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Colonel v. Löbell's Annual Reports upon the Changes and Progress in Military Matters during 1883

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COLONEL v. LÖBELL'S¹ ANNUAL REPORTS UPON THE
CHANGES AND PROGRESS IN MILITARY MATTERS DURING
1883.

By Lieutenant-Colonel H. HILDYARD, Highland Light Infantry.

THE first number of this useful military publication, by Colonel v. Löbell, appeared in 1875, since which time he has fully maintained the programme then put forward, by which he proposed to reproduce annually a complete record of all military changes in organization, drill, and tactics which had taken place, not only in the principal European armies, but also in all parts of the world. During the brief period of its existence it has had to record the complete reorganization of most of the military Powers, and though during the past year there have been no changes on so large a scale, the volume for 1883 does not on that account lack interest, though a larger portion of it than usual is occupied with other matters connected with the military art.

Germany.

As is necessarily the case, Germany, having been the foremost in reorganizing her army according to modern ideas, has had few changes in organization, and even new regulations have been very limited. It is worthy of notice that by a Royal Order, dated the 4th September, 1883, the regulations in force for the promotion of Officers prior to 1823 have been reintroduced. They are briefly to the following effect:—

1. Each regiment and rifle battalion, the general staff, the engineer corps, the train, and the artillery are to form in themselves a separate corps for the purposes of promotion up to the rank of Field Officer.

2. The list by rank of Officers in each corps is to form the basis for promotion, only those being recommended who are certified to be qualified in every respect.

3. Qualified Officers on the unattached list of regiments are to be promoted with, but after those serving with the colours, up to and inclusive of the rank of Captain. Advancement to a higher grade is only to be allowed exceptionally by the special sanction of the Emperor.

4. Promotion to Lieutenant-Colonel and to the higher ranks is to be based upon army seniority.

In case, however, of notable inequality in the rate of promotion in the several corps, the difficulty may be met by making transfers from one body of troops to another.

By an Order of November, 1883, in time of peace the senior Field Officer of each infantry regiment is to be attached to the regimental staff as second in command of the whole regiment, so as to replace the Colonel when absent, or employed on special duties. Both he and the three Officers in command of battalions are to be Lieutenant-Colonels in place of Majors, as heretofore, the change being effected gradually.

The increased importance attached to the instruction of the troops in musketry has led to a short course being introduced at the School of Musketry

¹ Jahresberichte über die Veränderungen und Fortschritte im Militärwesen. 10 Jahrgang, 1883, herausgegeben von H. v. Löbell, Oberst z. Disp.—Berlin, Ernst Siegfried Mittler und Sohn. 1884. Pp. 537; size, 9·5" x 6·5" x 1"; weight, 1 lb. 14 oz. Price 8s. 6d.

at Spandau, which is to be attended by regimental and battalion Commanders of infantry.

General Staff Officers attached to districts in which fortresses are situated are to attend heavy artillery practice at the nearest ranges, whilst those belonging to Army Corps and Divisions are to witness field artillery practice, so as to allow of their becoming more intimately acquainted with the employment of that arm.

China.

The recent events on the coast of China have directed special attention to the military capabilities of that country, and the "Jahresberichte" has some remarks on the subject which are not without interest. During 1882 and 1883 the purchase of artillery and small arms was made by China on a large scale, Krupp alone having delivered 362 field guns (of 3, 7, and 9 cms.), 12 siege guns (of 12 cms.), 156 heavy guns (of 12—21 cms.), 16 coast battery guns (of 21—24 cms.), and 40 ship's guns (of 8—30·5 cms).

This marks the progress made in her armaments; but it is nevertheless certain that China does not as yet possess an army so organized as to be in a position to compare with European troops. Still, as compared with 1860, her improvement is marked, more especially as regards coast defences. The masses of troops which were assembled on the Russian frontier on the north and west at the time of the Kuldja difficulty, and more recently on the Tonkin border, were, though formidable in point of numbers, without tactical organization and consistency, neither armed nor clothed uniformly, and were wanting in modern requirements, both as to organization and command.

An opponent, however, will be no longer able to land without danger and difficulty and march upon Peking. After disposing of the fleet of heavily armed gunboats, which before the late bombardment of Foochow numbered thirty-two, there will be the dangers of a torpedo conflict to be encountered before reaching the forts. These have been erected of late years at all the more important points on the coast, notably at Canton, in the Gulf of Petchili, at Takoo, Pehtang, and along the Peiho to Tientsin. They are constructed on the most modern approved principles, and are armed with heavy Armstrong and Krupp guns, protected in some instances by plated cupolas.

The troops destined for the defence of this most important portion of the Empire are the best of the Chinese forces which form the Peking Army as reorganized by Li-Hung-Chang.

In Tientsin a torpedo school was established in 1882, under the superintendence of a German.

France.

The only important change made in the organization of the French Army during the past year relates to the Artillery. The law of reorganization of the 13th March, 1875, by which the whole Army was remodelled, provided for 57 foot batteries for employment in the fortresses and coast works, and of these 12 were permanently allotted to Algeria. This left France proper with only 45, a strength altogether insufficient, even in time of peace, and it was found necessary to augment them by 51 new batteries, if the duties were to be properly performed. But as this would involve the existing formations being practically doubled, it was determined to place this branch on an entirely new footing by separating it altogether from the Field Artillery, so far at least as the non-commissioned officers and men were concerned.

It might have been thought that with so extensive a force as was contemplated it would have been found expedient to separate the Officers as well, so as to avoid the many inconveniences which, as we know by experience, a general list entails. But this has not been done, and in the preamble of the new law dealing with the reorganization of the Foot or Garrison Artillery,

the reasons for this are given. In the first place the Officers serve for a longer period than the men, which affords them the opportunity for mastering the details of both services, which the men have not the time to do. This being so, apart from the inconveniences of transfer on promotion and the change from a popular to what is generally considered an irksome service, much is to be gained by the most varied experience possible being ensured for the Officers generally. There can be no question but that the State is a gainer by the decision arrived at, though it is probable that the Officers of Artillery generally will have been disappointed at it.

The new organization provides altogether for 16 Foot or Garrison Artillery battalions, each of 6 companies; 38 Field Artillery regiments, formed into 19 brigades, viz., 1 to each Army Corps (of the 2 regiments forming each brigade, the first is composed of 12 Field batteries, and the second of 8 Field and 3 Horse Artillery batteries); 2 Pontoon regiments, each of 14 companies; 10 companies of Artillery artificers for the repair of *matériel* of the Artillery, Engineers, and Train; and 3 Laboratory companies.

The composition of the Foot Artillery Battalions was fixed as follows:—

Staff: 1 Chef d'escadron as Commandant, allowed 2 horses.

1 Capitaine-Major, with 1 horse.

1 Lieutenant as Paymaster, with 1 horse.

1 Lieutenant as Quartermaster, with 1 horse.

1 Surgeon-Major, 2nd Class, with 1 horse.

1 Trumpeter Corporal.

1 Armourer.

3 Maréchaux des logis (wagon-master, store officer, and secretary).

1 Fourier.

5 Corporals (clerks, artificers, and fencing inspector).

5 Gunners (writers and artificers).

In all 5 Officers, with 6 horses, 16 non-commissioned officers and gunners.

Each of the 6 companies is composed of the following:—

1 Captain Commandant, with 1 horse.

1 Captain of the 2nd Class, with 1 horse.

1 1st Lieutenant, with 1 horse.

1 2nd Lieutenant or Sub-Lieutenant, with 1 horse.

1 Adjutant.

1 Maréchal des logis chef.

7 Maréchaux des logis.

1 Fourier.

8 Corporals.

5 Laboratory men.

4 Workers in wood.

2 Trumpeters.

100 Gunners, of whom one-third are of the 1st Class.

In all 133 of all ranks, and 1 boy.

A Foot Artillery Battalion, therefore, has the following establishment:—

29 Officers with 30 horses.

190 Non-commissioned officers, corporals, and men belonging to the staff.

600 Gunners.

6 Boys.

The distribution of the battalions will be as follows:—

1st battn. (place of formation Douai) Lille, with companies at Havre and Dunkirk.

- 2nd battn. (place of formation Versailles) Valenciennes, with companies at Maubeuge and Givet.
- 3rd " (place of formation Laon) Rheims, with companies at La Fère and Angoulême.
- 4th " (place of formation Châlons) Verdun, with companies at Longwy and Montmédy.
- 5th " (place of formation Poitiers) Verdun, with companies at Angoulême.
- 6th " (place of formation Orléans) Toul.
- 7th " (place of formation Bourges) Langres, with companies at Fort Domont and Paliseau.
- 8th " (place of formation Toulouse) Epinal, with companies at Le Mans and Manonvilliers.
- 9th " (place of formation Vincennes) Belfort, with companies at Besançon.
- 10th " (place of formation Besançon) Besançon, with companies at Dijon and Montbéliard.
- 11th " (place of formation Clermont-Ferrand) Lyons, with companies at Castres.
- 12th " (place of formation Grenoble) Grenoble, with companies at Briançon and Valence.
- 13th " (place of formation Nismes) Nice, with companies at Tunis, Toulon, and Vannes.
- 14th " (place of formation Tarbes) Bayonne, with companies at Perpignan and Vannes.
- 15th " (place of formation Rennes) St. Malo, with companies at Cherbourg, Brest, and Bourges.
- 16th " (place of formation Paris) Paris.

