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Von Löbell's Annual Reports on the Changes and Progress in Military Matters During 1896

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VON LÖBEL'S ANNUAL REPORTS ON THE CHANGES AND PROGRESS IN MILITARY MATTERS DURING 1896.¹

Précis by Colonel H. J. T. HILDYARD, Commandant Staff College.

THE present number of the valuable military annual that still bears the name of the distinguished officer who originated, started, and for many years superintended its publication, is the twenty-third. Notwithstanding the improvements introduced from year to year in form and matter, while under the direction of Colonel von Löbell, his successor has still found room for the introduction of new matter that cannot fail to prove of interest to every military reader.

In his preface, Lieutenant-General von Pelet-Narbonne refers briefly to the changes that have been made by him. In the first part, the Budget, especially the Army Budget of each State, the forces of which are dealt with, is gone into more closely, and the establishments of tactical units in peace and war are given, so far as they are known.

In the second part, a valuable addition is made to the chapter hitherto reserved for the tactics of infantry, by including in it the consideration of the action of the several arms in combination.

H. H.

REPORTS ON THE ARMED FORCES OF INDIVIDUAL STATES.

GERMANY.

Peace strength.—

Infantry battalions :—

			Officers.	Men.
Lower establishment	-	-	18	596
Higher „	-	-	22	660

Cavalry squadrons :—

		Officers.	Men.	Horses.
Lower establishment	-	4	133	133
Middle „	-	4	138	137
Higher „	-	4	146	140

¹ The delay in printing Colonel Hildyard's valuable *Précis* has arisen from the decision arrived at by the Council in July, that the three competing Essays for the Gold Medal, which were "honourably mentioned," should be printed in the JOURNAL.—ED.

Field Artillery—field batteries :—

	Officers.	Men.	Horses.	Horsed Guns.
Lower establishment	4	108	44	4
Middle „	- 4	119	60	6
Higher „	- 4	127	75	6 and

2 horsed ammunition wagons.

Field Artillery—horse batteries :—

	Officers.	Men.	Horses.	Horsed Guns.
Lower establishment	4	91	76	4
Middle „	- 4	112	105	6
Higher „	- 4	120	120	6 and

2 horsed ammunition wagons.

Particulars regarding the strength in war are not published.

Organisation.—The law of the 3rd August, 1893, by which the time with the colours for the infantry was fixed at two years until the 31st March, 1899, necessitated the increase of establishments, the fixing of an average present strength of privates, and the creation of fourth battalions to infantry regiments. The first two measures had for their object to bring the units up to the strength necessary for their efficient training and immediate employment, and also to provide for the uniform training of the recruits. In peace, the fourth battalions were to relieve the first three battalions of duties that would interfere with this. In the event of mobilisation they were to facilitate the creation of new and Reserve formations.

The establishment of the fourth battalions was fixed for this purpose at only 193 non-commissioned officers and men. The raising of the establishments and the fixing of the average strength have been found beneficial as regards the peace training of the infantry. But in the fourth battalions, though they have been of value in relieving the battalions on a full establishment, experience has shown that the small number of men available, after detachments for various duties have been made, are insufficient for the purposes of exercise. It would be necessary to abandon the idea of a thorough methodical company training, and thus some 13,000 men would be passed annually to the Reserve who had received an incomplete training.

When this evil was recognised, it was decided to connect the fourth battalions into bodies, which, while maintaining as far as possible their original object, could take their place both in peace and war with the other battalions. The law of the 28th June, 1896, therefore, provided that from the 1st April, 1897, without raising the peace strength, every two of the fourth battalions should be united as a single battalion, which would be brought up to a strength of about 500 by detaching a few men from each of the first three battalions. Every two of these united battalions is to form an infantry regiment, and the two regiments thus formed in each army corps are combined in an infantry brigade. This caused to be newly created 19 infantry brigade staffs (16 Prussian, 2 Bavarian, 1 Saxon), 42 infantry regiment staffs (33 Prussian, 4 Bavarian,

3 Saxon, 2 Wurtemberg), and 86 infantry battalions (66 Prussian, 10 Bavarian, 6 Saxon, 4 Wurtemberg).

On the completion of this re-organisation the following will be the composition of the German Army :—

Infantry	-	-	-	-	624 battalions
Cavalry	-	-	-	-	465 squadrons
Field artillery	-	-	-	-	494 batteries
Foot „	-	-	-	-	37 battalions
Pioneers	-	-	-	-	23 „
Railway troops	-	-	-	-	7 „
Train	-	-	-	-	21 „

Increase in the Number of Officers.—In the Regular Army the number of second lieutenants admitted was 825 in excess of the vacancies that occurred amongst all ranks during the year.

In the Reserve and Landwehr the increase was 676.

ABYSSINIA.

The military importance of the country will in coming years be materially increased, after it has conquered its complete independence, both by means of a stricter centralisation on the basis of Menelik's successes of an increased employment of modern arms, and an improved training in their use by European instructors (Russian and Frenchmen).

Composition of the Forces.—In peace as well as in war the Army is composed of contingents of unequal strength from the several portions of the kingdom (Shoa, Harrar, Godsham, Amhara, Wollo-Galla, Tigré). In war, for fighting and camping, it is further formed into an advanced body, right wing, centre, left wing, and a rear body. Each of these portions, the strength of which bears a certain proportion to the whole force, consists of infantry and cavalry, sometimes also of artillery under a special commander, and is permanently composed of the same troops. The centre is always under the direct command of the commander-in-chief; in all important campaigns this is the Negus.

Strength.—The Active Army (Wotader) numbers, according to Ilg, whose estimate coincides with that of the Italian Cecchi, about 150,000 combatants. To these have to be added irregulars (Fanno), the numbers of which cannot be fixed with any certainty; and in some circumstances a sort of Landsturm. Various travellers give the number as much higher, but include probably the train. It is not, however, the number of combatants alone that is decisive, but still more the number of serviceable firearms available. During the last war these may be given as from 80,000 to 90,000, the best, and comparatively the greater number, of which were in Shoa and Harrar. The number of these will probably increase rapidly; the ship "Doelwyk," captured by the Italians in August, 1896, and released on the conclusion of peace with Menelik, alone carried 45,316 rifles and 5,025,832 cartridges.

Organisation.—Besides infantry, cavalry, and artillery, an ammunition park and supply troops are in existence. The creation of the last three

services, and of a more strongly-marked Army of the first Line, have been the work of Menelik, and they have been thoroughly carried into execution in South Abyssinia only.

The strength of the contingents to be furnished by the several regions is dependent upon the numbers of the population and the objects of the war. Generally speaking, a Ras has command of from 10,000 to 20,000 men; a Dedjasmach about 5,000. There is a further delegation of command to commanders of 1,000, of 100, of 50, and of 10 men.

Arms.—The infantry are armed with rifles of every system; the greatest number have either been bought or captured in the field, and are Remington, Gras, and Vetterli rifles. A portion still takes the field armed with spear and shield, acquiring a rifle when opportunity occurs by death or capture in the course of the operations. The infantry also carry a sword, and very often a knife as well.

The cavalry have a carbine in place of the rifle, and many of them have the lance.

The artillery for employment in the field consists of 24 Hotchkiss guns arranged for pack transport, 2 Maxim guns, and a number of American mitrailleuses. There are further in possession, though not for employment in the field, twelve 8-centimetre muzzle-loaders, two 8-centimetre breech-loaders, and two guns of position taken from the Egyptians, and a considerable number of obsolete guns. At Amba Aladshi (7th December, 1895) four Italian 7-centimetre mountain guns fell into the hands of the Abyssinians, and at Adowa (1st March, 1896) 56 of a similar nature. The entire artillery park is in the hands of the Negus; the several Ras have only two guns apiece allotted to them.

Abyssinia is entirely dependent upon foreign countries for the supply of modern firearms and ammunition, notwithstanding that a manufactory for black powder exists in Shoa.

AFGHANISTAN.

State of Railway Extension by England and Russia.—The trans-Caspian railway, which was opened in 1888, runs from Usun Ada on the Caspian, by Kisil Arvat, Geok-Tepe, Askabad, Nurek, and Merv, to Chardjui, crosses at this place the largest wooden bridge in the world over the Amu Darya, and runs on by Bokhara, Katta, and Kurgan, to Samarkand. An extension has been decided upon from Merv towards Kushk in the direction of Herat (about 30 versts); the surveys are already completed. The continuation of the railway from Samarkand to Tashkent, to the extent of 300 versts, is in course of construction. These two sections, together 330 versts, are to be completed within two years. By means of this, Russia will have approached right up to Afghanistan.

This has hastened the English in the construction of their railways in the Indian border territory. On the 1st January, 1892, by the opening of the Khojak tunnel, traffic was commenced on the Shikarpore-Quetta line as far as the most advanced British frontier post at New Chaman, 72 English miles from Kandahar, 441 from Herat, and 684 from Merv. Its

continuation to Kandahar is a settled matter, and, according to statements in the Press, this extension is already in course of construction.

Organisation.—The existing organisation of the Army was commenced by the present Ameer in 1885. During the last two years, and especially during 1896, great activity was displayed in its re-organisation. A peculiar method of recruiting has been introduced. Every eighth man of the population is by it made liable to service, which, if the population be estimated at six millions in round numbers, would give 75,000 men, or 1½ per cent.

The present peace strength, as derived from private sources in Teheran, is about 60,000 infantry and 8,000 cavalry. About 120,000 rifles are available, of which some 70,000 are modern single-loaders, and 510 guns, of which about one-third are of modern systems.

The war strength of the Regular Forces could, it is stated by the same authority, be easily brought up to 100,000 men. The irregular troops, Militia, foot and horse, would probably amount to about a similar number.

The fortifications of Herat, Kabul, Farrah, Kala-Nau, Maimena, Kandahar, and Ghuzni, have been materially improved during the last two years. Herat especially, by the adoption of the English system, and by placing the magazines in security, has been secured from an assault by the Russians, and would require a regular siege for its reduction.

BULGARIA.

Peace Strength of Units :—

	Officers.	Men.	Horses.	Guns.
The battalion	- 24	456	—	—
„ squadron	- 5	144	100	—
„ battery	- 5	115	60	8

War Strength of Units :—

	Officers.	Men.	Horses.	Guns.
The field battalion	- 14	1,063 (1,008 rifles)	—	—
„ squadron	- 6	227	230	—
„ battery	- 5	182	159	6 with 8 horsed ammunition wagons.

The reserve battalion has 10 officers and 859 men.

In consequence of the increase to the war establishments of the troops the war strength of the larger bodies is greater than in previous years.

Each of the six infantry divisions will consist of the following :—

	Officers.	Men.	Horses.
Divisional staff	- 9	41	48
4 infantry regiments	- 268	18,000	888
1 artillery regiment	- 41	1,151	1,015
Pioneer battalion	- 14	596	67
2 squadrons divisional cavalry	- 12	454	460
Total rationed strength	- 344	20,242	2,478

These numbers do not include the train and auxiliary services, the changes in which have not been settled.

The cavalry division will number :—

	Officers.	Men.	Horses.
Staff - - - - -	5	14	26
Four cavalry regiments - -	104	3,240	3,386
	<hr/>	<hr/>	<hr/>
Total rationed strength	109	3,254	3,412

The available strength of the Bulgarian Army, estimated in 1895 at 179,000 bayonets, 7,082 sabres, and possibly 432 guns in the Active Army, Reserve, and national levies, will by the increase to the establishments have received a material augmentation.

Frontier Guards.—In order to relieve the infantry of the duties of guarding the frontier, special companies, one per division, have been raised for the purpose; their strength varies from 200 to 400 men. They will no doubt be employed sooner or later to strengthen the Regular infantry formations.

