the family of Surgeons —, —, U.S. Army; at Washington Barracks." This fully establishes our preconceived ideas of the importance of what we on this side of the herring-pond are apt to term the inferior sex in the country of the stars and stripes. Their goings in and goings out are chronicled with as much seriousness as the movements of regiments of infantry or batteries of artillery. But we come to what is a veritable *bonne bouche* in the following charmingly frank announcement: "Mrs. L., the wife of Captain F. H. L—, — Artillery, of Washington Barracks, to whom was born a daughter a few weeks ago, is sufficiently recovered to receive the congratulations of her intimate friends in person." No wonder they breed good soldiers in the United States Army. But, to leave the ladies and turn to sterner stuff, we are somewhat startled to find the number of courts-martial on officers recorded in this one number before us. No less than four general courts-martial on officers are recorded. This, with such a small regular army as the United States possesses, is coming it "purty strong," as Tommy says. And on further inspection we find that one officer who was recently restored to the army by Act of Congress after a dismissal from the service by sentence of a general court-martial is again going to brave that dread tribunal. Another general court-martial has been ordered to sit for the purpose of trying him. Another instance is that of an Assistant-Surgeon—who, by-the-bye, is styled captain—who was found guilty of neglect of duty, it appearing that he was an enthusiastic naturalist, and gave up to the collection of specimens time that should have been devoted to his medical duties. The sentence of the court was dismissal from the service, but we see that it has not yet been confirmed by the President; so the luckless investigator of nature's secrets may yet have a chance of grub-hunting whilst bedecked with the martial badges of his calling. These numerous courts-martial in so small an army, we fear, do not tend to show that the United States army has attained to any great height of excellence as regards discipline. It is always a bad sign in any disciplined force when many of its commissioned ranks are constantly getting into trouble; but let us hope that Brother Jonathan's Army is not in so low a state, and that the present number of his black sheep are few. So good luck to him, with fewer courts-martial and more announcements of the kind we have called attention to in the beginning of our present criticisms.

Mr. Bressler, sometime Second Lieutenant in the Michigan Militia, is, without doubt, entitled to our respect and admiration as an extremely clever young gentleman. Mr. Bressler, it appears, found that a Second Lieutenantcy in the Michigan Militia was insufficient to satisfy the aims and longings of a truly martial and inquiring mind. So Lieutenant Bressler, as a well-educated American should do, started on his travels to "do Yurrope;" and he *did it*, too, which is more than most of our American cousins who play with such seriousness at globe-trotting can say. The first scene of Lieutenant Bressler's exploits was Leipsic. Here he appeared in the disguise of an officer of the Regular U. S. Army, and being endowed with several fine uniforms and a handsome sword, he was enabled to satisfy his military craving for distinction by associating with the officers of the garrison in the varied and delightful amusements called playing skat and drinking Bruderschaft. Every fine afternoon Lieutenant Bressler, U. S. Army, turned out upon the promenade in one of his many fine uniforms, and with mutual satisfaction received and returned the salutes of the officers and men of the garrison. All went merry as a marriage bell, and things were settling down favourably for our gallant Lieutenant; so much so, that report says that his magnificent blue uniforms (of which apparently he had a varied assortment) captured the hearts and affections of the English and American ladies, at the expense of the less gaudy trappings of the Prussian officers. Unfortunately Mr. Bressler omitted one or two formalities customary with officers of the U. S. Army when they are "doing Yurrope." He omitted to call upon the United States Consul at Leipsic, and somewhat incontinently fought shy of him. Then, unfortunately, he showed no desire of cultivating any acquaintance whatsoever with two regular United States officers who happened to pass through Leipsic during his stay there. But, in spite of these small relapses from good breeding Lieutenant Bressler appears to have left Leipsic with the hearts and affections of all the female part of the community, and, more wonderful to relate, without any such useless commodities as debts. Our readers, we are certain, will hear with unfeigned regret that our gallant Lieutenant has lately been arrested at Munich for making false representations, and

upon the absurd charge of being suspected of being a spy. His most conscientious bit of work—his diary concerning the Army organization of Germany—has got him into the most serious trouble, the German Government apparently thinking his debts and misrepresentations of but little importance.

The Physique of the British Army.

(United Service Gazette.)

What for want of a better term we call the public of this country is beginning slowly and unwillingly, to realize the unpleasant fact that these islands are not merely not impregnable, but that it is possible for an enemy to land, and that if due preparation to meet him is not made he may be tempted to test the possibility. This is, so far, satisfactory; but what is perhaps still more satisfactory, even the average official mind—the official mind, not exactly of the second class, but of the second plane—begins to see that something must be done, or, at all events, promised. Accordingly, we have promises, to which a look of earnestness is imparted by inspections and rumours of inquiries to be made, and remedies to be applied to evils, some of them so glaring that it is not easy to understand why those whose negligence (to say no worse) allowed them to grow and flourish, should not have some "remedy" applied to them as well as to the evils themselves. Long and bitter and painful experience, however, has taught the people of this country that official promises have too often been promises and nothing more; and it has sometimes been the case that the promises most readily given, and most loudly proclaimed, and most volubly reiterated, have been just those which bore least fruit. It is not surprising, therefore, that many should hesitate about believing until they see. In fact, on a question of vital importance to the existence of the Empire, such as the condition of our Navy and Army, it is the duty of everyone to demand deeds as well as words from those whom the nation has entrusted with the defence of the State, involving as it does the lives and fortunes of millions of beings.