It will be seen from this that the majority of the battalions are on or in the vicinity of the Eastern frontier.

The establishments of the two field artillery regiments of each brigade are fixed as follows by the new law :—

	1st Regiment.	2nd Regiment.
Superior Officers	8	8
Other Officers.....	56	52
Non-commissioned officers and men of staff	434	401
Gunners	840	776
Officers' horses	98	92
Other saddle horses	271	339
Draft horses	384	340

The pontoon regiments, artificer companies, and laboratory companies retain the same establishments as heretofore.

The formation of the new foot artillery battalions necessitated an increase in the number of effectives over that of the foot artillery batteries, previously existing, of 329 officers and 8,511 of other ranks, together with 300 horses. To obtain these without materially increasing the estimates, the expedient has been resorted to of breaking up the existing 57 artillery train companies, and incorporating their *personnel* and horses in the new formation. In time of peace these train companies were found not to be necessary, as the duties they performed can be undertaken by the field artillery and *train des équipages*, whereas in time of war the necessary formations are to be drawn from the field artillery.

The 57 train companies, therefore, together with the 45 foot artillery batteries in France, are broken up and incorporated, partly in the field artillery; but the greater bulk of them goes to form the new battalions. In

Algeria the 12 foot batteries existing under the old organization are to be continued provisionally.

A new law governing promotion has been introduced, by the adoption of the recommendations of the Army Commission, presided over by the Marquis de Roys. While this retains in principle the provisions of the law of 1832, some important changes are made. No one is to be promoted to a higher grade who does not possess the necessary qualifications. Corporals and brigadiers are to be appointed to the rank of non-commissioned officer after four months' service in those appointments. The promotion of the latter to the rank of Officer will be made by selection alone, after a service of at least two years with the colours as non-commissioned officer, and after having obtained the prescribed certificate at a school of instruction. The rule already in force in the Artillery and Engineers by which Sub-Lieutenants are promoted after two years to the rank of Lieutenant is extended to the other arms.

Promotion to the rank of Captain and to the higher grades is dependent upon passing the necessary examinations, which are to be conducted by specially constituted Boards. Only the names of Officers which are included in the first half of the seniority lists are to be submitted in the annual lists for promotion sent in by the 31st of March. Those Captains who have the Staff certificate are not required to undergo a further examination, and any included in the first two-thirds of the seniority list may be recommended.

One-third of the vacancies as Captain are to be filled by seniority and the rest by selection.

Advancement to the higher ranks from *chef-de-bataillon* upwards will be by selection, that to Colonel and General being based on the qualification list submitted by the Conseil d'Expérience de la Guerre. In the case of Lieutenants and Captains found not to be efficient for promotion, they are transferred to the reserve list on completing twenty-five years' service, and receive a proportional pension. Two years' service in the reserve reckons, under these circumstances, as one with the active army towards the final retirement and permanent pension.

Two projects for the formation of a special army for Algeria and of a reserve expeditionary corps were discussed in the Chamber in the course of the past year, one of which was brought forward by Baron Reille on the part of the Army Committee, and the other by M. Thibaudin, formerly Minister of War. Both of these were eventually withdrawn, and have been replaced by a new scheme brought in by General Campenon, the present Minister of War. It differs only from those which preceded it as regards the composition of the expeditionary corps and the conditions under which re-engagement is to be allowed.

As proposed the Army of Africa is to consist of the following troops:—

- 4 Rifle battalions, each of 5 companies, including 1 dépôt company.
- 4 Zouave regiments, each of 6 battalions of 4 companies, and 2 dépôt companies.
- 4 Algerian tirailleur regiments, each of 4 battalions of 4 companies, and 2 dépôt companies.
- 4 African light infantry battalions, each of 4 companies, and 1 dépôt company.
- 2 Foreign-legion regiments, each of 4 battalions of 4 companies, and 1 dépôt company.
- 5 Disciplinary companies.
- 4 Chasseurs d'Afrique regiments, each of 8 squadrons.
- 4 Spahis regiments, each of 6 squadrons.
- 3 Remount companies.
- 4 Artillery battalions, each consisting of 1 foot, 2 mountain, and 1 horse artillery battery.

- 1 Pontoon detachment.
- 1 Laboratory detachment.
- 1 Artificer detachment.
- 4 Sapper and miner companies.
- 1 Escort detachment.
- 4 Train squadrons of 4 companies.
- 9 Sections of departmental troops.

The 8 Zouave battalions to be newly raised, and 4 batteries selected by the Minister of War, are to form the reserve expeditionary corps.

To carry out the propositions it will be necessary to increase the French Army by 19 infantry battalions, 8 squadrons, 16 batteries, 4 engineer companies, and 16 companies of train.

The necessity for this proposed special organization has arisen from the difficulties experienced in providing efficiently for the military requirements of Algeria, and for minor expeditions under the short service system. These difficulties have been deeply felt during the last few years, on account of the numerous enterprises undertaken by France in Tunis, Madagascar, and Tonquin. Compulsory service *per se* is sufficiently onerous where the obligation is only for military service at home, but where, as in this case, it extends to service in Algeria and expeditions to distant portions of the globe, it becomes particularly distasteful. But apart from this, France has found that it is impossible to reconcile so short a term of service with an efficient force, such as it is always necessary to maintain on a war footing in Algeria, and as is required from time to time for special enterprises, when delay is above all things to be avoided.

Our own experiences in connection with Indian and Colonial reliefs, and the frequent despatch of minor expeditions, enable us fully to appreciate the difficulties of the situation, though the duration of service with the colours in the British Army is long compared with that in France. But in other respects, the conditions of service are so different in the two armies that we cannot pass judgment upon the French scheme of meeting the difficulty from our own point of view. So far as can be foreseen, this should be a satisfactory solution for France, the colonial requirements of which are comparatively small, and where compulsory service is in force, enabling her to maintain her home establishments complete. It will in any case be a great boon to the army at large, while providing for a higher standard of efficiency abroad, if the formations can be satisfactorily completed and maintained.

A series of regulations on the subject of the duties connected with troops in time both of peace and war were issued during the year, which have been drawn up with great care, and will well repay perusal. Of these, the first is the "Règlement sur le Service dans les Places de Guerre et les Villes de Garnison," which deals with the command of garrisons, measures of security, the duties of the Governor of a fortress both before and during a siege, and all matters connected with the duties and administration of strong places both in peace and war.

The second of the series is the "Règlement sur le Service des Armées en Campagne," which embraces the organization of an army in the field; the mode of notifying orders; cantonments, bivouacks, and camps, and the duties connected with them; the supply of troops in the field; marches; measures of security and system of outposts and reconnaissance; instructions to be attended to when troops are engaged; the conduct of convoys, and the attack and defence of fortresses.

There is so much of interest contained in these volumes, and so much even in v. Löbell's review of them, that it is difficult to decide what to reproduce in a necessarily brief extract. One of the most interesting sections is, however, the extract from the second Règlement, which treats of the formation of

large bodies of troops on the march with a view to ensuring a rapid deployment into line of battle being completed in sufficient time should it become necessary. The general principles laid down are to the effect that a sufficient number of separate columns must be formed of adequate strength which shall maintain communication with each other so as to ensure mutual support. These are to be composed of the troops detailed, accompanied by the fighting train and ambulances, followed by the regimental train and convoys. The ammunition and provision wagons required on the battle-field form the fighting train; the administrative columns, artillery park, movable remount depôts, and field hospitals compose the convoys.

On the march, the fighting train follows immediately after the troops, and after it the regimental trains. The convoys move at a distance of from half a day to two days' march in rear. The columns are to be protected by advanced rear and flanking guards, according to the requirements of the situation. Apart from these, cavalry divisions will move in advance of the operating armies and obtain touch of the enemy, which is to be constantly maintained, and his movements constantly observed, while at the same time covering their own army from hostile enterprises.

The normal order of march is by divisions, and the following partition of troops is laid down :—

1. *A Cavalry Division.*

- a. Advanced Guard 1st brigade.
1 horse artillery battery (only when required for the destruction of obstacles).
1 ambulance detachment.
Requisition service.
- b. Main Body Staff of the division.
2nd brigade.
3 or 2 horse artillery batteries.
3rd brigade.
- c. Fighting train of the division.
- d. Rear Guard 1 or 2 squadrons of the 3rd Brigade.
- e. Regimental train.

2. *An Infantry Division.*

- a. Reconnaissance and advanced duties for the security of the division :—
The cavalry attached to it.
- b. Advanced Guard Detachment of cavalry.
1 infantry regiment.
Staff of the 1st Brigade.
Half a company of engineers.
1 or 2 batteries.
Ambulance detachment.
Cavalry provision wagons.
Camp equipment of the division.
- c. Main Body Staff of the division.
1 battalion of the 2nd Infantry Regiment.
3 or 2 batteries.
2 battalions of the 2nd Infantry Regiment.
2nd Brigade.
- d. Fighting Train Ambulance.
Ammunition sections.
Detachment of mounted police.
- e. Rear Guard 2 companies.

- f.* Regimental Train Mounted police.
 Train of divisional headquarters.
 " of the cavalry.
 " of the engineers.
 " of the 1st Brigade.
 " of the 2nd Brigade.
 " of the artillery.
- g.* Convoys with escort.