Artillery.—The new formations of artillery, discussed in the previous year's reports, were not carried out exactly as had been contemplated in the original plan. Thus the new horse artillery battery that it was intended to add to the 4th Artillery Regiment was not raised, its place being taken by a field battery. The new formations actually carried out consisted of the creation of a third division (of 3 field batteries) to the 4th Artillery Regiment, of 3 new mountain batteries, and mountain divisions (each of 2 mountain batteries) for the 2nd, 3rd, and 4th Artillery Regiments. During 1897, a new division (of 3 batteries) will be created in the 1st, 2nd, 3rd, 5th, and 6th Regiments.

In war the first and second artillery divisions (6 field batteries) will form the divisional artillery of the six Active Army divisions. The remaining six artillery divisions (each of 3 field batteries), together with the Reserve batteries to be formed, will provide the divisional artillery for the six Reserve divisions. There will be sufficient modern material for the Reserve batteries, for the peace batteries consist of 8 guns, whereas in war the batteries have 6 guns only. Thus the 38 field batteries and the 1 horse battery on the peace establishment can furnish 78 guns, or 13 batteries of 6 guns.

Increase of Rank and File and Reduction of Train.—The changes that are being effected are worth noticing, though details are not yet complete. By them 22 rifles are to be added to every company on war strength (an increase from 230 to 252). This in the 24 regiments of the Active Army provides an increase of 8,448 rifles. The reductions in the train are no less important; in the infantry regiments the number of wagons is reduced from 69 to 49, equivalent to 20 vehicles less; in the artillery regiment the reduction is still greater, being from 136 to 85, or 51 less.

FRANCE.

Peace Strength of Units :—

	Officers.	Men.	Horses.	Guns.
Company - - -	3	126	—	—
Squadron - - -	6	144	139	—
Field battery - - -	5	103	61	4 to 6
Horse battery - - -	5	105	87	4 to 6

The rifle companies have an establishment of 136 men, the companies of the Alpine battalions have 4 officers, 153 men. The companies, squadrons, and batteries in the 6th Region and the companies of some of the regiments of the 7th and 8th Army Corps have an increased establishment, which is met by most of the companies in the interior of France being on a reduced establishment. The companies in the 6th Region are to be brought up to 200 men in 1897.

War Strength of Units :—

	Officers.	Men.	Horses.
Company - - - -	4	251	—
Squadrons - - - -	5	155	160
Field battery - - - -	4	about 180	163
Horse - - - -	4	about 188	217

The total strength of the Army in 1896 amounted to 28,223 officers and 539,179 men, an increase on the preceding year of 363 officers and 16,667 men. The number of horses was 142,661, including 12,512 of the Gendarmerie, an increase of 930. The *Spectateur Militaire* estimates the number of able-bodied men in France who have received a more or less complete military training at about 4,800,000. In this calculation the average strength of the yearly classes, after the necessary annual deductions, is taken as 200,000 men.

No military legislation of a fundamental nature was effected in the year 1896; but several draft bills of some importance were laid before Parliament and the Army Committee. The first of these concerned the creation of a Colonial Army, under the Minister of Marine, to which the troops in the Colonies, the Marines, and part of the garrisons in Algeria and Tunis would belong, the rest of the existing 19th Army Corps being formed into a new army corps that would be available for employment in Europe. The second and third projects deal with the engagement and civil employment of non-commissioned officers. Looking to the diminished number of re-engaged non-commissioned officers during recent years, it is proposed to raise the yearly bounty from 100 to 200 francs, to re-establish the post of battalion adjutant, which had been abolished, and to extend the rules for the occupation of civil posts by non-commissioned officers of long service. The fourth project has reference to the organisation of command, the creation of a new grade of general, the abandonment of the age limit for generals of division and brigade, and a new organisation of the superior military courts, both in regard to their powers and composition.

New Formations.—By the law of the 25th July, 1893, the formation of 2 foot artillery battalions, each of 6 batteries, was contemplated, so

soon as the necessary requirements in regard to finance and *personnel* could be satisfied. By a decree of the 18th February, 1896, the first 3 of these 12 batteries have been created, and they were allotted to the 6th Battalion, which has now 9 in place of 6 batteries.

Recruiting.—The number inscribed on the lists as having become liable for service in 1894 was 337,109 men, an increase of 6,911 over the preceding year. Of this number, 9,394 did not put in an appearance; 27,633 were pronounced totally unfitted for service.

The following was the distribution of those pronounced fitted to serve :—

Enrolled for service of from 2 to 3 years' duration - - - - -	163,121
Enrolled for service for 1 year's duration	47,445
Postponed - - - - -	46,427
Posted to the Auxiliary services - -	20,776
Excluded from service on account of disgraceful character - - - -	108
Included in the rolls for the Navy - -	31,599

Of the 1894 class, 30,885 men had previously entered the Army voluntarily.

Of the 40,082 men postponed in 1893 and the 21,122 in 1892, 18,854 were enrolled for the Army and 15,630 for the Auxiliary services.

In the course of the year 1894, 30,855 men engaged for voluntary service as follows :—

	3 years.	4 years.	5 years.	Total.
For the Navy -	60	6	2,971	3,037
For Colonial troops	3,043	980	1,778	5,801
For Army of the Interior - -	5,868	9,995	730	16,593
Troops in Africa -	5,454	{ 2,822 in the two foreign regiments. 2,197 in the Algerian tirailleurs. 435 in the Spahis.		

Training of Men not Service with the Colours.—The numbers of the Reserve called out in 1896 were :—Officers, 7,401; men, 258,054. They were exercised during the period of the big autumn manœuvres between the 28th September and the 31st October.

Of the Territorial Army the numbers were 6,779 officers and 289,914 men (including 271 gendarmes). The majority of these were called up between the 28th September and the 10th October. The whole were armed with the Lebel rifle.

By order of the War Minister the individual training of the men was reduced as much as possible, and the time available devoted to training on the ground, musketry practice, and field duties. The allowance of ammunition was the following :—

For each infantry Reserve man -	27 ball, 20 blank cartridges
For each infantryman of the Terri- } torial Army - - - - -	20 " 6 " "

For each cavalryman, Reserve and territorial	-	-	-	-	} 12 ball, 6 blank cartridges
For each artilleryman	-	-	-	-	
For each man called up of the Customs and Forest formations	-	-	-	-	} 18 „ —
					} 20 „ —

ITALY.

The strength of units in peace and war is as follows :—

Peace Strength :—

	Officers.	Men.	Horses.	Guns.
Infantry battalion	- 15	402	—	—
Squadron	- 4	165	142	—
Battery	- 3	90	45 to 42	4

War Strength :—

	Officers.	Men.	Horses.	Guns.
Infantry battalion	- 24	1019	—	—
Squadron	- 5	134	137	—
Battery	- 4	162	116	6

There are certain small differences in the strength of the Bersaglieri and Alpine troops from the rest of the infantry; also in that of the horse artillery and mountain batteries from the field batteries. Officers' horses are not included in the numbers of the mounted branches (squadron, 9; battery, 3).

The average total peace strength for 1896-7 was fixed at 194,000 men, but it is hoped to increase this number gradually to 215,000.

In war the Standing Army and the Mobile Militia form the field army, and number together 19,695 officers, 1,719,418 men, 111,274 horses, 1,608 guns, and 19,698 horsed vehicles. There are besides the separate Sardinian Militia, about 15,000 strong; and the Territorial Militia, which numbers 387,943 of all ranks.

Organisation.—The changes in the direction of the reduction of expenditure introduced by the Decree of the 6th November, 1894, have been delayed, and, as a fact, have never been given effect to by legislation. It was open, therefore, for a new War Minister to introduce a scheme of reform of his own, which received the sanction of the Senate; but his plans were dropped on his being replaced by a successor. The scheme as sanctioned by the Senate was to retain the cadres of the existing 12 army corps complete, while effecting economies by the reduction of units within the corps. This was to include the abolition of all the fourth companies of infantry battalions, and of the sixth squadrons of cavalry regiments; together, 327 companies and 24 squadrons. The Bersaglieri and Alpine troops were to be amalgamated and form 8 mountain brigades of frontier defence troops. The 24 field artillery regiments (each consisting now of 8 batteries of 6 guns) were to consist each of 6 batteries of 8 guns, so that the number of guns (1,152) would remain unchanged.

The principal advantage of this proposed re-organisation was that the remaining companies would have a higher peace strength. By raising the average strength of the whole active force from 194,000 to

207,000 men, the average strength of companies would be 102 men (in the summer half-year 127, in the winter period 72).

When the Minister of War, who had brought forward this plan, was replaced, it was withdrawn by his successor, who substituted for it a scheme of his own. He equally proposed to retain the 12 army corps and to raise the average strength. He also made further far-reaching proposals, including the placing of the recruiting arrangements on a national basis, and the completion upon mobilisation on a territorial basis; the fixing of the annual recruiting contingent at 100,000 men, to come up in March (the mounted branches in November or the beginning of December); the abolition of the second category; the formation of the Standing Army of 7, and the Mobile Militia of 5 annual classes; increase of the cadres of the Mobile Militia by 6 mountain batteries and 40 fortress artillery companies; re-organisation of the district commands, the existing 98 district companies (about 10,000 men) to be distributed amongst infantry regiments; mobilisation of the troops of the 1st and 2nd Line through the regiments, and completion in the garrisons before marching; and the re-organisation of the administration and finance services, having in view simplification and reductions in the *personnel*.

MONTENEGRO.

Since July, 1896, the cadres of an instructional battalion have been in existence, which is to be filled up three times a year with 600 men, who are to serve with it for four months. In war, 43 battalions would be formed. Apparently there would be 8 brigades, the commanders of which are nominated, and are for the most part the commanders in peace of the brigade districts.

The arrangements for the formation of the higher units are not fixed, but would be dependent on the nature of the war. As a basis, 2 battalions form a brigade under a separate commander, and to each brigade is attached a division of artillery consisting of 4 mountain and 2 field guns.

The total strength of the available men liable to service amounted, in 1895, to 40,000, of whom 25,000 of the 1st class (men under 40), and 15,000 2nd class (men under 60), which exactly gives a percentage of 16 on the population of 250,000.

Re-organisation.—A new organic law prescribes that every Montenegrin capable of bearing arms shall serve four months in the Active Army, and belong to the Reserve during five years. All men capable of bearing arms belong to the national Militia until the age of 60.

In April, 1896, the Berdan rifles, presented by the Tsar of Russia the year before, were issued to the men of the 43 battalion districts. In January a Ukase was issued, requiring every Montenegrin warrior to be in possession of complete war equipment.

GREECE.

The peace organisation of the Greek Army is in three general commands, having their headquarters at Larissa, Missolonghi, and Athens.

The first of these comprises 3 regiments of infantry of the Line of 3 battalions, 4 battalions Evzones, 1 cavalry regiment of 4 squadrons, and 1 regiment of field artillery of 4 field and 3 mountain batteries.

The second general command has 3 regiments of infantry of the Line of 3 battalions, 2 battalions Evzones, 1 regiment of cavalry of 4 squadrons, 1 field artillery regiment of 3 field and 3 mountain batteries.

The third general command has 4 regiments of infantry of the Line of 3 battalions, 2 battalions Evzones, 1 cavalry regiment of 4 squadrons, 1 field artillery regiment of 4 field and 3 mountain batteries, 1 regiment of engineers of 2 battalions, 1 telegraph company, and 1 train company.

The Estimates establishment of the whole of these services, including the gendarmerie (3,229 of all ranks), in peace was fixed at 1,880 officers, 23,453 other rank, and 3,294 horses and draught animals.