There are reasons why at this moment the public should exercise the greatest vigilance over the doings of their officials as to the national defences, and insist on the greatest diligence and watchfulness. There are other causes of war than the desire of aggression, or the love of glory, or the wish for territory, or revenge. A nation which may have no such motive may be in the terrible position of having to decide between civil and foreign war, and it would not be difficult to find instances in which foreign war has been regarded as the less evil of the two. Looked at from the point of view of the nation so placed, it would be considered not only that the cost in blood and money would be less in a foreign war carried on in another country than in a civil war fought out in its own, even without taking into account the divisions which a civil war creates, and the bitter memories it leaves behind. Supposing that the United States had been so situated, politically as well as geographically, that they could have entered upon a foreign war if they had wished, in the hope of delaying the civil war until some less terrible solution of the difficulty had been found; could they possibly have suffered in any foreign war so much as they did in their civil war, especially when we consider the desolation in the South which the war caused?

The state of affairs on the Continent, growing more dangerously critical every day, more than justifies us in drawing earnest attention to the last medical report on the army, and the letters on the chest girth of soldiers from Dr. Hambleton which have appeared in our columns. So far as the medical report is concerned, we will merely give some painfully startling figures as to the Home Army, as we think we may safely leave others to draw the only deductions which can be drawn from them. On January 1, 1887 there were 98,101 men serving at home. According to the Army Medical Report for 1886, there were 78,089 admissions into hospital, 4,360 constantly sick, 632 deaths, and 1,667 invalids discharged. 6.68 per 1,000 of deaths contrasts favourably with the 17 to 20 of private life; but when it is supplemented by 17.64 of invalids discharged and 47.08 constantly sick, the number practically dead, so far as the nation is concerned, comes to 71 per 1,000, and this at home and during peace. Of the 78,089 admissions into hospital—even supposing, as was no doubt the case, that great numbers were continuous repetitions—it shows a state of things calling for searching inquiry, and the need of a settled resolve on the part of the nation to grapple with the cause determinedly and at once.

The importance of sufficient chest girth in our soldiers is fully appreciated by the officials of the Medical Department, and is justly causing them great and growing anxiety, on account of the yearly increasing number of rejections under that head, as shown by the following figures:—1880, 4,711; 1881, 5,421; 1882, 6,601; 1883, 7,406; 1884, 6,876; 1885, 7,267; 1886, 10,132. It will be seen that there was a diminution in 1884 and 1885. This was owing to the better type of recruit which the want of employment had sent into the Army. This fact, however, only renders the great increase in 1886 the more painful, as the want of employment was still at work in producing recruits. A

proper and sufficient chest girth is of such vital importance to the general health, and a deficiency in that respect implies so much that Dr. Hambleton's researches and deductions, based upon long and careful study and a proportionate number of carefully conducted experiments, become of more than usual interest and importance. In his paper read before the British Association at Manchester he showed as the result of his experiments not only that the size and shape of the chest varied, as he varied the conditions to which it was subject, but that this sequence of events was absolutely constant.

The present condition of the army in this: On January 1, 1888, the army numbered 203,060 men. Of these 85,609 had a chest girth under 36 inches, and only 37,373 had a chest girth of 38 inches and upwards. Over forty years ago Brent obtained from measurements of large numbers of men a *medium* standard, which was adopted for first-class life assurance in America. Under this medium standard, none of our soldiers should have a chest girth of less than 36 inches, and half of them should have a chest girth of over 38 inches. This medium standard, however, is far below the maximum standard obtained by Brent from the measurement of men of fine physique. It is easy, Dr. Hambleton says, to increase the chest girth of small-chested men who are free from lung disease by as much as from 3 to 5 inches, and, provided the disease be not too extensive, we can with due care produce results in the same direction to a surprising extent. The time it required to effect this change of course varies, but we know of no reason to prevent the chest girth of non-diseased soldiers being raised to the American standard for first-class life assurance within twelve months of the systematic adoption of the measures proposed by Dr. Hambleton; and two years hence the authorities can, if they choose, have an army composed only of men of splendid physique.


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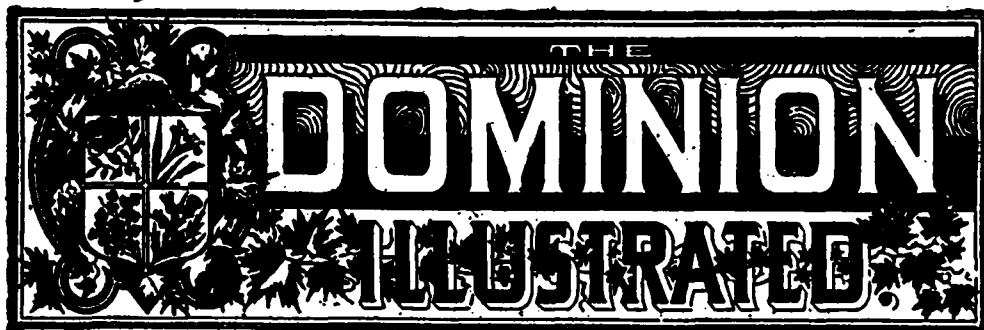
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