3. *An Army Corps.*

- a.* Reconnaissance and advanced duties—the cavalry brigade.
- b.* Advanced Guard A detachment of cavalry.
 1st Infantry Brigade.
 Staff of the 1st Division.
 Half a company of engineers of the 1st Division.
 2 batteries of the 1st Division.
 Ambulance detachment.
 Cavalry provision wagons.
 Camp equipment for the army corps.
- c.* Main Body Staff of the army corps.
 Rifle battalion.
 2 batteries of the 1st Division.
 2nd Infantry Brigade.
 Ambulances of the 1st Division.
 Engineer company of the 1st Division.
 Corps artillery.
 Staff of the 2nd Division.
 Half a company of engineers of the 2nd Division.
 3rd Infantry Brigade.
 4 batteries of the 2nd Division.
 4th Infantry Brigade.
 Ambulances of the 2nd Division.
- d.* Fighting Train Engineer park.
 2 infantry ammunition sections.
 4 artillery ammunition sections.
 Bridge equipage.
 Detachment of mounted police.
- e.* Rear Guard 1 infantry battalion.
- f.* Regimental train.
- g.* Convoys, with provision columns in front.

4. *Detachment of all Arms.*

(2 squadrons, 1 infantry brigade, 2 batteries, and an engineer detachment.)

- a.* Reconnaissance and advanced duties, 2 squads.
- b.* Advanced Guard A cavalry detachment.
 2 battalions of the 1st Regiment.
 Engineer detachment.
 1 battery.
- c.* Main Body Staff of the brigade.
 2 battalions of the 1st Regiment.
 1 battery.
 2nd Infantry Regiment.
 Ambulance detachment.
- d.* Rear Guard 1 company.
 A cavalry detachment.
- e.* Train.

The order prescribing the march is to contain :—Available information regarding the enemy, the directions for the march, the strength and composition of the columns, any deviations from the normal formation, the positions to be eventually occupied by the flanking guards, the station of the Commander, the allotment of cantonments, time of movement of the convoys, and where they will be halted.

The rate of march is to be regulated by the infantry, and should average $2\frac{1}{2}$ miles an hour. After every fifty minutes' marching, a halt of ten minutes is to be made, when the columns will be closed up. Prolonged halts are only to be made if rendered necessary by the heat of the weather or the length of the march.

The review of the new *Règlements* is followed by an exhaustive account of the recruiting operations, the result of which for 1883 was a contingent of 105,961 men of the 1st category, and 31,039 of the 2nd, or in all a total of 137,000, being 3,864 in excess of the preceding year. These were allotted to the several arms and departments in the following proportion :—

	1st Category.	2nd Category.	Total.
Line regiments	63,808	16,828	80,636
Rifle battalions	5,172	581	5,753
Zouave regiments.....	1,747	....	1,747
Algerian Tirailleurs	300	....	300
African Light Infantry	3	....	3
Paris Sapeurs-Pompiers	30	....	30
Foreign legion	2	....	2
Total	71,062	17,409	88,471

Cavalry—1st Category only.

Cuirassiers	2,067
Dragoons	4,595
Chasseurs	3,581
Chasseurs d'Afrique.....	710
Hussars	2,109
5 Remount companies	6
Cavalry schools.....	3

Total 13,071

	1st Category.	2nd Category.	Total.
Artillery—			
Artillery regiments.....	9,886	6,722	16,608
Pontonniers	747	....	747
Foot Artillery battalions	2,681	2,915	5,596
Artificers and laboratory companies.....	111	....	111
Total.....	13,425	9,637	23,062
Engineers—			
Engineer regiments.....	2,365	126	2,491
Railway companies	80	....	80
Total.....	2,445	126	2,571
Train	2,322	3,148	5,470
Administrative branches	3,576	719	4,295

The new law for the administration of the Army, which came into force in 1882, had for its result the placing of the departments under the direct control of the Military Commander. This radical change in the previously existing system necessitated the issue of new instructions regarding the authority and the duties of the Intendance Officers. These have accordingly been embodied under four heads, treating of the duties connected with supply, clothing, equipment, transport, camp equipage, the payment of the troops, the supply of material, and provisions for the hospitals and ambulances, together with other subsidiary financial services.

In time of peace the entire duties of the Intendance in an Army Corps or a Military Government are conducted by the Intendant-General or the Military Intendant, as the case may be; but in war time the Army Intendant can act only under the authority of the Commander-in-Chief.

Considerable progress has been made in the appointment of Officers, with a view to completing the proposed establishment of the Active Army, as well as of the Reserve and Territorial Army. Including the whole of Officers and officials ranking as such, the Intendance numbered at the end of the year as many as 3,763, being 300 more than in the previous year, but the establishment has not yet been reached.

The Control Corps instituted in 1882 in connection with the new Law of Administration has now been formed, and 22 fresh appointments made to it, of which 17 were superior officials of the Intendance, and 5 were taken from the combatant arms. The total number was thus raised to 43. They commenced their duties in the autumn by the inspection of the administrative establishments and services in the several garrisons.

As regards the corps of Officers in the infantry, the situation cannot by any means be regarded as satisfactory. Promotion in the higher grades above the rank of Captain is very slow, and has given rise to a spirit of dissatisfaction, which can hardly be wondered at, when Captains have to serve from 13 to 14 years in that rank before obtaining their promotion. The reason is not far to seek, for in the French Army there are only 7 Field Officers to 24 Captains per infantry regiment, so that in time of peace the ordinary tour of promotion holds out little prospect of advancement to the higher ranks. Both the Active Army and the Reserve showed a deficiency, principally of Lieutenants, and the decrease in the number belonging to the Reserve was 827 more than in the preceding year.

Revised regulations were issued provisionally last year for the organization of the Medical Services in the field. According to the instructions contained in these the several establishments are to be distributed in three lines. Of these the first comprises the dressing stations and ambulances for the use of the troops on the march, and for the first dressing of the wounded on the field. The second line is composed of the movable and stationary field hospitals and convalescent depôts for the reception of such of the sick as may be expected to be able to rejoin in a few days. In the third line are included the ambulances and wagons allotted to the evacuation of the sick and wounded to the rear, and also the trains fitted up specially for the purpose of completing this movement.

The whole of the services are under a Médecin-Inspecteur, who has immediate control over the entire military and civilian *personnel* employed with the ambulances and hospitals. To enable him to enforce his authority, disciplinary powers similar to those of a Brigadier-General are delegated to him. He is responsible for the establishment and removal of the several hospitals, as well as for all their interior arrangements, and he has to report every five days, and after any engagement, to the General Commanding upon the state of the sick and wounded. Special attention is enjoined to the timely and rapid evacuation of the wounded from the hospitals in second line, with a view to which the Médecin-Inspecteur is to be in

constant communication with the Director of Railways through the General Officer.

The medical services of each Army Corps are, as in time of peace, under a Director, who superintends them and directs the establishment of the ambulances and convalescent depôts, applies for or requisitions the necessary wagons for the transport of the wounded, and is responsible to the General Officer Commanding for taking such measures and giving such orders as are best calculated to ensure the satisfactory sanitary condition of the troops. Each division has a Divisional Surgeon, who regulates its medical services, and takes his orders from the General commanding it as to the establishment of the ambulances, the duties of which are provided for by the Medical Officers belonging to the second line.

The immediate service with the troops is performed by the Medical Officers, sick-attendants, and bearers allotted to them, of whom the latter only come under the doctors' orders whilst actually employed in their duties of removing the wounded from the field. Dressing stations are arranged by battalions or regiments, as the circumstances may require, at the commencement of an action. They are established in a line with the reserves, and care is to be taken that they are never placed in the vicinity of important tactical positions. From these the wounded are sent back with as little delay as possible to the ambulances.

The movable field hospitals to be employed, and their position, are designated by the Director of the Medical Service, under the orders of the General Commanding.

Ambulances are established at the several etappen stations for the reception of those sent back until they can be forwarded to the rear. Provisional ambulances are also to be provided at the more important railway stations, where men unable to continue their journey may be received and treated. The duties in connection with these, as well as those of the special hospital trains, may be provided for by the "Société de Secours aux blessés Militaires."

The disciplinary powers of a Regimental Commander are given to the Medical Officers in charge of hospitals and ambulances, both in regard to their *personnel* and the patients under treatment.

New regulations have also been introduced for the selection and training of the sick-attendants and bearers. In every company, squadron, and battery, one man is to be borne in excess of the establishment as a sick-attendant; and of these one in each battalion or group of batteries is to be a corporal or sergeant. In addition to these, four men in each company or battery are to be trained as bearers. Every year when the oldest class is passed to the Reserve, four men are to be selected from amongst them per infantry and artillery regiment, and two per cavalry regiment and foot artillery battalion, for service as sick-attendants if called up. Those not previously trained as such have to be put through a two months' course of instruction.

The bearers for the infantry and artillery reserve are to be taken from amongst the musicians and artificers, and there are besides those men who are passed to the Reserve in regular course and have been previously trained as sick-attendants. In the cavalry those men are to be selected who show the least proficiency in riding.