War Strength.—The following is a statement of the national strength, estimated by arms, of the Army of the 1st Line :—

	Men.	Horses.	Mules.
55 battalions - - - -	61,620	370	1,185
18 squadrons - - - -	2,880	2,700	102
27 batteries - - - -	6,942	2,797	2,492
15 technical companies - -	4,683	130	2,065
Train and Sanitary Services -	2,000	200	2,000
Gendarmerie - - - -	4,000	400	—
Total - - - -	82,125	6,597	7,844

The fighting strength is estimated at 61,130 bayonets, 2,700 sabres, and 156 guns.

The Territorial Army (infantry only) consists of 76,800 men, in round numbers; the Reserve of the Territorial Army of about 57,600.

The total strength of the armed forces available is, therefore, on paper, 216,525 men, 2,700 cavalry, and 156 guns—numbers which, looking to the inadequate arrangements for mobilisation and the deplorable financial situation, would never be realised.

AUSTRIA-HUNGARY.

The Landwehr in Hungary.—At the close of 1895, new regulations were issued for the guidance of the Landwehr district commands, the Inspector of Landwehr cavalry; and the Landwehr brigade commands.

Landwehr District Commands.—Hungary is divided into 7 Landwehr districts; each district consists of 4 recruiting districts (from 12 to 14 battalion districts), and includes 2 Landwehr infantry brigades. In each a Landwehr district commander is the supreme official in regard to the Landwehr and the Landsturm. He ranks with the Army Divisional Commander, but his sphere of action is equivalent to that of the Landwehr commander in Austria (equivalent to that of the army corps commander), and he is under the Hungarian Minister for Home Defence through the supreme commander of the Hungarian Landwehr.

The official location of the several district commanders is as follows : 1st, Buda-Pesth ; 2nd, Szegedin ; 3rd, Kaschau ; 4th, Pressburg ; 5th,

Stahlweissenburg; 6th, Klausenburg; 7th, Agram (the Croatian-Slavonic district). The boundaries of the districts by no means coincide with those of the army corps districts. The complete establishment of a Landwehr district command is from 21 to 24 officers and officials, and from 20 to 24 men.

The Hungarian Landwehr cavalry inspector has his office in Buda-Pesth. He is the organ of the Minister for Home Defence, he is an intermediary between the cavalry brigade commanders and the district commands in all personal matters concerning the officers and cadets of the Landwehr cavalry. His staff consists of a field officer qualified to perform the duties of the general staff as adjutant, a captain with similar qualifications as deputy adjutant, an officer and a non-commissioned officer as clerk, and an orderly.

Landwehr Brigade Commands.—In peace the Hungarian Landwehr troops are grouped in 14 infantry brigades (Nos. 45 and 46, and 73 to 84), and 3 cavalry brigades (Nos. 1 to 3).

The brigade commanders have the same status as those of the Army, and form the intermediary between the troops and the Landwehr district commands. Each brigade commander has a superior officer qualified for the general staff as Brigade-Major.

In war a Territorial Landwehr infantry commander is appointed at the headquarters of each district command to command the Landwehr and Landsturm Ersatz corps left behind. At the peace station of each Landwehr cavalry brigade command an inspector of cavalry Ersatz troops is similarly appointed.

New Formations.—On the 1st October a company, with the number 15, was added to each of the Bosnia-Herzegovina infantry regiments. Simultaneously a fourth battalion staff was instituted in each of the regiments, and the 13th, 14th, and 15th Companies constituted in a battalion. With the probable formation in the autumn of 1897 of a 16th Company, the constitution of these regiments in four battalions and an Ersatz cadre battalion will be completed.

A 3rd Artillery Inspection was formed in Sarajewo. There are, therefore, now 3 such inspections for the 11 mountain batteries in Bosnia and Herzegovina. Of these the 1st and 3rd at Sarajewo have each 3 batteries; the 2nd at Mostar has 5 batteries. There is a 4th Inspection, equally at Sarajewo, for the fortress artillery companies.

Since the 1st May, 1896, all captains of infantry and rifles are mounted (the horses are their own property). A mounted regimental bugler, ranking as Sergeant-Major, who is to be employed also as a "Meldereiter," has been added to the staff of each infantry regiment; the regimental band has been reduced by one musician to meet this increase. The Tyrolese rifle regiments and the Feldjäger battalions had already mounted buglers.

Since October, 1896, the companies of the Austrian Landwehr infantry have actually been at the strength (54 men) fixed by the law of 1894. From the 1st January, 1897, a mounted bugler (Meldereiter) was

added to the regimental staffs, a reduction of one battalion bugler being made at the same time.

On the 1st October, 1896, the new regulations for the Hungarian Landwehr infantry came into force. It is now divided into 28 regiments, each of which consists of a regimental staff, either 3 or 4 field battalions (4 companies), and one Ersatz cadre battalion. The total number of field battalions is 94; consequently, there are 10 regiments of 4 battalions, and 18 of 3 battalions. In 10 of the regiments there is further a Reserve cadre, from which, in war, Reserve formations are constituted as men become available.

The regiments are permanently located in the recruiting districts, the cadres in the station of the regimental staff. The augmentation stores and train material are in battalion charge.

The most important innovation is that the whole of the recruits of the Hungarian Landwehr infantry are to be called up on the 6th October of the year they become liable to service. By this arrangement they serve for the whole two years provided by the law, instead of for 19 months only as has hitherto been the case.

ROUMANIA.

Peace Strength.—The permanent force comprises 4 army corps, the headquarters of which are located at Crajova, Bucharest, Galatz, and Jassy; an independent division in the Dobrudscha, and an independent cavalry division.

The establishments of these for 1896 amounted to 45,481 men and 9,897 horses for permanent service. The numbers for temporary service were 70,270 men and 7,200 horses.

The actual strength of the permanent service men, however, hardly amounted at any time to 43,000 men.

Some modifications in the direction of increase will be effected in the matter of numbers by the changes to be mentioned as having been made in 1896. The details of these are not available; but it may be stated generally, that the limit of men available from all sources for war is 250,000; but that arms and equipment would be available only for 170,000 at the highest computation.

The rationed strength of the 4 army corps forming the field army will not differ materially from that given for 1895, viz., 3,948 officers, 167,316 men, 52,604 horses, 384 guns, 7,256 wagons, 800 draught animals; and the fighting strength, 140,352 men.

Increase to Artillery.—On the 1st October, 1896, six batteries were added to the 8th, 9th, 10th, and 12th Regiments. The first two batteries are "light" (7.5 centimetres), the rest "heavy" (8.7 centimetres).

Organisation of Militia Battalions.—On the 1st October, 1896, cadres were formed with each of the existing 34 infantry regiments for the men of the Militia. The new cadres consist in each battalion of 1 field officer as commander, 9 officers, 10 non-commissioned officers, and 11 men. The officers were taken from the Active, Reserve, Militia, and

pensioned lists. The men are to be called out each year for a training of ten days' duration. In peace-time the battalions form the fourth battalion in each regiment, but their collection in regiments is to be anticipated at an early date. The war strength was fixed at 281 men per company, and 1,123 per battalion.

Previously, the 2nd Line "Militia" men between 30 and 36 years of age, and the 3rd Line "Gloata" men between 36 and 45 years of age, had no independent cadre, and formed consequently no more than a reservoir of men for the 1st Line.

Projected Increase to Cavalry.—The regiments, both of Roschiori and Kalaraschi, have at present only 4 squadrons, the increase of which to 5 squadrons is contemplated. For the moment, however, only a depôt squadron will be formed in each regiment. The formation of detachments of Meldereiter for the army corps is also projected.

Location.—It has been stated that it is intended to move the location of the 8th Division from Botosani to Bakeu. The former place is situated on the Sikora, a tributary of the Pruth, 105 kilometres north-east of Jassy, and has some 32,000 inhabitants. Its distant position and its vicinity to the Russian frontier render it not only difficult, but also dangerous to call up and assemble the troops.

Bakeu is the principal place of the Moldau district; it is a small town of 13,000 inhabitants, and is situated on the Bistritza, a tributary of the Sereth, 80 kilometres south-west of Jassy, on the railway line running from Galatz to Czernowitz. The location of the eight divisions of the Roumanian Army, therefore, in future will be:—1. Turn-Severin. 2. Crajova. 3. Targovistea. 4. Bucharest. 5. Buzen. 6. Foksani. 7. Roman. 8. Bakeu.

RUSSIA.

Peace Strength.—This has been briefly summarised (Rediger, 1894) as follows:—

Regular Army	-	-	-	-	-	800,000	men
Cossack troops	-	-	-	-	-	59,000	„
Frontier Guards	-	-	-	-	-	26,000	„
Finland troops	-	-	-	-	-	5,600	„
Militia	-	-	-	-	-	3,300	„
Total	-	-	-	-	-	893,900	„

The distribution of these was:—

Europe	-	-	-	-	-	690,000	men.
Caucasus	-	-	-	-	-	112,000	„
Asia	-	-	-	-	-	91,000	„

Since 1894 and 1895 there have been material increases: to the infantry, of a further Reserve battalion and 1 fortress regiment; to the cavalry, of 4 new regiments and Ersatz cadres; to the artillery, of more than 20 batteries on war strength and fortress companies; and to the engineers, of 10 battalions.

As, moreover, a not inconsiderable portion of the troops are not of the strength prescribed as their normal establishment, but are nearly or entirely at war strength, the present peace strength of the Russian Army cannot be far short of a million of men, if it does not actually exceed this number.

War Strength.—The total strength, exclusive of local troops, transport and prison commands, gendarmerie, Militia, staffs, etc., is estimated at 61,300 officers and 3,400,000 other ranks, made up as follows:—

	Officers.	Other ranks.
Field troops - - -	24,900	1,200,000
Reserve troops - - -	15,500	875,000
Fortress „ - - -	4,000	260,000
Ersatz „ - - -	5,500	306,000
Reichswehr „ - - -	10,400	730,000
Frontier Guards - - -	800	29,000

Including non-combatants in the grand total of the Russian Army, 4 millions of men will not be too high an estimate.

New Reserve and Fortress Regiments.—During 1897 the Guard Reserve cadre battalion and three other cadre battalions are each to be expanded into a similar number of Reserve regiments, each of two battalions.

Similarly, 16 fortress battalions are to be made into fortress regiments, each of two battalions.

Formation of an Independent Cavalry Corps.—By an Order of the 14th June, 1896, the 13th and 14th Cavalry Divisions have been formed into a cavalry corps, in which also the 20th, 21st, and 23rd Horse Artillery Batteries, formerly belonging to those divisions, are included. The 1st Don Cossack Division, hitherto an independent one, replaces the 14th Cavalry Division with the 14th Army Corps. The 15th Cavalry Division is now the only one in the Warsaw Military District that does not form part of a larger organisation.

Formation of a Second Independent Cavalry Brigade.—By an Order dated 16th September, 1896, a second independent cavalry brigade was to be formed out of the two Dragoon regiments No. 51 (Tschernigov) and No. 52 (Njäschin), that were to be newly-raised. Simultaneously, the cadres of the cavalry Ersatz No. 16 and No. 17 were each to be increased by a third sub-division.

Heretofore, exclusive of the two Guards Divisions and the Caucasian Division, there were only 15 cavalry divisions and one independent cavalry brigade, formed the previous year as the nucleus of a sixteenth division, but consisting for the time of only two Dragoon regiments, and attached to the 16th Army Corps.

The newly-raised second independent cavalry brigade may be regarded as the nucleus of a further 17th Cavalry Division. The commanders of the two brigades have already the privileges of division commanders, and are provided with equivalent staffs. The staff of the new brigade is located at Orel, in the military district of Moscow, the regiments at Orel and Jelez.