The law introduced in July, 1881, with a view to bettering the position of the non-commissioned officers, and inducing more of them to re-engage and continue with the colours, has not had the desired results. Other proposals have now been made, by which they may be permitted to receive a modified pension after 12 instead of after 15 years' service, as before, and the period of re-engagement is reduced to one, two, or three years, at the man's option. After three years' ordinary service, and nine on re-engagement, the non-commissioned officer can claim a pension for life and a civil

appointment. The pecuniary conditions of re-engagement are the same as under the former law, except that those extending their service for one year only are to receive an increase in daily pay in lieu of a bounty.

The *Spectateur* does not anticipate any more favourable results from the new law, and believes that the only method of obtaining and keeping good non-commissioned officers is by giving civilian appointments only to non-commissioned officers who have served at least four years. By the above the pensioned non-commissioned officers remain at the disposal of the War Minister for five years after leaving the Army, and may be employed for the manœuvres.

Considerable progress has been made in the development of the Territorial Army, and the number of its Officers materially increased. In the higher ranks in the infantry, which forms the bulk of the territorial formations, there were wanting only two Lieutenant-Colonels and eighteen Chefs de Bataillon to complete the establishment. A proportion of the Army, viz., 5,033 Officers and 141,412 men, were called up for manœuvres in three series of twelve days each, the result of which was reported to be very satisfactory.

A great extension has been given to military exercises in schools, to which a high importance is attached, as calculated to give a martial bent to the youth of France. Battalions are regularly formed, the arms and equipment being provided by the State. As might be expected, Paris has taken the lead in these formations, mustering twenty-four battalions of four companies.

Austria.

The year has not been marked in the dual Empire by any important changes, though some existing laws have been consolidated or modified. The General Staff, for instance, was reorganized in 1875, and made into a separate corps, which was a return to the practice in force prior to 1871. This organization has now been confirmed by the issue of revised regulations on the same lines.

The General Staff as so constituted consists of the following Officers:—

1. Those belonging to the permanent General Staff Corps, the lowest rank in which is Captain of the 1st class.
2. Those attached on probation.
3. Those detached temporarily from the troops, and borne as supernumeraries.

At its head is a General Officer of standing, superintending all arms and branches, and directly responsible to the Emperor. Notwithstanding this he works in concert with the Minister of War, to whom all important organic propositions have to be addressed. He has to deal with all war preparations and military questions—the *ordre de bataille*, mobilization, defensive works, railways and communications; questions of organization, armament, equipment, and manœuvres; and he is especially responsible for the interior working and completion of the General Staff Corps. A Chief of the Staff is also appointed to each army corps, division, and brigade.

The General Staff Corps is recruited from Officers of the Army possessed of the necessary scientific qualifications, and tested in the military duties required. With this view all Officers are attached on probation prior to final appointment to the corps. Before being so attached, however, they must give satisfactory proof of qualification as follows:—

1. They must have completed three years' service, and be certified to be in all respects good regimental Officers.
2. They must produce a certificate of good moral character.
3. Give proof of a good sound general education.

4. Give proof of sufficient technical knowledge, such as is required for the higher certificate at the final examination at the high military schools.

5. Satisfy requirements as to physical qualifications.

Appointment to the corps on completion of the term of probation rests exclusively with the Chief of the General Staff.

The previously existing "field-railway divisions" have been replaced by a combined "railway and telegraph regiment," and the generally extended technical duties now comprised within the duties of the Engineers render a short review of the several services desirable. By the revised instructions their duties embrace the following subjects:—

1. The technical works and fortifications of the theatre of war.

2. The repair or destruction of roads and bridges.

3. Participation in the construction and destruction of railways.

4. The intrenchment of positions and battle-fields.

5. Participation in the attack and defence of intrenched positions and localities; breaking down the enemy's obstacles and defensive arrangements, and strengthening works or positions which have been captured.

6. The construction of trench and mining works in connection with the investment, siege, or defence of fortified places, and the manipulation of everything connected with the mining operations.

The engineer troops are organized in 2 regiments, each of 5 active battalions of 4 field companies, besides 2 reserve companies and 1 *dépôt* battalion of 5 companies. In peace the latter are composed only of cadres stationed at the regimental headquarters at Olnütz and Krems, viz., 1 company cadre per detached battalion. To the regiments are attached 15 columns of *matériel* and the Engineer park, which carry intrenching tools and the necessary implements, explosives, surveying instruments, &c. Each column is composed of seven four-horse wagons. There are also the siege park and reserve engineer park.

Only a proportion of these formations are attached to armies and army corps in the field, the remainder being distributed in the garrisons and fortresses. For technical and administrative purposes they are under the Ministry of War, but are under the direct control of the General Officer Commanding in all military matters.

The strength of a field or reserve company on a war footing is 5 Officers, 235 men, 26 draft and 2 riding horses; of an *Ersatz* company 5 Officers and 230 men, and of a column of intrenching tools 22 men and 28 horses.

In close relation to the engineers is the Pioneer regiment. The principal duties which fall to the lot of this formation are as follows:—

1. The construction of military bridges by means of its bridge equipage and train, and the arrangement of flying and semi-permanent bridges.

2. The arrangements for and the management of the crossing of rivers by troops in boats, whether in those belonging to the bridge equipages or in others.

3. The repair and destruction of roads and ways; participation in the construction or destruction of railways or bridges.

4. Participation in intrenching positions and battle-fields.

5. The construction of the more important technical works in camp and on the march.

6. The manipulation of waterworks in connection with the above.

Each army and army-corps has a proportion of pioneer troops attached to it for these services, and the remainder which are not occupied in this manner are employed in the fortresses and on the lines of communications. Where works on a large scale are undertaken, and the pioneers are employed in concert with the engineers, the senior Officer of the latter superintends the works of fortification and the mines, while the pioneer Officer takes charge of the bridging and water transport arrangements.

The pioneer regiment consists of 5 field battalions of 4 companies, 1 reserve company, and 1 reserve park.

To each battalion are allotted 8 bridge equipages, which are taken charge of by the reserve park. Besides these there are 16 more for the equipment of the reserve companies, which are ultimately destined to strengthen or complete the formations with the operating armies. The bridge equipages are ordinarily retained with the army reserve formations, and are only detached to the several army corps or pioneer companies when specially required; or they are collected at those points where they are likely to be utilized.

Each equipage comprises stores, tools, and the necessary material for the construction of about 90 yards length of bridge on a fixed or floating foundation.

Light bridge trains are also carried in the proportion of one to each army corps, and attached to its pioneer company. These are made use of by the advanced guard for spanning lesser obstacles, such as canals, streams, dykes, or hollow ways, and provide for a span of about 14 yards.

The pioneer regiment is placed under the Chief of the Staff for military and technical purposes, but the several units come directly under the command of the Officer commanding the troops to which they are attached. In time of peace the regimental Staff, 1 battalion, and the tool depôt are located at Klosternenburg, and 1 battalion is at Pressburg, Prague, Linz, and Pettau. The war strength of a field or reserve company is 5 Officers, 217 men; of an Ersatz company 4 Officers and 223 men; of the first four tool reserves 2 Officers, 51 men; of the fifth 2 Officers and 63 men; of the tool depôt 5 Officers and 174 men, and of a movable tool depôt 2 Officers and 35 men. Altogether the establishment of the regiment, together with the tool depôt, amounts to 181 Officers, 7,092 men, and 676 horses. The train connected with it numbers in addition 287 drivers, 164 riding horses, 510 draught horses, and 105 wagons.

The transport of the bridge equipages is provided for by the train squadrons Nos. 65 to 75, two being allotted to the 8 equipages of each pioneer battalion, and No. 75 providing for the reserve equipages. As each of the train squadrons is capable of subdivision into 4 sections, this gives 1 section to each bridge equipage.

The "Railway and Telegraph Regiment" was formed last year from the 6 reserve companies of the 2 engineer regiments, and the 5 previously existing railway divisions. A portion of the newly constituted regiment is trained and equipped with especial reference to railway work and the remainder has for its sphere the construction and manipulation of the field telegraphs.

The duties of the railway companies in the field are as follows: 1, the restoration of damaged lines; 2, to assist in laying down new ones; 3, the provisional management of lines occupied in the enemy's country, of those restored by them, or of newly laid lines; 4, the destruction or obstruction of railways.

The field telegraph formations have the following to attend to: 1, the restoration and management of the telegraph lines within the sphere of operations, or their destruction when necessary; 2, the laying down of semi-permanent lines in connection with the permanent lines, and working them; 3, their destruction when required.

In peace time the regiment is composed of 2 battalions, each of 4 companies, and a depôt cadre. On mobilization this battalion organization is broken up, and the regiment furnishes the following formations:—

1. 8 railway companies, each of 4 sections, so constituted and equipped as to be capable of employment independently.
2. 3 field telegraph directions for the first line.
3. 3 field telegraph directions for the second line.

4. 43 field telegraph and 3 mountain telegraph subdivisions.

5. 1 Ersatz battalion of 2 Ersatz companies.

The method of effecting these several formations is by extending the companies of the regiment in the following manner: From each is formed 1 railway company, and from Nos. 1 to 7 companies also 6 field telegraph subdivisions each, and from the 8th company the 43rd subdivision and the 3 mountain telegraph formations.

The regiment is placed under the Chief of the General Staff, but the several portions attached to troops are under the immediate orders of the Officer in chief command of them.

The organization of the Landwehr in Austria continues to be the same as for some years past. But until last year attention was paid only to the formation of the infantry, which constitutes the bulk of the forces, and numbers 82 battalions, 82 reserve battalions, and 82 Ersatz companies, besides 10 rifle and 10 reserve battalions in the Tyrol and Vorarlberg. Last year, however, a commencement was made with the cavalry formations, which are to consist of 3 dragoon and 3 lancer regiments, each of which is to be divided into 4 field squadrons and 1 Ersatz subdivision.

Cadres only are to be maintained in time of peace, consisting of 1 Captain, 3 Subalterns, 1 Cadet, 52 non-commissioned officers and men, and 66 horses, also an administrative Officer, a corporal as clerk, and an armourer. Those for 2 dragoon regiments have been established, No. 1 at Stockerau in Lower Austria, and No. 2 at Prosswitz, in Moravia, and the lancer regiment No. 3 at Sambor, in Galicia.

Horses for the full war strength, and 6 per cent. over to meet casualties, are bought, and, after breaking in, are handed over to private individuals under a special contract. By the conditions of this they are to be mustered twice in the year, when fines are inflicted if the horses do not come up in proper condition, and premiums are given for those particularly well kept. At the end of six years they belong unconditionally to the contractor. Each cadre receives yearly 112 remounts to train to take the place of those given over.

Both dragoons and hussars are armed with swords and breech-loading carbines. Five men are trained as pioneers in each squadron.

Roumania.

The Roumanian Army was reorganized by a new law, dated June, 1882, which began to take effect the following year. The peculiar institution of permanent and semi-permanent troops has been retained in the active army for the same reason that it was first adopted, which was the necessity for combining a considerable force with strict economy in the military budget. The length of service, however, of the first category is only a year, while the second receive only an interrupted training.

The whole army is now localized and divided into active army, militia—forming a reserve army—and landsturm. The semi-permanent portion of the first of these is only of infantry, termed "Dorobanz," and cavalry, "Kalarasch," and they are employed on customs duties on the frontier and as gendarmerie respectively. The basis of the territorial organization is the regimental district, which corresponds with the administrative one.

The divisional organization previously existing has been replaced by that of army corps, of which there are four, each composed of 2 divisions of 2 brigades. The staff of these corps were formed last year at Krajova, Bucharest, Galatz, and Jassy. They are each composed as follows:—

Permanent troops	2 infantry regiments.
	1 rifle battalion.
	2 artillery regiments.

Permanent troops	....	1 cavalry regiment (except in 4th army corps)
		1 train squadron.
		1 sanitary company.
Semi-permanent troop	....	8 Dorobanz regiments.
		3 Kalarasch regiments.

The result, therefore, of this new organization is that Roumania has an active army consisting of :—

8 infantry regiments of 2 battalions	....	....	} 85 battalions infantry.
4 rifle battalions	....	....
32 Dorobanz regiments of 2 battalions (one of 3 battalions)	....	....
3 cavalry regiments of 4 squadrons	....	....	} 57 squadrons cavalry.
12 Kalarasch „ of from 3 to 4 squadrons	....	....
8 artillery regiments of 6 batteries	....	....	48 batteries artillery.
1 engineer regiment of 2 battalions of 5 companies	....	....	10 companies engineers.

Besides which there are the following special and departmental troops :—

2 companies and 2 squadrons military police.
4 squadrons of trains.
4 companies of sanitary troops.
4 companies of artificers and tradesmen.

In time of peace the active army numbers from 25,000, after the dismissal of the reserves, to 70,000 during the autumn manœuvres. Generally speaking it may be estimated at about 35,000 men, with 192 guns, of which 2 per battery are not horsed.

On a war strength it numbers 103,890 combatants, made up as follows :—

Infantry	....	....	....	85,000.
Cavalry	....	....	....	8,550, all mounted.
Artillery	....	....	....	7,840 men.
				5,380 horses.
				294 guns.
Engineers	....	....	....	2,500.

making a grand total with departmental troops of 120,000 men.

Each of the 4 army corps has a strength of 25,000 combatants and 72 guns.

There can be no doubt that the above numbers would be forthcoming for an operating army, for there are 320,000 trained men liable to military service. Taking the 8 youngest classes, which used formerly to be 24,000, but are now increased to 32,000, they should give, after allowing for waste, at least 200,000, which would give a balance of 80,000, for the formation of the Ersatz troops, viz. :—

39 battalions,
15 squadrons,
8 batteries,
2 companies engineers,

which with the necessary train formations would not amount to more than 45,000 men.

So far, therefore, as the men are concerned, Roumania has at her disposal a very respectable force, the material of which proved its value in the campaigns against Turkey when fighting as Russia's ally. The present condition though of the army is in several respects far from satisfactory. These are the weak effective of Officers, the condition of the horses for the active combatant formations, and the defective equipment of the train. The existing

companies, squadrons, and batteries have, for the most part, only one Officer besides their commander, and on mobilization, after calling up those on the reserve list, would be 50 per cent. short. The want of horses and the bad condition of those available prevents the proper training of cavalry and artillery, and would render them comparatively useless when wanted. The formation and equipment of the train has been neglected, and could not be adequately supplied by requisition.

Roumania could not as yet think of forming a reserve army from the militia. The men are forthcoming in sufficient numbers, and there are good arms available, but Officers are altogether wanting. At the best, in case of emergency, more could hardly be done than to form 1 battalion, 1 squadron, and 1 battery in each of the thirty-two districts, which would amount to some 40,000 men, and to officer them by means of old retired Officers. They might then be found of some use in supplying garrisons for the fortresses, and to assist in defence of the frontier.

The formation of a National Guard in the towns from the landsturm and the shooting associations, which have lately come into existence, can only be of military value in so far as, being armed by the State, they might be utilized for service in the interior, and thus release troops of the reserve or field army.

The rearmament of the field artillery with Krupp guns and Armstrongs, for mountain batteries, and of the infantry with the Martini-Henry rifle, is being pushed on.

So far as the defensive is concerned we may certainly regard Roumania as adequately provided for all probable eventualities; but the military capabilities of her army for operations in the field are greatly reduced by the defects already noticed. Of these perhaps the most serious is that regarding the Officers, for a properly qualified corps of Officers is not to be improvised, but must take many years to create.

Russia.

The report on the Russian Army is not confined to the changes effected last year, which, with the exception of those in the cavalry, have not been important; but contains an exhaustive account of the general organization of the army. The subject, including the augmentation of the cavalry last year, has been so fully treated by Sir Lumley Graham in this Journal,¹ that it is unnecessary to do more than remark upon the minor changes which have been effected since his papers were published.

The engineer formations have been augmented by the addition of 3 sapper battalions, 2 engineer field parks, and 8 military telegraph parks, together with 1 sapper company in West Siberia. This brings the total of these up to 13 sapper battalions, 6 engineer field parks, including one in the Caucasus, and 16 military telegraph parks, including one in the Caucasus.

The Army of the Caucasus was increased in November of last year by 6 infantry reserve battalions, and 6 reserve battalion cadres were formed in Western Siberia, making, with the guard reserve battalion cadre and the 96 reserve battalion cadres already existing, a total of 109 reserve battalion cadres, each of 5 companies. On mobilization these companies are formed into a battalion by the incorporation of the reserve men, and four of these form a reserve regiment, the fifth being independent. No regular train material has as yet been adopted for these regiments, and all the necessary wagons and horses for it would have to be bought.

¹ "The Russian Army in 1882," in Nos. CXIX, CXX, CXXI, and CXXV of this Journal, by Colonel Sir Lumley Graham, Bart.

The incorporation of native levies into irregular troops continues its course, and the following formations were created in 1883 as a sort of standing militia :—

1	Kuban mounted sotnia.		
3	Terek	„	„
3	Daghestan	„	„
3	Kars	„	„
1	Batum	„	„
2	„ foot	„	„

also a Kutais irregular mounted division of 2 sotnias.

By a law issued in March, 1883, the administration of military law has undergone a complete transformation. The principal features of the new code are as follows :—

1. Regimental courts are established for each regiment, artillery brigade, and all other corps of which the commander has a like status. The president is one of the battalion commanders, a junior field Officer, or one of the senior battery Officers. There are 2 members, being company or squadron commanders, or battery Officers of at least 4 years' service. The president and members are nominated by the commander of the troops, the former for the term of 1 year, the latter for 6 months, with the condition that one of them is changed every 3 months; they continue to perform their regimental duty. The divisional Commander is the confirming Officer of these courts. Corps which have no regularly constituted regimental court have their cases disposed of by the nearest one available under the orders of the General commanding the district.

2. A district court is established in every military district, composed of a permanent president and a certain fixed number of permanent military judges, together with other members who are appointed for a term of 4 months only. These latter are appointed by the General Commanding from amongst the duly qualified Officers as follows :—2 field Officers, who must be battalion commanders, or junior field Officers who have commanded a company for at least 2 years, and 2 company or squadron commanders of at least 4 years' service, of which 2 shall have been in command of a subdivision. Every 2 months one of each of these ranks is changed on completion of their 4 months' tour, and they are not to be detailed again till after a period of 2 years.

3. Provisional military courts may be convened by the Commanders of districts to dispose of cases in garrisons situated at a distance from the place where the district court holds its sittings. They are usually assembled three times in the year, but in addition to these regular occasions it is at the discretion of the General Officer Commanding to order their assembly at any time to try specially important cases of offences against discipline demanding an immediate example. They are composed of a permanent president chosen by the president of the district court from amongst its permanent members, and 4 members appointed for a limited term from the same classes of Officers as those serving on the district court.