Horse Artillery.—The formation of divisions of 2 batteries made further progress during 1896. Besides the Guard, there are now divisions, formed either wholly of Regular batteries or partly of Regular and partly of Cossack batteries, with the 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, and 14th Cavalry Divisions. There only remains now outside this formation the 1st and 2nd Batteries, with the 1st Cavalry Division, and the 20th and 22nd Batteries, with the 13th and 1st Cavalry Divisions.

Caucasian Train Battalion.—Hitherto there has been no train battalion belonging to the Army of the Caucasus; in Europe there are five such battalions. On the 1st January, 1897, a battalion to consist provisionally of two companies only was to be formed.

Cossack Formation.—The hitherto independent Terek Cossack Brigade, the headquarters of which were at Vladikavkas, has been broken up. One of the regiments that composed it has been relegated to the 2nd Caucasian Cossack Division, which was exceptional previous to this in having only three regiments. The second regiment has been placed directly under the Ataman of the Terek formations.

The second levy of the Kuban Cossacks for the formation of the Plastun battalions has been increased so as to provide 6 in place of 4 battalions.

Increase to the Siberian Troops.—The 2 West Siberian Line battalions transferred the previous year to East Siberia, were renumbered as the 8th and 11th Battalions.

The previously existing 8th East Siberia Line Battalion, augmented by 16 companies from European Russia, was converted into the Vladivostock fortress infantry regiment, to consist of 5 battalions, each of 4 companies. On the 31st July, the formation was ordered of a new Reserve cadre battalion at Tschita in Transbaikalia, which is gradually to be brought up to the establishment of the Strjätensk battalion, and be expanded in war to 5 battalions. The infantry in East Siberia will then consist of 37 battalions, not including the Vladivostock fortress regiment, numbering about 40,000 men.

The artillery in the Amur military district has received an increment, by the expansion of the previously existing half mountain batteries of the 1st East Siberian Artillery Brigade into complete batteries on war strength, numbered the 7th and 8th. The 5th and 6th are mountain batteries, and the 1st to 4th field batteries. Besides these 8 battalions, there are available in East Siberia the 2nd brigade of 4 field batteries, a Transbaikalia division of 2 field batteries, and 2 Cossack batteries. There are, therefore, in all, 16 batteries, besides a battalion lately formed from 5 fortress artillery companies at Vladivostock.

Of technical troops, a fortress sapper company has been formed for Vladivostock. There existed already a sapper battalion of 4 companies, a railway battalion, and a torpedo company. Thus the Amur military district is now also well provided with technical troops. In war, including the available Cossack cavalry, a strong army corps could be formed provisionally.

New Distribution of the Troops and Administration in the General Government of Turkestan.—By an Order of the 3rd September, 1896, some radical changes were effected.

Three independent Line brigades were formed out of 14 of the available 20 Turkestan Line battalions; of these, 2 brigades consist of 5 battalions each and the third of 4. Their commanders have the powers and duties of a division commander, also his staff. The previously existing four Line brigades were broken up.

The existing Line battalions not taken into the new brigades, Nos. 1, 7, 10, 11, and 16, become Line cadre battalions, each of which, similarly to the Reserve cadre battalions, is to be expanded into 5 battalions on mobilisation. In peace they are to have 5 companies. One battalion remains independent. Besides the above there will be 5 of the existing local detachments raised to a higher strength; 6 others are disbanded.

An independent Turkestan Cossack brigade is to be formed of the Cossack troops employed in Turkestan, viz., 2nd Ural Regiment, 4th, 5th, and 6th Orenburg Regiment, and 2 sotnias (Nos. 1 and 3) of the 1st Astrachan Regiment. Its commander has the same status and staff as the other brigade commanders.

All the field troops located in Turkestan, including besides the rifle formations, and artillery, the Line brigades and the Cossack Brigade are no longer under the immediate orders of the military governors of the several provinces of Syr Darya, Samarkand, and Ferghana, but are responsible to the superior commander of the military district. There is a separate commander for Syr Darya. The three military governors continue to exercise command over the local detachments, the administrative services, hospitals, and those troops, including the newly-organised Line cadre battalions, that do not march in the event of war, but remain for the purpose of keeping things quiet in the country.

The intention in placing the independent brigades directly under the superior commander is to give to the Turkestan forces a more compact impress and uniform training, with a view to their employment against a foreign foe. Simultaneously the expansion and completion of the troops is provided for by cadre formations on the European model.

Artillery Parks.—Under the regulations previously in force there were "flying parks" for the 48 Active infantry divisions and their artillery, a flying mountain artillery park for 7 brigades of rifles (there was none for the Rifle Brigade of the Guard or for the native Caucasus Brigade), and 3 parks for the mortar regiments. These parks existed in cadre during peace, and those for the 48 infantry divisions were to be expanded in war into park brigades, each consisting of from 3 to 4 parks. There were further 82½ so-called "mobile parks," with only a small cadre establishment to form in war as the second line of ammunition supply for the Active infantry divisions (for the Reserve infantry divisions as first line). The "local parks" had to serve as the third line of ammunition supply.

By an Order of August, 1896, the organisation of the parks in European Russia and the Caucasus has been altered in the following manner:—

1. Each Active infantry division has, as before, a flying park in peace, which is expanded in war into a park brigade. If the brigade has only to supply field batteries (heavy and light) with gun ammunition, 3 mixed parks (for infantry and artillery) belong to it. If there is mountain artillery also, then there is a mountain park belonging to the park brigade. The war establishment of the several flying parks depends on the nature of the batteries supplied by them.
2. The flying rifle parks are to have the same establishment in peace as previously. In war the establishments differ, according to the troops to be supplied. For instance, each of the 5 European Rifle Brigades has 4 regiments of 2 battalions; the Guard and the 2 Caucasian Rifle Brigades have only 4 battalions each; the Finland Brigade, which in war is to be expanded into 4 regiments of 4 battalions, a complete division, has 2 parks. A park with mountain artillery ammunition is provided also for the Caucasus Rifle Brigade.
3. Mobile parks will no longer exist in peace, and in war their duties will fall to one of the flying parks of the army corps concerned, nominated for the purpose by the head of the corps artillery.

Ersatz Formations for the Asiatic Cossacks.—Hitherto there have been none; the provisions in regard to the completion in men and horses in war, and the establishment of the mounted Ersatz sotnias previously in force in Europe and the Caucasus have been extended to the Siberian and Semirgatch cossacks.

Field Hospitals for the Rifle Brigades.—Previously these troops have been dependent on the divisional hospitals in war. Orders have now been given for the 1st, 2nd, 3rd and 5th Brigades to be each provided in war with a brigade hospital, to be formed and equipped on similar lines to the divisional hospitals, though on a smaller scale.

Mobilisation Practices.—During the past winter there have been numerous exercises in mobilisation throughout the Army, and more particularly in the Petersburg military district. In March the Guard Lancer Regiment, quartered at Peterhof, the Guard Rifle Regiment and 3 batteries were mobilised and inspected. After the completion of the mobilisation, in which men and horses of other bodies of troops had to participate, exercises in marching and entraining were always held.

Summer Exercises.—In 1896, 84 per cent. of the entire infantry, 92 per cent. of the cavalry, and 97 per cent. of the artillery took part in exercises with combined arms.

There were employed in manœuvres with changing quarters, that is, outside the areas of the camps, 555½ battalions, 292½ squadrons and sotnias, and 162 batteries.

Winter Training.—The regulations by which in winter, besides the detailed training of the recruits and older soldiers of the several arms, exercises are prescribed in cadre formations, marching and manœuvres in combination with field firing, and practice in the construction of shelter trenches, sometimes in snow, appear to be given effect to more and more.

Exercises by Men of the Reichswehr.—The men of the first category of the Reichswehr not taken for the Standing Army are liable during the four first years of their enrolment to two trainings each of four weeks' duration. The trainings take place at the station of the district commander, either in the spring or autumn. The training staff is very small, being in the proportion of 1 officer for every 100 men, and 1 instructor to every 20. The men are not provided with uniform, but only with arms and equipment. The conditions do not seem favourable, but, according to Russian authorities, the results are very satisfactory, even as regards shooting and company drill.

Re-armament of the Infantry.—The field and reserve troops, both in Europe and Asia were in possession of the new rifle early this year, and the whole supply for all services was to be ready some months later.

SERVIA.

Peace Organisation.—The distribution of the Army is in 5 divisions, each of which consists of 2 regiments, together 5 battalions, each of 4 companies, 1 regiment of field artillery of 2 sub-divisions, together 7 batteries, 1 train squadron and 1 sanitary company. The 3rd Division has 1 battalion more and 1 guard regiment of cavalry of 3 squadrons, also 1 railway company; it has, however, only 6 field batteries. The 1st Division has 1 regiment of cavalry of 3 squadrons, 1 regiment of fortress artillery of 2 battalions, together 7 companies and 2 battalions of engineers, together 7 companies. The 5th Division has ½ battalion of 2 companies of pontoon troops.

This is an increase of 6 battalions on former years.

The strength laid down in the Estimates for 1896 was 970 officers, 21,200 other ranks, 4,846 horses and 184 guns. It was never reached during any time of the year. Before the recruits were embodied, at the beginning of 1896, the strength as derived from official sources was 898 officers, 15,982 men, 3,597 horses and 150 oxen.

War Strength.—The rationed strength of each of the 5 divisions of the Regular Army is 468 officers, 79 surgeons, officials, etc., 20,834 men, 3,883 horses, 1,782 oxen, 1,296 wagons. The fighting units comprise 16½ battalions, 2 squadrons, and 9 batteries, with 14,500 rifles, 340 sabres, and 54 guns.

The rationed strength of the cavalry brigade is 74 officers, 12 surgeons, etc., 2,531 men, 2,780 horses, 124 wagons. Fighting strength: 2,060 sabres and 6 guns.

The rationed strength of the entire Regular Army is 2,681 officers, 504 surgeons, officials, etc., 126,932 men (including about 10,000 Ersatz troops), 25,212 horses, 10,943 oxen, 7,283 wagons, and 632 ammunition carts. Fighting units: 80 battalions, 30 companies, 24 squadrons (including 2 Life Guard squadrons), 56 batteries, with, in round numbers, 80,000 rifles, 4,000 sabres, and 316 guns.

The National Levy, 1st Ban, is estimated to produce a rationed strength of, in round numbers, 124,000 of all ranks (including about 25,000 Ersatz troops), 14,840 horses, 5,720 oxen, 3,917 wagons, 160 ammunition carts. Fighting units: 80 battalions, 20 companies, 10 squadrons, 20 batteries; in round numbers, 80,000 rifles, 1,800 sabres, and 80 guns.

The National Levy, 2nd Ban, is calculated to number about 62,000 officers and men, 6,300 horses, some thousands of oxen, and 554 wagons. Fighting strength: 60 battalions, 10 companies, 5 squadrons, with 51,300 rifles and 790 sabres.

The foregoing numbers would give for the whole armed forces a strength of 316,117 men, which is 14 per cent. of the entire population. The want of officers, insufficient cadres for the levies of the 1st Ban, the absence of any cadres for those of the 2nd Ban, and the difficulties in the way of getting up the horses and vehicles required, would all operate against the realisation of the estimates indicated. In the most favourable circumstances, which would be with sufficient financial means available, probably about half the total number given above would be forthcoming.

Recruiting.—Of the 21,000 men who composed the 1896 contingent, 6,000 were dispensed from active service; only about 15,000, therefore, were available for enrolment.

The law regarding liability to service of 1886 was modified in many respects by the law of the 1st January, 1896. The modifications were mostly in the direction of lightening the service to professional men and others. The duration of service in the Line continued as before to be for 2 years.