4. The Supreme Military Court acts as a Court of Cassation, and is formed of a President and 5 permanent and other members, of whom 2 must be General Officers. Those appointed for a term only are changed after 6 months, in such a manner that one is replaced every 3 months. They are not as a rule to be again detailed under a period of 3 years.

In cases of special importance the General Officer commanding the district can convene a special court to hear the appeals of the prosecutor, or of the defendant against the decisions of the District or Provisional Courts. For this purpose the 2 senior permanent members of the District Court, and 2 Generals or Field Officers, holding commands, are assembled, and their

judgment upon the case before them has equal weight with that of the Supreme Court.

Only those Officers who have qualified in military law at the special academy for that subject are appointed to be Presidents of the District Courts, Military Judges, Judges of Appeal, and Advocates. All those so qualified are further attached; upon leaving the academy, to a District Court for a year.

The proceedings of the several courts are conducted verbally, and are open except in most unusual cases. The advocate of the district is present throughout, excepting during the deliberation and verdict. The Regimental Courts deal with the offences of non-commissioned officers and men which cannot be summarily dealt with, which entail fine up to the amount of 23*l.*, and corporal punishment up to 200 lashes with the knout. The District and Provisional Courts have jurisdiction over Officers and officials, and deal also with the cases of non-commissioned officers and men whose offences entail a heavier punishment than can be inflicted by the Regimental Court. The Supreme Court has the power to confirm, quash, or alter the decisions of the inferior courts, and it decides also disputed questions of law.

Servia.

By a new military law introduced last year, every Servian citizen is bound to serve personally, and his obligation, which begins on attaining 20 years of age, does not cease until the age of 50. The armed forces are comprised under three categories, viz., the active army, in which service is for 10 years, the reserve army 7 years, and the landsturm 13 years.

The active army comprises permanent troops and reserve, and is formed into 5 territorial divisions comprised of the following troops:—

- Infantry, 15 regiments of 4 battalions.
- Cavalry, 5 regiments of 4 squads.
- Artillery, 5 regiments of 8 batteries of 6 guns.
- Pioneers, 5 companies.

In addition to these divisional troops there are—

- 1 guard squadron.
- 1 mountain artillery regiment of 6 batteries of 4 guns.
- 1 garrison artillery battalion of 4 companies.
- 1 mining company.
- 1 railway company.
- 1 reserve sanitary company.
- 2 telegraph sections.

The reserve army is formed similarly into 5 divisions composed of the same formations.

The landsturm is composed of infantry alone, of which 1 battalion is formed by each battalion district, 60 in number.

In all, therefore, the Servian Army should number 180 battalions, 31 squadrons, and 66 batteries. The permanent troops of the active army are, however, the only force regularly maintained in time of peace, and these are on a very weak establishment, as follows:—

- Infantry, 15 battalions of 4 companies of 186 of all ranks.
- Cavalry, 6 squadrons of 176 of all ranks.
- Artillery, 20 batteries of 82 of all ranks.
- Mountain artillery, 3 batteries of 56 of all ranks.

Besides the several technical and administrative services. In all, the per-

manent portion numbers about 17,000 men, of whom 220 are the staff of army commands and territorial divisions. Of these, 11,300 are infantry, and 900 cavalry, with 144 guns.

On mobilization an active army of 70,000 men is formed, with 288 guns, as follows:—Each company of the permanent cadre forms an active battalion, and an Ersatz company, and each battalion forms an infantry regiment and an Ersatz battalion. Of the cavalry each of the squadrons from 1 to 5 forms an active cavalry regiment of 4 squadrons and 1 Ersatz squadron. In the artillery each of the existing 23 batteries and 2 companies is doubled.

The men of the 5 pioneer companies go to form mining, telegraph, and railway companies according to their qualifications. The remainder of each company cadre forms 1 active company, 1 engineer dépôt, and 1 Ersatz pioneer section. The 2 pontoon companies form 5 bridge half sections, 1 bridge train, and 5 Ersatz pontoon sections.

Infantry Tactics.

Last year did not afford any practical experience for infantry in the field, except in connection with French colonial enterprises, which were on a small scale, and in connection with which no fighting to speak of took place. There has notwithstanding been no lack of activity displayed in the training and perfecting the infantry soldier at home. Every European army has continued to work steadily with this view, though unostentatiously and principally at matters of detail which have not attracted particular remark. For many years subsequent to the close of the Franco-German War, attention was directed almost exclusively to the investigation of tactical formations, with a view to adopting such as should appear most suitable for attack and defence under the new conditions entailed by the general introduction of the breech-loading rifle.

This question, if not definitely settled, has at least been indefinitely postponed, while in its place has sprung up the endeavour to still further perfect the infantry arm, and ensure the soldier using it with the best results. This during 1883 usurped the foremost place in practice and in military literature.

As applied to the German Army the subject has been divided under two heads, the first being whether it is advisable to replace the present arm by a magazine rifle, and the second as to whether the sighting arrangements are not susceptible of improvement.

Considered from a tactical point of view there are many objections to the general adoption of the magazine arm, even supposing it to be possible to obtain one which would fulfil every favourable condition of an arm for war purposes. The repeater, for instance, weighs about 1 lb. more than the ordinary rifle, and it does not appear how it can be possible to materially diminish this extra weight while maintaining the efficiency of the arm. The more rapid shooting, which is the principal advantage claimed for it, is not by any means free from drawbacks. With the increased facility and rapidity of firing the excitement of the soldier increases also, whereas the chief difficulty at all times when engaged is to keep him cool and induce him to fire steadily. Another important factor is the smoke, which often plays a kindly part to one side or the other of engaged troops by obscuring the view of their opponents, and which must necessarily be increased enormously with the magazine rifle, unless a smokeless powder can be substituted for that in ordinary use.

But even the rapidity of fire claimed as its undeniable advantage has its limits, and will forbid the general employment of the magazine, for it would not be possible to keep the troops supplied with the largely increased amount of ammunition which would then be necessary. For special moments, no

doubt, an attachable magazine may be of the utmost value, but it will be hardly possible, even with the best trained troops, to prevent their firing it away at the wrong time. The replenishment of it in action is hardly practicable; at least, it would demand a coolness on the part of the men in face of the enemy which can by no means be counted upon.

In short, v. Löbell comes to the conclusion that the possession of the magazine rifle in itself is not calculated to give any paramount tactical superiority, and certainly does not offer any such decisive importance as did the introduction of the breech-loader.

Notwithstanding this and the expense which would be entailed, as well as the inconvenience and difficulties in the way of changing the arm throughout the army, if any other Power should adopt it, Germany must follow suit. At a time of general arming and of large armies, the moral factor must not be disregarded so far as to allow the chance to arise of meeting a better armed opponent in the field.

The general introduction of what is ordinarily called field-firing as a part of the regular instruction of the soldier has led to many interesting experiments, of which those made at the Belgian School of Musketry are of especial value. From the results of these certain deductions were drawn which may be briefly summarized as follows:—

1. At a range of 650 yards the difference between the losses of infantry in line and company columns are immaterial.

2. At from 1,300 to 1,750 yards the losses in company column formation are about a quarter greater than in line, but this proportion does not increase with the distance.

3. When troops are lying down their losses in either formation are about a half.

4. At from 650 to 1,750 yards the losses in a line formation standing up are almost identical with those of a column lying down.

5. Individual fire gives better results than volleys.

6. Against cavalry 4 volleys can be fired in the 53 seconds of time required by it to close from 550 to 100 yards distance. In this practice 60 men firing 4 volleys (240 shots) hit 38 cavalry figures.

As a practical result it is advocated that on the approach of cavalry bayonets should be fixed, and fire reserved until they arrive within 450 yards. The first volley should then be fired, sighting for 350 yards, followed by two others, after which the troops attacked prepare to receive cavalry.

The results of the firing in squares are not given, for apart from the reduced number of rifles which can be brought to bear in this formation, there are other serious disadvantages connected with it. In any case, armed with the present rifle, infantry which cannot repel cavalry successfully without forming square deserve to be ridden down. The firing at long distances, which for a time was much in vogue in the German Army, has been discontinued.

In France the Drill Regulations of 1875 have been extensively revised. The careful search for cover by the advanced line of attack formerly inculcated is now forbidden, and it is pointed out that the immediate object of the attack is to come to terms with the enemy, and to break his resistance at whatever sacrifice may be necessary. A brave and energetically led infantry, it is added, can advance against well-defended intrenchments under the heaviest fire, and carry them. The instructor must not omit to teach the men how to utilize the varying formations of ground; but in doing so he should impress on them never to seek cover which will impede the use of their arms and prevent a rapid advance.

In connection with this a new attack formation is introduced, which varies according as the company is acting independently or forms part of a larger unit. In the former case, one section only, normally the first, forms the extended line, supported at a distance of 220 yards by a second section, the

other half company in column of sections forming the main body at an interval of 280 yards. This is an approximation, if not a copy, of the German system as approved in 1876, and which has not been without its advocates for introduction into the British service. But before this could be done with any advantage, the Continental system of fewer and larger companies would have to be adopted, which there does not seem to be any prospect of, at present at least.

When the whole battalion is employed for attack, whether independently or as a portion of a larger body of troops, the formation is different. The two leading companies then form the extended line and the supports, the remaining two companies serving as reserves. Each of the advanced companies has two of its sections, normally the first and third, in the extended line, and the remaining two are formed in line, with intervals, at a distance from it of 220 yards, as supports. The two companies in reserve follow in line of half-company columns of sections, with intervals of 33 yards between them, 330 yards in rear.

This differs from the German system, in which the two advanced companies are formed as if acting independently, and approximates very closely to the Russian method introduced two years previously. In the latter, however, the reserve companies are formed normally in company columns, and there is an interval of 415 yards between the extended line and its supports.

The battalion always forms for attack from line of half-company columns. Fire is not opened until the advanced line arrives within 600 yards—in open ground not so soon—and the advance is then effected by means of alternate rushes. The supports gradually close on the extended line, and are moved up to it when it is unable to advance any further without assistance, generally at about 440 yards. During the further advance the companies in the front line close in towards their centre, to allow of the reserves moving up. This follows the German regulations, which, while leaving a great deal to individual discretion, lays down that the troops in the extended line, after being reinforced, must close while advancing in such a manner as to admit of the reinforcing bodies being moved up into it without being broken up.

One reserve company follows 110 yards in rear of the centre, and eventually fills up the interval thus created between the inner flanks of the two advanced companies; the other follows at 220 yards from the extended line. Both of them are advanced as far as can judiciously be done in close order, and at least in sections.

The further advance is carried out rapidly by alternate companies up to 280 to 220 yards distance from the enemy's position, when bayonets are fixed and independent fire opened. If this fire should not of itself prove decisive, the remaining reserve company is brought up in close formation, to give a fresh impulse, and the whole storm the position, supported by the troops in second line.

In comparing the revised regulations with those that preceded them, it is noticeable that a far more energetic interpretation is given to the offensive. Firing at long ranges is limited; the continuous reinforcement of the extended line, and the complete utilization of the reserves to that end, is provided for in such a way as must exercise a material influence on the forward movement; but, above all, the former excessive depth of the battalion in its formation for attack is diminished by a half, and the conduct of the attack lightened in the same proportion that its power is increased.

Interesting parallel tables are attached to this particular portion of the "Berichte," showing the several methods of infantry drill and attack formations as they exist at present in the greater European armies, into all of which new regulations have been introduced more suited to the requirements of the actual organization and improved arms during the last eight years. A comparative study of these cannot fail to be of interest, and it will be found that

in the more important portions, such as the formations for and the methods of carrying out the attack, whether as independent companies or as part of a larger body, the principles adopted are generally identical with those first introduced by Germany, and in many cases approach it nearly in the details of execution.

It is somewhat remarkable, therefore, that both Austria, in her amended regulations of 1880, and Russia, in those introduced a year later, should both have adopted the system of reinforcement by mixing up the supports with the already extended line. There can, one would have supposed, be only one opinion as to the merit of this compared with that adopted by other countries, of bringing up the supports, in comparatively close order, into the gaps formed with that view by closing in during the advance. All experience would seem to point to the superiority of the latter method, which has now been introduced into the British Army, and it is certainly a subject for surprise that it has not been more generally adopted.

Cavalry Tactics.

There have not been any considerable changes in cavalry tactics during the past few years. On the other hand, the increased importance of that arm for strategic purposes has been acknowledged, and has led to the special training of cavalry with a view of fitting it for these more thoroughly. This is the natural consequence of the further development of the independent employment of cavalry in advance of armies operating in the field, first resorted to by Germany in her late campaigns. The value of such a system was then fully proved by experience, and adopted, in theory at least, by other armies. But few went beyond this, or attempted to put it into practice by the special training of large bodies of cavalry.

Such armies as did so indeed restricted their exercises to collecting together for a brief period a few regiments, or perhaps a Division of cavalry, and working against an imaginary enemy. These exercises have their value, and are not to be discouraged; but it is hardly necessary to say that they can in no way be compared with real warfare, in which a more or less enterprising enemy has to be considered. This came to be recognized a year or two ago, when France and Austria both held special manœuvres, in which large bodies of cavalry were opposed to one another. Other nations have since done the same; but only as exceptional exercises beyond the general scheme of training, and more for the instruction of General and Staff Officers than as a practical training for the troops.

Russia alone of all the military Powers appears to have grasped the fact that it is not sufficient to incorporate together on the outbreak of war a number of cavalry regiments armed and trained in the ordinary manner, and then to expect from a corps so formed the arduous services demanded from cavalry acting by itself, at a distance from the army to which it belongs. This may probably be owing to the circumstance that Russia has at her disposal so large a force of cavalry, regular and irregular, that she can better afford to employ considerable masses for special purposes.

However that may be, Russia has maintained for years that large bodies of cavalry, properly armed, formed and trained, are quite capable of acting independently and performing most valuable services to the army at large. But she has done more than this, for she has set herself to work so to organize, arm, and train her cavalry as to give practical proof of this.

Rightly or wrongly, her immediate object in doing this is supposed to be with a view to placing herself in a position to profit by her superiority in cavalry in the event of a rupture with her powerful western neighbour. When this takes place, as it evidently must do sooner or later, Russia is determined to gain the first advantage by taking the initiative and moving

large masses of cavalry across the frontier with the double object of covering her own concentration and interrupting as much as possible that of her neighbour.

In any case, a very material increase has been made in this arm, and no effort is being spared in the preparation in other ways of the cavalry for the services expected of them. Not only have the whole of the regular cavalry of the line been converted into dragoons, after the manner of the corps of Nicholas I, and armed with the Berdan rifle and bayonet, but even the Guard regiments are destined to a like change when ordered to take the field, though the cuirassiers and lancers of the Guard still maintain their old arms and equipment in garrison. Even the Cossack troops have not been allowed to retain their historical lance, which is now only carried by the front rank, and may soon make way altogether for the Berdan.

The increase of regiments by a squadron, effected last year, is of great value, for it not only augments the regular force by 104 squadrons, but it will further admit of training and exercise being carried out with strong regiments on a war footing when the change shall have been completed, which will be in about two years' time.

The thorough instruction of these troops in what, for a large proportion of them, is a new arm, has not been lost sight of; and new musketry regulations provide for their practical training, for which purpose an ample supply of ammunition is provided. But still greater stress has been laid, if possible, upon the training of both horses and men, so as to enable them to adequately fulfil their important rôle. To do this adequately must demand great exertions in the way of long and rapid movements and the passage of obstacles. This is provided for by the exercises in forced marches and in swimming rivers, which have been practised lately by bodies of cavalry as a regular exercise.

The marches are made with a view to covering the greatest possible distance in the shortest possible time. They were, when first introduced, only carried out by individual Officers, since which they have been extended to formed bodies of greater or less strength with excellent results. At a cavalry manoeuvre last year, for instance, at Achtyrka, a squadron of 162 horses marched from 5 to 6 days at a rate of 38 to 43 miles a day. A still greater feat was achieved by 2 sotnias of Cossacks, which marched from Samostje to Warsaw in 3 days, being at the rate of nearly 70 miles a day, but only about two-thirds of the horses held out.

In the same way swimming was practised in the Warsaw, Odessa, and Moscow districts, the horses being regularly taught with the assistance of inflated bags tied under them. The Suprasl was crossed by the entire 4th Cavalry Division swimming.

The training of the cavalry in pioneer duties is also being carefully attended to, and great importance attributed to it. For the purpose of instruction in these, both Officers and non-commissioned officers are attached to the engineer camp for a course, which lasts from a fortnight to two months.

In the 4th Cavalry Division a regular pioneer squadron has been formed, which is also trained in telegraphy and heliography.

When we consider that Russia can dispose of 21 cavalry divisions, numbering about 3,503 sabres and 12 guns each, with a training such as that which has been briefly described, its value can hardly be overestimated. After providing for the manifold duties connected with covering the operating armies and taking part in the ordinary duties of reconnaissance, large masses could be detached on independent enterprises, such as raiding into the enemy's country with a view to hindering the concentration of his troops, operating against his communications, and seizing in advance of the enemy important strategic points and positions which their constitution will enable them to hold against any but large bodies of infantry.

In the manoeuvres all these duties form an important part in the scheme

of operations, and have hitherto given very satisfactory results. General Gourko, of Balkan celebrity, who commands the Warsaw district, issued an order at the conclusion of the manœuvres last year, in which he dwelt especially upon the fact that such duties must form in the future the principal rôle of cavalry, and that the employment of masses of cavalry must be carefully avoided on the field of battle, though much may still be expected from small bodies.

In connection with these formations on a large scale of cavalry destined to perform on occasion dismounted duties as infantry, the subject of "mounted infantry" as a distinct branch is briefly discussed by von Löbell. It is admitted by him that this special service may be of much use in connection with operations such as the British expeditions in South Africa, Egypt, or elsewhere, and French operations in Algeria and Tunis, though he does not admit that past experience has established this quite satisfactorily. But for operations on a large scale against a European enemy such formations are not looked on with any favour.

The new French Règlement on the duties of armies in the field contains valuable instructions for the employment of cavalry divisions when covering the advance of an army. Their leaders are to receive their general instructions from the General in chief command; but they are not to be restricted in the choice of their measures and their dispositions. The divisions must at all times be ready for action, and should therefore not be too much extended.