Owing to financial consideration the re-armament of the infantry with another magazine rifle has been postponed; and, consequently, Serbia is behind all the neighbouring States in regard to the efficacy of its infantry arm.

SPAIN.

The peace organisation of the Spanish Army of the peninsula is in 8 army corps, of which the eighth is now in course of formation, and consists only of 1 division.

Each corps is given in this organisation a military region or district:

The 1st District includes New Castile, Estremadura, Segovia, Avila, Toledo, Ciudad Real, Badajos, and Caceres.

The 2nd District.—Seville, Granada, Cordoba, Huelva, Cadiz, Jaen, Malaga, and Almeira.

The 3rd District.—Valencia, Castellon de la Plana, Alicante, Murcia, Albacete, and Cuenca.

The 4th District. — Catalonia, Barcelona, Gerona, Lerida, and Tarragona.

The 5th District.—Aragon, Saragossa, Huesca, Teruel, Soria, and Guadalajara.

The 6th District.—Burgos, Navarre, Alaba, Guipuzcoa, Biscay, Santander, and Logroño.

The 7th District.—Old Castile, Valladolid, Palencia, Salamanca, Zamora, Léon, and Oviedo.

The 8th District.—Gallicia, Corunna, Lugo, Orense, and Pontevedra.

A new recruiting zone has also been established in Vittoria.

War Strength.—In March, 1896, exclusive of 56 Line battalions, and 10 rifle battalions then in Cuba, there were available for mobilisation in the peninsula, including the garrisons of the Balearic and Canary Islands, and of North Africa :—

Infantry :—

56 second battalions at 1,000	-	-	56,000 men
56 third " "	-	-	56,000 "
10 rifle battalions at 1,200	-	-	12,000 "

Cavalry :—

28 regiments at 596 horses and 700 men	19,600 men
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Artillery :—

14 Field artillery regiments, each of 8 batteries of 6 guns, with an equal number of artillery and infantry ammunition columns	-	-	-	25,606 men
3 Mountain artillery regiments and ammunition columns	-	-	-	7,254 "
9 Battalions fortress artillery, partly of 6, partly of 4 companies	-	-	-	8,175 "

Engineers :—

4 Sapper and miner regiment at 2,000	-	8,000 men
1 Pontoon regiment	-	3,442 "
1 Railway "	-	1,040 "
1 Telegraph battalion	-	1,272 "

Total - - - - 198,389 "

To these have to be added the administrative and sanitary services, 4,845 men. The cavalry takes the field with 16,708 horses ; the artillery has 816 field guns.

The following Reserve troops were also available :—

Infantry :—

112 Reserve battalions (56 regiments of
3 battalions) at 1,000 men - - 112,000 men

Cavalry :—

14 Reserve regiments of 4 squadrons,
with 600 horses and 702 men - 9,828 „

Artillery :—

7 Field artillery regiments, 1 for each
army corps district, and 136 guns - 14,140 „

Engineers :—

New formations - - - - - 6,000 „

Total - - - - - 141,968 „

Apart, therefore, from the troops in Cuba, 130,000 men in round numbers, there were in March, 1896, available on mobilisation 340,000 men, with 25,108 horses (cavalry), and 952 guns.

TURKEY.

Peace Establishment.—The battalion strength is fixed at 18 officers and 800 men for the European garrisons, furnished by the 2nd and 3rd Corps (Adrianople and Salonica); 500 men for those of the 1st Corps (Constantinople), and 400 for the Asiatic garrisons.

The cavalry squadron has a uniform establishment of 6 officers, 112 men, and 100 horses; the field battery of artillery, one of 4 officers, 96 men, 60 horses, and 6 guns. As a fact, the actual strength of the battalions in Europe has seldom exceeded 550, and of those in Asia 300 men; equally the actual strength of squadrons has been between 50 and 100 men, and from 50 to 80 horses.

The total rationed strength of the Turkish Army, including some mobilised Redif (Landwehr) battalions, was in round numbers 250,000 men at the commencement of 1897.

The distribution of the Army and recruiting areas is in 7 army districts, the headquarters of which are as follows :—

1st, Constantinople; 2nd, Adrianople; 3rd, Salonica; 4th, Erzeroum; 5th, Damascus, with the Crete Division; 6th, Bagdad; 7th, Yemen.

There are also two independent divisions in Hedja and Tripoli.

War Strength.—In war, each of the first 6 army districts should form 4 army corps, 1 of Line troops (Nizamie), 2 of Landwehr (Redif), and 1 of Landsturm (Mustahfiz).

The normal formation of a Line army corps is 2 infantry divisions (26 to 34 battalions, 72 guns), 1 cavalry division (24 to 30 squadrons, 18 guns), corps artillery (2 field divisions, 36 guns), 1 engineer battalion, 1 telegraph company, 1 train battalion (3 companies), 3 artillery train companies, 1 sanitary division, and 1 intendants division; total, 26 to 34

battalions, 5 technical companies, 24 to 30 squadrons, 126 guns, and 6 train companies.

The rationed strength should respectively be 1,150 officers, 32,000 men, 6,600 horses; and 1,400 officers, 40,300 men, and 800 horses.

The fighting strength respectively 22,880 or 29,220 bayonets, 3,366 or 4,194 sabres, and 126 guns. There are besides, for special employment in each of the 1st and 5th Army Corps, 6 mountain batteries (36 guns); in the 6th Corps 2 mountain batteries, and in the 7th Corps 4. In each of the 2nd and 3rd Corps there are, further, 6 howitzer batteries (36 guns). There are no Landwehr corps in the 7th District.

In the composition of the Landwehr corps there are wanting 2 rifle battalions and 2 divisions (6 batteries) field artillery. The technical and train formations, also the corps artillery, would have to be created on mobilisation. It is probable that, as in the past, the division would prove to be the highest formation practicable with these troops.

No preparations whatever have been made for the creation of the 5th or Landsturm Army Corps; it is improbable that anything could be effected beyond forming Landsturm battalions, and it is possible that the men of this category will be treated, as hitherto, as a general reservoir for the Line and Landwehr formations.

Within from two to three months Turkey, after a general mobilisation, may be able to place some 400,000 men in the field, and during the course of a war of some duration she might collect as many again—together as a maximum 800,000 men.

Infantry, New Formations.—During 1896 the 3rd Corps District was re-arranged, 8 new battalions were formed, and 21 battalions transferred from the 1st and 5th Corps. By these means the strength of the 3rd Corps was raised to 64 battalions.

Five new battalions were raised in the 5th Corps, and though it is not clear how far the contemplated formation of 4 new battalions in the Hedja Division has progressed, it is known that 1,500 men were sent there for the purpose in September, 1896. In February, 1896, it was determined to add a new third (19th) division to the 4th Corps; and of the 17 battalions required, 12 had been constituted by the autumn, and the formation of the rest was in course of preparation.

At the beginning of April it was decided to form a fourth Line division in addition to the third division then in course of formation. The creation of this new fourth division (No. 20) was not to be commenced until the third (No. 19) had been completed. By these new formations the Line troops on the Russian frontier have been doubled. The division into 2 corps of the 4th Corps district as well as of the third may be expected later. Besides this a new (that is, a fifth) Landwehr division is to be raised in the 4th Corps district.

The main object of the material reinforcement of the forces on the Russian frontier is not far to seek. It is the preparation for a future (the eleventh) conflict with Russia, the hereditary foe. But there were other weighty grounds for it; the foremost of these being the subjection of the

Kurds, whose self-confidence and power have been greatly increased by the creation of the irregular Kurdish cavalry (Hamidié).

Artillery.—The 2 new howitzer batteries of the 2nd and 3rd Corps were left unhorsed in 1896.

Peace Distribution.—In February, 1897, the grouping of the Standing Army was as indicated in the following table:—

Army Corps and Division Districts	Line battalions	Squadrons	Batteries Artillery			Howitzer batteries	Squadrons Kurdish Hamidié
			Field	Mntn	Horse		
1st Corps, Constantinople ...	30½	28	30	6	3	—	—
2nd „ Adrianople ...	34	30	30	6	3	6	—
3rd „ Salonica ...	64	35	42	6	3	6	—
4th „ Erzinjan ...	51	30	30	6	3	—	215
5th „ Damascus ...	22	27	17	6	3	—	22
5th Cretan Division ...	16	2	—	4	—	—	—
6th Corps, Bagdad ...	34	30	12	2	3	—	—
7th „ Yemen ...	32	—	3	4	—	—	—
Hedja Division ...	17	5	1	2	—	—	—
Tripoli „ ...	18	10	4	2	—	—	—
Total ...	318½	197	169	44	18	12	237

There were also available in the 5th Corps District 2 battalions, 1 squadron of the Lebanon Militia. Of the 16 battalions forming part of the Cretan Division, 12 belonged to the 5th and 4 to the 3rd Corps.

One battalion of the 1st Corps is included in the 18 battalions of the Tripoli Division. Of the Kurdish Hamidié, 4 squadrons were doing duty in Constantinople during six months of 1896.

In October, 1896, there were in a state of embodiment, consequent on the disturbances that had occurred in European and Asiatic Turkey, 125 Landwehr battalions. These were all disembodied between November, 1896, and May, 1897, before the commencement of hostilities with Greece. The brigade was the highest organisation adopted with them.

INFANTRY TACTICS.

The publication of General von Verdy's third and concluding part of "Studien über Felddienst" leads to some remarks. It deals with rear-guards and flank detachments, and particular attention is given to the imparting of orders in the field. This opportunity may be taken of pointing out how much the present conditions of fighting have increased the difficulty of conveying orders to the infantry in the first line, and it is questionable whether sufficient weight is given to this in peace training. But the influence of the framing and imparting of orders has so much influence on tactical success or miscarriage, that the chapter on the subject deserves earnest attention.

The finest tactical conceptions and arrangements are valueless in practice, unless they can be converted into practical procedure. Formerly these difficulties were much less, because use could be made of the command by word of mouth, even in the closest proximity to the enemy. Command as such, the controlling of the troops with the voice, is now

only practicable up to the company inclusive, and then only when outside the sphere of effective fire.

The regulations do not attribute sufficient importance to this. Everywhere troops are still given commands; even regiments and brigades are still commanded by word of mouth, and the French regulations even lay down that during the fight the regimental commander shall intervene in critical situations with "loud, energetic command."

Until the regulations are freed from such unservicelike ballast, a simple, clear, and really practicable mechanism of command will not come into existence. In this respect the other two arms of the Service are in advance, for they can get some assistance from signals. The practice is a survival of the habitudes of the drill-ground, which are in contradiction with the principle that "the troops shall not have to abandon in the field what they have learnt on the drill-ground." As a fact, the battalion commander in war can, at the most, give the command "Stand to! Unpile arms!" Notwithstanding this, the regulations contain all sorts of detailed instructions regarding the drill of battalions, regiments, and brigades by word of command. But commanding or drilling are purely mechanical exercises—a means to the end, as regards discipline—which have little to do with leading or with imparting orders in service conditions. Consequently, it is often seen that the performances of the so-called good "drill" are of little value when it is a question of bringing up and engaging troops; when, in a word, it is a matter of preparing the tactical decision and remaining master of the tactical situation, so far as this is possible.

It remains now to be pointed out that the ample peace apparatus, with its organs of command; the riding about of the commanders and adjutants, even at close distances; the frequent reports received, even during the action; the personal intervention of the superior commander,—would in war suffer such limitations that a mechanism of command which is accustomed to work with the assistance of these factors can only be regarded as a failure.

But tactical success depends, in the first place, apart from moral considerations, upon the tactical method being good, and this again is dependent upon the peace training. By "method" is understood principally the tactical procedure, and this is inseparable from the manner in which the apparatus of command operates. In the past year the number has increased of those who place great value upon tactical method in contradistinction to those who think they can overlook the dangers of the so-called free procedure.

This question is cleverly dealt with from the larger points of view by the Austrian Lieut.-Colonel Freiherr von Binder-Kriegelstein, in "*Geist und Stoff im Kriege*." Amongst other points, he comes to the conclusion, based on military history, that the worth of the military implement is the true secret of success in war; and not the superior higher leading. The military implement, however, appears only to be good when it is capable of extraordinary tactical performances; and it is these again which

frequently bring about, as if of themselves, the so-called strategical successes.

The "tactical reports" have for years raised the demand to base the tactics of infantry on the set battle. This has not been from prejudice against the tactical confusion with small bodies, which may be of use, within definite limits, especially for the training of leaders, but because the form of future wars will be infantry fighting in large masses in a comparatively narrow space, for which end tactical habitudes of detachment warfare could only act detrimentally. This applies not only in regard to tactical leading, but also to the tactical procedure, including the formations adopted. This tendency, supported by the experiences of the Franco-German war—in which detachment warfare played no rôle up to and including the battle of Sedan—has made progress during 1896. Especially in Germany it was directly promoted by the extensive exercise-grounds, which allow of working in service conditions in large bodies.

As regards the planned attack, a welcome advance has been made during the year, in so far as the theory of a near approach without firing has become more and more untenable. Such a procedure is the exact reverse of sound tactics, because it is impracticable in war, and, viewed clearly, is only veiled shock-tactics, which in 1866 and 1870-71 ended wherever they were carried out in tactical failure.

Looking, however, to the fact that the conflict in regard to the infantry attack has not yet been settled, it may be worth while to consider the phases of such an operation from the deployment for action up to the final charge, with special reference to the opposing views on the subject. By this course also the best opportunity will be given the reader to form his own judgment regarding the utility of either method. By utility, it is to be understood, in the first place, practicability before the enemy under similar physical and moral conditions. But this is not sufficient, looking to the strife of opinions, to gain fixed points for an unbiased judgment; for without such points, particularly in tactical matters, there is the danger of unprofitable discussion, greater in degree according as an attempt is made to rely on the authority of one or other of the regulations. Regulations have not always been the means of tactical progress, and a scientific discussion of definite tactical questions would fall through from mental constraint if the regulations were to be regarded as infallible.

Besides psychology, there are also to be considered as fixed points the experiences of military history and ballistics. The last stands in so close a connection with the psychology of the fight that the endeavour to fathom the nature of tactics without both can only lead to a dull, purely mechanical result. During the past year ballistic bases have been created for certain tactical questions, which, in the future, no one who occupies himself scientifically with these questions can afford to ignore. It is the writing of Lieut.-General Rohne, "*Das gefectsmässige Schiessen der Infanterie und Feldartillerie*," which can also claim importance in the direction of practical teaching; for in the tactical training of infantry shooting suitable to service conditions must rightly play a great rôle,

and whoever directs it may learn many practical things from the above-named work. The second work is by the Italian General Massa, and it offers equally much valuable ballistical-tactical material, although it is specially based on the new Italian rifle ("*La Fucileria colli Arme Nuove*," 1896).

To revert to the discussion of a planned attack by infantry, in normal conditions, something like the following general points suggest themselves. The attack must be carefully prepared, and must never be engaged too hastily. Fighting out of hand will lead, in ninety cases out of a hundred, to serious disadvantages. The attack must be preceded by careful reconnaissance, so far as this is possible. This phase comes under the chapter "*Führung*," also under that of "*Organisirung des Gefechts*," and is of great importance to the further development of the action. Too much calmness and consideration cannot be demanded for this. If it be, according to Moltke, very difficult, often even impossible, in the domain of strategy, to rectify errors made in the first concentration of troops, this applies equally, tactically, to the assembly or engagement of large infantry masses.

It is frequently the custom to give the order for forming up before that for attack. This is not superfluous, if the formation be made sufficiently early from the deep columns of march into mass. In any case, by doing this the simultaneousness, the similarity, and with them the weight of the attack, will be promoted. The order for forming up has only to specify the points up to which the masses are to be moved, with a view to halting at them temporarily. These points must be situated out of the enemy's artillery fire. Then first begins the actual tactical reconnaissance, and, in connection with it, the orders are given for the engagement or attack. In doing this the hurry and flurry so frequently to be observed in peace should be altogether avoided; and calm, coolness, and circumspection are more than ever absolutely necessary, because, once the orders for attack have been given, changes of direction, movements of troops hither and thither, etc., can only lead to disadvantages. In this, as generally in war, it will, as a rule, lead to better results to carry through with energy a measure not altogether free from objections, than to change it subsequently.

In the deployment of the infantry masses into fighting formation, different views obtain as regards the distance from the enemy. Here and there it is taught that they must be as near as possible to the enemy. It stands to reason that for the execution of the attack it is more advantageous, both on technical and moral grounds, that the deployment shall be made as late as possible. In broken ground, cover from artillery and the distant fire of large bodies of infantry, as is usually employed in Russia, France, and Austria at these distances, may be available; but it is to be doubted if this will be the rule, having regard to the defenders, for whom an extensive, open field of fire is, and will continue to be, a fundamental requirement. It can, however, not be regarded as answering war conditions, if the attacker lays down ideal situations, so as to lessen the difficulties of the infantry attack. If it be one of the advantages of

the strategic offensive that it prescribes the law to the opponent, it is the reverse in the actual fight, that is to say, the attacker must in his tactical measures follow those of the defender. But this period is not always fairly considered, and so tactical representatives ensue favouring the attack, which appear to be more or less arbitrary.

From these considerations, it seems desirable to forego all illusions in the matter of the engagement and execution of the infantry attack, and always to keep in view the most difficult problem of attack, that on a prepared position, with an open field of fire up to the limit of effective artillery range (2,500 metres to 3,000 metres). Then follows the result, that the preparatory position for the infantry will in favourable cases be situated at this distance, and that from this distance must be practised rapid and secure deployment. In this first deployment is to be understood the fixing of the framework of the whole of the infantry to be employed in the attack, at least a division; if the approximately simultaneous advance of the infantry in the army corps can be attained, that would be the nearest approach to the ideal of an infantry attack.

The time for the organising of the most united advance practicable of the infantry is near; there can be no doubt of it, for the artillery engagement in modern battles occupies hours before the infantry is launched for the decisive advance. There is no lack of means for the organisation of an infantry attack in its broad outlines, provided the allotment of objectives, the indication of frontage down to individual battalions, the precise distribution of the several lines including approximate estimates of distances, detailing of the connecting troops, etc., have taken place previously. Even the existing advanced guard theory, now in practice, need form no hindrance to such a procedure, for according to this theory the advanced guard should cover the forming up of the troops to be employed, so that it must be possible for these to be organised for the purpose beforehand. The arguments also frequently advanced against the possibility of a "normal" arranged attack on a large scale, which are borrowed from the assumed *rencontre*-type of future battles, are not for the most part tenable, unless we are to accept tactical procedure by portions as normal.

Though it is not immaterial, at least for the tactical result, in what manner the first act, just described, of the employment of infantry in the battle is arranged, still greater tactical interest attaches to the following phase, viz., the advance of the infantry in the sphere of the enemy's fire. Here, so far as tactical peace training is concerned, there is practical unanimity as regards the one cardinal point, that an attack, once it has been launched, must be carried through with the utmost resolution until the charge with the bayonet. This principle appears sound, but more on the ground of training than from the probable character of the future battle, especially when one is of opinion that the next struggle will bring out unexpected scenes, and that a much greater *rôle* is reserved for the war of positions than is recognised by the tactics of the present, based generally on battles in the open field.

For the present, however, we have to do with the latter, so the

importance of a determined carrying through of the infantry attack can rightly be emphasised; also because the ideas in regard to the so-called tactical demonstration and tactical decision not seldom lead to some confusion as to the degree of energy to be displayed in the infantry attack. Here again it is detachment warfare that has to bear the chief blame, with its more or less strategic foundations, which allow of demonstration and manœuvre to a degree that is excluded from real war. In the latter, there is only one law and one mode of action: straight on and forward in the face of an enemy well covered and difficult to recognise! But it is in this that exists the difficulty of the problem, which many tacticians regard as a sphinx, whose secret will only be disclosed by the next war.

Others wish to lighten the solution of the problem by claiming the assistance of ground as an important factor for the attacker. Happily, there is here also a point of agreement for the different views, which is the nearly unanimous conviction (only the official Russian tactics are temporarily the exception) that the success of an infantry attack is dependent upon gaining a superiority of fire.

This is undoubtedly most easily obtained by concentric fire—it was for this reason Napoleon desired concentric fire, for he denied the decisive effect of frontal fire—which is synonymous with turning the defender. But in the majority of cases the infantry attack must renounce this means, for it is only given to a fragment of the attacking infantry to operate by concentric fire. In the battle of St. Privat-Gravelotte, the type of ordered battle, $3\frac{1}{2}$ German army corps had to carry through a purely frontal fire action. In any case, no procedure of attack can be based on the possibility of flanking fire.

No alternative, then, will be available but to achieve superiority of fire by mechanical methods; a problem, therefore, exclusively of a technical nature, at least for tacticians, who can reckon only with equal factors (moral, training, armament).

By obtaining the superiority of fire is to be understood, tactically, the physical and moral shaking of the defender; or, to reduce it to a fixed formula, the attacker must, in the so-called decisive fire position, understand how to cause the defender such great losses that his moral courage will be annihilated, to follow Clausewitz.

How now can the attacker reach this decisive fire position, which, logically, is the preliminary condition to securing the superiority of fire and its tactical results?

Some tacticians make it quite simple, and say: The attacking infantry advances without stopping, after it has changed from the rendezvous formation to fighting formation, right up to the main position, regardless of losses; and here defeats by superior fire the defenders, who, through this fearless advance, have been thrown into a condition of moral depression. If this recipe were capable of being put into execution, it would imply an enormous simplification of infantry tactics, and it would no longer be necessary to puzzle over the best way in which to reach the main fire position. But if we examine war experiences, and the lessons of ballistics,

this procedure breaks out as pure review tactics, which in war may be reckoned to result in failure with almost mathematical certainty.

That a brave infantry should not fear losses, is so self-evident a proposition, that words need not be wasted on it, or on this other: that a so-called humanitarian tactical procedure is a chimera.

On the other hand, the object of the fight is tactical success, victory, and not the heroic consciousness of being honourably struck down. But a body of troops which advances continuously, even assuming loose formations, which will be forced upon them naturally, even at a long distance, up to the decisive fire position, will suffer on the way, according to the evidence of ballistics—such losses that they will no longer be in a condition to open an overpowering fire; for this, in the first place, is dependent on the number of rifles. And if the attacker does open fire from this position under such unfavourable conditions, there is no reasonable supposition that the defenders will be crushed.