For reconnaissance purposes Officers' patrols should be employed in the first place, followed by reconnoitring squadrons, ordinarily two from each division. Each of these should be divided into two halves, of which one will be extended in patrols of from two to three horses, the other serving as its support. The former extend along the front and round the flanks of the enemy, while the latter are posted between them and the main bodies of the divisions.

The immediate security of the Army is provided for by the cavalry brigades of army corps, at a distance in front of half a day's march. As a rule, one of the two regiments of the brigade performs all the duties of an advanced guard, and furnishes scouts, followed by the remainder as a reserve at a distance of one to two miles. The second regiment marches about the same distance in rear, and about six or seven miles in front of the infantry columns.

On the commencement of an engagement the cavalry clears the front of the infantry. Its sphere is then on the rear or flanks of the enemy, in meeting the opposing cavalry, and to fill up gaps in its own line of battle. Exhausted infantry and artillery on the move form the most appropriate objects for its attack, which must be vigorously and rapidly delivered. In case the enemy is forced to fall back, it must endeavour, in concert with the horse artillery, to convert the retreat into a rout. If the enemy should prove victorious, the cavalry must be prepared to sacrifice itself to cover the retreat.

Field Artillery Tactics.

In 1882 v. Löbell's publication contained some interesting remarks on the subject of the employment of artillery in combination with the decisive attack of infantry. These are concluded in the present volume by a reference to two articles on the same subject, one of which was written by the late celebrated Russian General Todleben, and the other was published in the "*Révue Internationale*."

In the former the writer states it as his opinion that the infantry attack should be preceded by a concentrated artillery fire at a range of from 2,800 to 1,700 yards. So soon as the enemy's artillery is perceptibly weakened, the

first infantry line should be advanced, and the artillery pushed forward to positions within 1,100 yards of the enemy, and support the infantry by a continued fire. However desirable it may be that the guns should not be masked by the infantry, this must often be unavoidable on account of the ground and the necessary massing of the batteries.

When this is the case the guns may safely fire over the heads of the infantry at ranges of 1,400 yards and upwards; but at shorter ranges guns which are masked must be content to direct their fire on the enemy's reserves. General Todleben does not say what proportion of the guns should actually accompany the infantry to within short range, but he evidently does not favour the employment of large bodies in this manner.

The other article alluded to above adopts the same views, and maintains that the employment of any considerable force of artillery with the infantry can only have the effect of hampering its movements. The main body of the guns should therefore be employed to support the attack from positions at a distance of from 1,300 to 1,600 yards from the enemy, a very small proportion only being detached to accompany the infantry. The guns detailed for this purpose, at the rate of a battery per division, must be pushed boldly forward, and will fulfil their principal object by the moral effect produced by their fire.

This manner of employing the artillery is based upon the principle that the mass should be employed under such conditions as will ensure the maximum effect being produced by their fire. It is evident that this condition will be best fulfilled by the guns occupying good positions at effective range, in which they will be stationary and comparatively undisturbed, than by being mixed up in the turmoil of the immediate attacking line. These views are in accordance with the latest regulations of the German Army on the subject, and though not without their opponents, they may be accepted as sound deductions from more recent experiences on the field of battle.

Fortresses and Railway Communications.

On the Franco-German frontier both the railway system and the water communications have long attained to a development sufficient to fulfil all the war purposes of both those States. This is not the case on the frontiers of Russia with Germany or Austria, where the deficiencies in this respect have been generally acknowledged, and new works demanded. Even where the requirements for the concentration of the field army are fairly fulfilled, the means are inadequate for bringing up at the same time the necessary troops for garrisoning the large fortresses, the immense amount of material generally required to place them in an effective state of defence, and the siege parks, with the enormous quantities of ammunition and material required for them.

The requirement in the matter of ammunition especially is a constantly increasing factor, on account of the number, weight of metal, and rapidity of firing of the guns now employed, and the improved conditions of defence that have to be overcome, while the time-honoured necessity remains of bringing up a sufficiently large amount of it to ensure the operations when once commenced being conducted without a check.

A consideration of the railways on the Russo-German frontier which are of any value to the system of fortresses situated there, shows that two main lines of direct communication formerly existed. The northern one of these ran from St. Petersburg by Wilna to Königsberg and Warsaw respectively. The more southern one was from Moscow by Smolensk, Minsk, and Brest-Litowsk to Warsaw.

To these have been added two new lines, one from St. Petersburg by Riga and Scharoli to Tilsit, and the other further south from Moscow by Kaluga

and Novo-Belitz to Brescz-Litowsk and Lemberg respectively. Other lines are being actively extended, some of which are in the close vicinity of the German frontier. The further development of the railway system must be dependent upon the construction and situation of the new fortresses, regarding which reports are very contradictory.

The places most generally named as selected for the purpose are Kovno, Goniadz, Grodno, Sieradz, Dubno, Grajevo, and the position of these places in relation to the railway communication gives some probability of the truth of these suppositions. Lately also the fortification of Prenn on the Niemen, some miles south of Kovno, has been planned for the defence of the passage of the river, and in connection with it a new line of rail meeting the Wilna-Vitebsk line.

This will form a part of the general system of defence with Kovno, Grodno, and Grajevo. For the protection of Warsaw 15 forts have been designed, of which 7 are to be on the left bank of the river, on a circumference of 18 miles, and at a distance from the place of 4 miles. Within this first line, and about $1\frac{1}{2}$ miles from it, a second line of 4 forts of similar dimensions to the others are to be constructed.

The protection of the place on the right bank is to be provided for by 4 still larger forts situated 4 miles in advance of the suburb of Praga.

As regards the Austro-Russian frontier, the necessity for completing the railway system so as to facilitate the concentration of an Austrian Army with precision and rapidity has been fully recognized. In West Galicia, up to the present time, only the line Muncacs-Stryi, for the collection of troops at Lemberg, has been undertaken, and the condition of the railway system for a concentration on the Cracow-Lemberg line continues very unsatisfactory and inadequate. For this purpose three lines exist, viz., Oswiecim-Cracow-Tarnow; Eperies-Tarnow-Przemysl, and Michaly-Stryi-Lemberg.

Of these, the first is situated in such close vicinity to the frontier as to be in great danger of interruption by an enemy from the other side of it, which would necessitate the others being so crowded and overworked as to make it very questionable whether even the field army could be concentrated sufficiently early. With a view to rectifying this, and also to the defence of the large fortress of Przemysl, a new line has been projected. It is to be constructed, roughly speaking, parallel to the more advanced frontier line Ungarisch-Hradisch by the Kara Pass to Silein, following a portion of the Kaschau-Oderberg line to the Jablunka Pass, and then by Seybusch to Cracow on the one side, and by Neu-Sandek to Przemysl on the other.

As regards the strengthening of her frontier defence, Austria has latterly chiefly confined her attention to the security of the passes in the Tyrol, which forms in itself such a strong natural protection on the side of Italy, by an extension of the fortifications in the Pusterthal. But if no special activity has been noticeable in the construction of fortresses, Austria has, on the other hand, exerted herself busily to place her siege trains and garrison artillery material on such a footing as to be ready for all eventualities.

Turning to Italy, we find that she has been busy in perfecting her system of frontier defence in many directions. Rome, as a central place of arms, has been fortified, and secured against attack by assault. On the borders both of France and Austria the existing fortifications are being strengthened, and new ones constructed after a scheme proposed by General Pinelli. In the former direction the road over the Mont Cenis is being secured by three forts, which are approaching completion. Enormous sums are being spent in guns and artillery material.

France also, while continuing the completion of her new defences, has undertaken the complete reorganization of her siege-trains, and has formed them of 180 guns of the following calibres :—

UPON MILITARY MATTERS IN 1883.

	8	8·6-in. guns, each with	800 rounds.
40 long	6·1	" " " "	1,300 "
20 short	6·1	" " " "	1,100 "
60	4·7	" " " "	1,150 "
18	3·7	" " " "	1,150 "
8	10·6	" mortars	600 "
14	8·6	" "	600 "
12 smooth-bore	5·9	" "	600 "

Each is divisible into 2 half-trains of 4 parts, viz., the main body, the supporting portion, the transport park, and the railway division. The main body consists of three sections, of which the first is composed of 108 vehicles for the conveyance of all that is necessary to the establishment of the park and the construction of the batteries. The second section contains 20 long and 10 short 6·1-in., 30 4·7-in., and 9 3·7-in. guns, 6 smooth-bore 5·9-in., and 7 8·6-in. mortars, 50 wall pieces, defensive implements, and ammunition. The third section carries ammunition alone.

The supporting portion is comprised equally of three sections, the numbering being carried on. Thus the fourth section carries the rest of the ammunition for the main body, the fifth contains the material for establishing workshops for the repair of material, and the sixth has the guns required for special purposes, viz., 4 8·6-in. guns and 4 10·6-in. mortars, with their ammunition and appurtenances. The transport park is composed of 2 columns, each of 44 wagons.

The railway division conveys in 2 half-trains material for the construction of 13 miles of line.

Thirty-four trains are required for the conveyance of a half-siege train by rail, viz., first section, 2; second, 6; third, 5; fourth, 6; fifth, 1; sixth, 5; transport park, 6; railway division, 2; and for the *personnel*, 3.

H. H.