The views in regard to the distance from the enemy of the main fire position vary from 700 metres to 400 metres; probably it is on the borders of close ranges, or from 500 metres to 600 metres. Rohne estimates that 100 men, allowing for errors in estimating the distance, firing at 700 metres at figure targets, make 44·3 hits in the minute, at 600 metres 63 hits, at 500 metres 100 hits. After reducing these results materially for service conditions, looking to the circumstance that the defenders will on an average open fire at 900 to 1,000 metres, and that consequently the attackers between this distance up to 600 metres or 500 metres (following the theory of continuous advance up to the main fire position) must move as targets, the smallness of the chances of an enemy after sustaining this fire gaining a superiority of fire from 500 or 600 metres is self-evident. If the attacker fills up losses, the defender can do the same. This filling up, however, must equally take place under the defender's fire, and even if the attacker should succeed finally in bringing a rifle into action to every metre of front in the main fire position, it will have cost him much greater sacrifices than the defender will have suffered; so that the latter will be able at the close of the action to rely upon much more material for repairing losses than the attack. On the ground of the production of these proofs an end must at last be made of proclaiming as a tactical precept the continuous advance up to the main fire position. The doctrine that the attacker from the outset must work with their skirmisher lines, which should be gradually thickened into a superior firing line in the main position, is similarly situated. It stands and falls with the proof as to whether the greater percentage of loss is to be looked for with the thin or with the thick skirmishing line. Rohne says:—"Let us imagine two equally long lines of skirmishers, lying down (head and shoulders targets), firing at one another at 500 metres distance. Their length may be taken as 80 metres. The one skirmisher line has the closest intervals permitted by the regulations—one pace per rifle, 0·80 metre—the other the widest permissible—two paces per rifle. The closely-formed skirmisher line will consequently have 100, the more openly formed line 50 rifles in the front line.

Assuming equal musketry training, both will make exactly the same number of hits, for the stronger line which fires double the number of shots will in the same time make only half as great a percentage of hits, because its target is only half as thick as that of the weaker line: If four shots a minute per rifle be assumed, 92 hits will be made in five minutes by each detachment. In the stronger detachment by the calculations given 60 per cent., therefore 60 figures will be hit; in the weaker, 84 per cent., or 42 figures. In spite of the greater losses, the stronger detachment will still have the advantage, for, after deducting the casualties, it will still have 40 rifles in action, the weaker detachment only 8. Whereas at the commencement of the action its superiority was as 4·1, it will now be 5·1 in favour of the thicker skirmisher line. "Sparring" tactics, which would operate at the outset with their skirmisher lines, is as little calculated to gain superiority of fire as are sharp tactics, which, seen clearly, are characterised by a continuous advance up to close distances.

It may, however, be remarked that in the first phase of the engagement, a chain of battle patrols in the form of a screen of skirmishers should be extended in front of the framework formed by the foremost line of the deployed troops. In the French infantry these battle patrols have been embodied by regulation in a fixed system (32 men per company led by an officer); but the utility of this measure is prejudiced by the excess of strength employed. As the French battalion in forming part of a larger formation always extends two entire companies for the advanced fighting line, there are 64 *éclaireurs* in front of it, and the reproach met with here and there of "*éclaireurs gèneurs*" is justified. A screen of skirmishers of moderate strength—8 to 12 per company—advancing 400 to 500 metres in front of the foremost fighting line, affords protection from surprise, facilitates reconnaissance, guards against premature development of the skirmishing line, and serves at the same time as the outline for this when its enemy has been approached sufficiently near to commence firing. By the restriction in numbers of these battle-patrols here indicated, the danger is avoided of their engaging in a kind of preliminary action before the actual skirmisher line has taken up its first fire station.

There are differences of opinion as to the manner in which the several infantry lines should be distributed from the first deployment until the first fire station is occupied, and how they should move forward. There are questions whether all close formations are to be avoided, and whether two ranks, rank entire, or opened-out single rank, etc., are to be employed. In view of the increased effect of fire, the tendency is more and more in favour of the loose least vulnerable formations, and it seems that the opened-out single line (therefore a kind of skirmisher line) has, on ballistic grounds, the most prospect of later general employment, even for the rearmost lines; tactical grounds favour it also, for by means of it the change to skirmisher formation, which sooner or later is inevitable, is facilitated.

As to the distance from the enemy of the first fire station, different

views also prevail, but there is a tendency to leave out of consideration, as tactically untenable, the plan of having only one fire station as near as possible to the enemy; equally it is not worth discussing the objection often raised that the choice of the first fire station depends upon the ground. An enemy who leaves, in the most complaisant manner, the choice of the ground to the attacker must be a rarity; in any case, no tactical system can be grounded on this supposition.

The views in regard to fire being opened by the attackers are very far apart. There are advocates of distant fire who would open fire at 1,600 metres, or certainly at 1,200 metres, and this is almost exclusively the case where volleys are to be employed at long ranges. On the contrary, it is held, and especially in Germany—and this results again from the fundamental preference for individual fire—that fire should be opened at the earliest from 1,000 to 800 metres. This principle seems tactically more correct, because in the first place it limits the expenditure of ammunition, it supports the energy of the endeavour to get forward, and sufficiently regards the psychological moment, in that the attacker under effective fire will also use his rifle.

Excepting in Russia, there is practical unanimity, that the advance from the first fire station to the main fire position must be carried out by rushes. Equally in regard to the advance by rushes of the advanced line being carried out in concert with the pushing forward of reinforcements; and, finally, there is agreement that the fighting line in the main fire position must be enabled to maintain the utmost possible fire effect by the sending up of ammunition and reinforcements.

If the attacker is numerically very superior to the defender, he will be able to turn him, or if he is supported by a more effective artillery fire, he may be in a position to break down by fire the enemy's power of resistance.

But if these factors are not in his favour, it will be very uncertain whether the attacker will be in a position to so break down the defender from the main fire position as to venture on the assault with any prospect of success. In proof of this it may be stated that, according to Rohne, out of 100 rounds with fixed sights—which should be the rule at short distances—at whole figure targets at 500, 400, and 300 metres, the hits were 31·7, 35·2, and 37·7, respectively; whereas, at head targets, there were only 5, 6·2, and 8·4 hits. Thus the superiority of the defender, who is lying down under cover (head targets), over the advancing attacker (whole figure targets), as regards the effect of fire, is increased from four to sixfold within the actual zone of the assault. The further consequences follow of themselves, if one is of the opinion that the attack with the bayonet must be carried out without firing.

At this point, however, we are met by differences of opinion. It has been stated that it is impossible to traverse at the double the distance from the main fire position of 600 to at least 450 metres; and we must agree, if we consider that the exhausted infantry soldier, burdened with about 30 kilogrammes, can with difficulty traverse this distance at all at the double, particularly in unfavourable conditions of ground. Further, it is

not practicable to renounce firing altogether during the assault, for that will only encourage the defender to further resistance. There is the necessity, then, for firing; the difficulty is, which of the methods proposed is the most suitable in service conditions. One is that a so-called fire guard should be formed; that is, a part of the firing line remains lying down and keeps the enemy under fire, while the other part carries out the assault. Others would adopt firing while in movement; not alone on ballistic grounds, but also on psychological grounds. Those, finally, who are opponents of firing while in movement, would have a final fire position in immediate proximity to the defender, to meet the eventuality of a revival of the defender's fire during the assault.

As regards the fire guard, in the main it protects the advancing troops only from neighbouring fire, but not from frontal fire; and the throwing themselves down again at from 200 to 300 metres from the enemy will in most cases be synonymous with the collapse of the energy of the attack. But, relatively speaking, the best method is that of firing in movement, only, be it observed, from assaulting distance; for its adoption at long ranges seems a tactical error, and it is attributable chiefly to this exaggeration that firing in movement frequently fell into discredit. Besides this, officers experienced in war are of opinion that during the assault the men will utilise fire on their own account, in which case it is much better to organise the matter in the peace training.

The following is a general summary of the infantry attack, as its procedure may be derived from what has been said in the preceding pages:—

The first deployment takes place from the preparatory position, according as the object and direction of the attack dictate. Broad fronts must be chosen for it, so that an immediate change to fighting formation (long skirmishing lines) may take place at a distance of from 1,800 to 1,600 metres from the enemy. Equally, the distribution in depth is so arranged that, generally speaking, the second and third lines have only to move straight on to be in a position to reinforce the advanced fighting line. The reserves remain massed in a suitable position until it is clear how and where they will be employed.

The advanced fighting line is to be made as strong as possible from the outset. It is preceded by a slender line of battle-patrols, which will halt at from 1,000 to 800 metres from the enemy, at which distance the skirmisher swarms that are following them open individual fire.

The further advance is conducted chiefly by rushes up to the main fire position, 600 to 500 metres from the enemy. The lines in rear follow at first, with at least 250 to 300 metres distance, in opened-out single ranks. They are intended to keep the advanced fighting line up to the greatest practicable strength, for otherwise it is impossible to secure the superiority of fire. In this a gradual diminution takes place of the distances between lines.

The actual assault follows—after superiority of fire has been gained—by a continuous movement, in which firing in movement appears applicable if the enemy opposes the attack.

It stands to reason that, following the changing circumstances of the engagement, the infantry attack may take a different form. But it is wise only to fix in broad outlines a course of action for the tactical requirements of infantry in battle. The advantages in war of this are that it facilitates a definite method of peace training, and avoids uncertainty, and even waste of power, which can only act detrimentally, and affects the tactical confidence of officers and men. If, finally, it is left to every superior commander to adopt the technical, tactical methods he thinks best, by the change of commanders a continual change in this regard will be inevitable. The disadvantages of this for tactical instruction, and for a solid fighting organisation of the infantry, are evident. Such a course has nothing whatever to do with the restriction of the leader's independence and free action; both belong to the sphere of psychological training, whereas there is here only a technical question.

Further, the adoption of a fixed method of procedure facilitates the co-operation of the forces, and as a consequence the unity of their employment, which must be regarded as of great value, and spares the leaders of every rank much time and trouble by having to regulate during the actual fighting details of a technical nature.

THE EMPLOYMENT OF CYCLISTS IN THE FRENCH ARMY.

Special attention has been directed to the experiments that were made in France in 1896, as to the employment of cyclists for fighting purposes. There is nothing new in the use of cyclists for reconnaissance purposes—they are to be found in every Army; but great hesitation was experienced as to their value as fighting troops, as is usual in regard to most novelties in the military domain. As early, however, as 1895, Germany made an experiment on a small scale in one army corps during the manœuvres. The French military administration have taken the initiative, so far as having last year special cyclist detachments formed, which were exercised in different circumstances. Most attention was drawn to a cyclist company that was formed in the 87th Line infantry regiment, under the command of Captain Gérard, who was also the inventor of a collapsible bicycle, which has been reproduced in Germany.

During the divisional manœuvres, the company found a wide field of utility, in occupying important points in advance, or on one side of the main road of operation, in keeping defiles open, in securing the flanks, etc.; and all reports were unanimous in the opinion that it rendered important services to the troops it was attached to in securing favourable conditions in which to fight. This, from the tactical point of view, is of great importance.

That, in covering long distances, the cyclists can act more rapidly than the best cavalry, is noticeable, because cases can be imagined in which cyclist companies in front of their own cavalry may be of great tactical service, if utilised skilfully.

Once it had been proved in France that cyclists, with appropriate organisation, training, and leading, could be of value in certain cases as fighting troops, infantry gained a new means towards its tactical

independence, because security, reconnaissance, and the imparting of orders are combined with the fighting objectives; and now, outside the framework of the ordered battle, definite tasks can, in some circumstances, be successfully carried out by infantry without the assistance of cavalry.

Once the matter has been set going, no military administration can hesitate longer to promote it energetically. Of course, in doing so, exaggeration must be avoided, for the best organised cyclist formations will never be in a position to take the place of good cavalry; but both infantry tactics, as well as those of cavalry, will very soon have to reckon with this new body of troops. There seems no doubt that minor tactics will in future be materially influenced by them.

In France it was proposed to form, provisionally, 25 "compagnies cyclistes militaires," one for each army corps and each permanent cavalry division, which would in the event of war produce about 6,000 combatant cyclists. The more solidly such formations can be organised in peace, the greater will be their tactical employment in war; for attention must be directed again and again to the fact that, looking to the competition now prevailing in all military matters, in everything that affects tactical efficiency, the peace organisation, both as a whole and in detail, must prepare this effectively beforehand.

In Belgium, also, the military cycle service is already organised. There used to be a school of "Vélocipédie" attached to the carbineer regiment, but it has now been broken up. In its place, one cyclist company has been formed in each of the four battalions of this regiment. According to official instructions these companies are not only intended to form a certain number of orderlies for the field troops, but also are to co-operate with the cavalry in reconnaissance work, and form a support to them on occasion. Here also, then, we see a mounted infantry, which apparently has a future.

ALTERATIONS IN THE FIELD-SERVICE REGULATIONS IN AUSTRIA-HUNGARY.

During the past year a new and in part revised edition of the second part of the service regulations has been brought out, relating to duties in the field. The alterations are not for the most part material; but there is a new paragraph relating to outposts that appears disputable. It runs thus:—"The outposts must take up such a position that all the lines of approach open to the enemy which lead to the cantonments or camps of the troops and trains are covered in so far as the independent security by individual groups of the main body of the troops in these directions does not suffice."

In certain circumstances this may lead to an excessive expenditure of measures of security, and, at least, for the infantry this must be protested against, because a scattering of the forces will thus be inevitable, apart from it being a useless expenditure of power. Both can only reduce the tactical readiness of the infantry to fight, and if in many of the peace outpost exercises the mechanical element prevails in the form

of an endeavour to produce a prettily formed line of outposts which is to cover everything, this is done at the cost of the tactical element, and is hardly suited to service conditions. The infantry of the outposts must always be ready to fight, and consequently it must be concentrated. It is, therefore, much sounder to ask how weak the outposts can be than how strong they can be, when considering the provision of infantry for the advanced outpost line.

The German "Felddienst-Ordnung" supports this view by the following paragraph :—

"By day, and still more by night, the movement of troops, when not actually engaged, is restricted practically to the roads. It is, therefore, of advantage to occupy those roads that lead from the enemy. Once we have taken possession of these, the more considerable undertakings of the enemy cannot escape us, smaller movements near the roads will disturb the outposts, but they will not endanger the main body."

It is not, therefore, necessary to occupy every field road leading in the direction of the enemy with infantry or even with fixed cavalry posts. Very few outpost companies then, but in their place by day many cyclists, and by night so-called "Cossack posts" towards the enemy, so that the infantry may be able to economise its forces, for it is in the field to fight and only exceptionally for purposes of security.

NEW INFANTRY DRILL REGULATIONS IN RUSSIA.

After diverse and partly very lively discussions in the military Press, in which officers of all ranks participated with great freedom, provisional draft regulations have been framed, which are to be practically tested during the present summer by the 1st Infantry Division in camp at Smolensk.

They are characterised by the number of drill exercises being materially cut down, the formations in column restricted, looser, more handy formations favoured, and the entire fighting mechanism of a battalion simplified by its fundamental division in two parts (after the French pattern), the fighting line and the reserve. All these modifications are demanded by modern tactics, and only in one point do the Russian provisional regulations depart materially from their requirements, and in this a kind of national tactics seem to have taken their place; this is in the manner in which superiority of fire is to be obtained. There will be an opportunity of returning to this point in the following sketch of the mode of attack of an infantry regiment as prescribed by the draft, for, in testing it practically, the infantry of the 1st Infantry Division was formed mostly as one regiment on war strength, so as to obtain the nearest approximation possible to service conditions.

As soon as the enemy's position was recognised, the regiment deployed at a long distance, so as not to offer a favourable target to the hostile artillery, and commenced its advance. The development of the skirmisher line took place generally so far as from 2,000 to 1,800 metres of the enemy, and was formed by two complete companies per

battalion. The preference is given to this system from the following considerations of a psychological nature: firstly, because the company reserve after exposure to fire is not fitted to afford efficient support to the skirmisher line; secondly, because the energy and watchfulness of the company commander is divided; thirdly, because it is most desirable that from the outset at least half the number of rifles available should be brought to bear (formerly 25 per cent. was the proportion provided, whereas now it is 50 per cent.); and fourthly, because the battalion commander has for the time two companies in hand, whereas by the system of "petits paquets" he could, perhaps, dispose of one intact company, though generally he had only the supports left, which were really no good to him, for they were under the company commander in front.

The one really valid objection to the system of the whole of a company being extended, seems to be that in the further course of the engagement it will be impossible to avoid different companies becoming mixed up. The experiences of military history show, however, that in a pitched battle this cannot be prevented (it happened even at the battle of Mollwitz), and it should besides be a matter of indifference to well-trained troops whether men of a battalion or of a regiment have to fight mixed up together; and so long as the principle is maintained of entire regiments fighting side by side, the case of the men of different regiments being mixed should be of rare occurrence. It is not possible to prevent order being lost, and these mixed-up bodies are regarded by many superior officers as disordered crowds; but there is no doubt that organised disorder, so far as it can be practised in peace, is, after all, better than disorganised order. For order, in the mechanical sense of peace habitude, cannot be maintained in war; and, unless organised disorder is practised during peace, there will in war be no other alternative but tactical disorganisation.

The forward movement of the rearward lines was conducted in line; preferably, though, in formations with small heads (file formations). The whole—skirmisher line and reserve lines—moved at a walk. The double is only to be resorted to exceptionally, to cross very exposed ground. The advance by rushes is neglected as a rule, for from the first fire station, at a distance from about 1,200 metres, to the last fire station, at about 500 to 450 metres from the enemy, the advance of the skirmisher line is continuous at a walk. In the meantime, the rearward lines have diminished their distances, deployed from narrow formations into broad ones, and approached to a distance of 150 metres to 100 metres from the line in front of them. The enemy is stormed from the last fire position, with an accompaniment of magazine fire, and at 50 metres from the enemy the men cheer. In principle, the so-called "penetrating attack" is used here; that is, the whole of the lines of both parties must pass over each other. These "penetrating attacks" are a speciality of the Russian Army—they are practised also between cavalry and infantry; their object is to obtain the energy of the assault, even in peace. The tendency in itself can be understood; but a cool opponent, who knows

how to use his rifle, would give little opportunity to an infantry that expected decisive results from a "penetrating attack."

It is only the draft of the new regulations that has been dealt with, and the issue of these in their ultimate form must be awaited before a final judgment can be made. But in the meantime it is of great interest to recognise in the draft the main lines on which tactical thought in military circles is moving in Russia. This knowledge is supported by reading the various articles written from different points of view sometimes, in the *Vöjennii Sbornik*, all of which are occupied with the method of attack. The impression observable in them is that the Russian infantry should look for their salvation to the bayonet, and it seems often as if the rifle were regarded as a kind of useless evil; whereas at the present day tactics must really be based on the rifle, and not on the bayonet.

If, then, doubts must arise regarding many important questions in the tactical procedure which seems to be in course of creation in Russia, on the other hand, the appreciation of modern requirements appears to have been given its just value in the tactical formations and organisation.

THE ACTION OF THE COMBINED ARMS.

This subject can only be discussed from the point of view of service conditions if the framework of battle be adhered to. The tactics of detachments have no place here; they belong rather to the category "Kleiner Krieg." and not to that of the tactics of the three arms.

Further, the service of strategical reconnaissance, even assuming artillery and infantry to co-operate, is exclusively a matter of higher tactics of cavalry, for its capability of action and fighting power are sufficient here.

In protecting the march and in outpost duties the main point is always the appropriate employment of the cavalry, particularly now that by its capability of fighting on foot, and by its future combination with cyclist companies, cavalry possesses a high degree of tactical independence. At present it cannot be foreseen whether the further development of the military cycle service will increase the independence of the cavalry more than that of the infantry.

On the other hand, it must be concluded that in actual battle tactics, the action of cavalry will be relegated more and more into the background. Neither peace representations nor the efforts of the cavalry itself only to abandon step by step the ground on which its action was in part decisive, can alter much in this irresistible development. But there still remains plenty of scope for an enterprising cavalry, apart from the services of information and security, in fighting the enemy's cavalry, and—theoretically, at least—in the pursuit of a defeated enemy. Military history has, in any case, had little to record during the last 50 years of this last kind of operation.

Infantry and artillery have gained the more in their powers of destruction, and in this lies the fundamental element of all military action in war. Since, however, cavalry is constrained by the force of circumstances

to employ its firearm more and more, it renounces in a certain sense its independent tactics, for when fighting on foot it must employ infantry tactics. Its tactics are, therefore, now of a mixed nature, according as it fights mounted or on foot; whereas infantry and artillery have only one method of fighting. To this must be added that infantry has become more and more a distant arm—for infantry fire is now employed at distances formerly reserved for the artillery—and consequently it has got to have still more points in common with the artillery.

From these considerations the conclusion may be drawn that the tactics of the combined arms are still in a state of transition, and that it is not proposed to speak here *ex cathedra*. This applies especially to higher tactics, and this view is also taken in general in Lieutenant-General Freiherr von der Goltz's valuable work "*Kriegführung*."

Besides von der Goltz's studies, it is of interest to know the views of General Lewal, who, going beyond the usual programme of tactical considerations, discusses thoroughly night operations and battles of several days' duration. He holds the view that, in future, both will play a much greater rôle than is usually attributed to them. By night operations on a large scale, he means chiefly the moving up and placing in readiness of large masses of troops during the night, so as to attack at dawn. "The whole question is of great importance; the effect of fire nowadays is constantly increasing; in some cases it may be so great an obstacle, as to be only surmounted by darkness. Operating, therefore, by night cannot at times be avoided, and such operations must become more frequent the greater the progress made with the perfection of firearms."

The General wishes, therefore, to include such operations on a large scale in the peace training, and as regards the artillery he refers to the following paragraph of the German field artillery regulations:—"The difficulty of unlimbering in open ground under the enemy's fire may lead to darkness being utilised. In this case the border of the enemy's fire zone is approached the previous day, and the batteries are taken up, under cover of night, to the position chosen and if possible prepared, in order to begin the engagement at daybreak."

A similar procedure is advocated for the infantry, in which cases surprise and a determined advance must answer best. It may be observed that in Germany experiments have been made with cavalry masses operating by night by surprise, and that in Russia attempts have been made to reduce night operations to certain formulæ. In such undertakings mass tactics are especially recommended, which in operations by day are a thing of the past.

As regards the battles of several days' duration, they are difficult to separate from position warfare. Here also the usual methods of employment of the three arms would have in fact to find their way into new channels. The General says quite justly:—"The battle of the future will then assume certain characteristics of fortress warfare, and endeavours will be made to increase the destructive powers of artillery. Work must

be done during the night, but without over-exerting the men, for they must be held ready to resume the fight as soon as day breaks."

Should war be really of this nature in the future—and the probability of it being the case is increased from the fact that modern Armies occupy much less time to seek one another out and more time in fighting—the action of field artillery in combination with heavy batteries will become almost decisive, and the infantry will frequently have to adapt its action to that of the artillery in place of the reverse, which is the present arrangement.

The question of the degree of independence of leaders has a certain connection with that of the united and simultaneous co-operation of the forces in action. It appears to be in the nature of things that there is great danger in the one-sided accentuation of independence, especially when the three arms are engaged. If a cavalry leader under the formula of "independent" under all circumstances—and for the cavalry undoubtedly this qualification is of the utmost importance—were to undertake an independent cavalry action, without carefully weighing the small chances of success for his arm against artillery and infantry, such as was attempted, for example, on the 18th August, 1870, on the right flank of the German line of battle, such an excess in the employment of cavalry outside the general framework of battle, would have exactly the same failure as then.

The independence, therefore, in a battle of the several arms is very restricted; they are there much more dependent on one another than becomes apparent in peace exercises. This applies equally to the artillery, which is not so independent of infantry support as is often represented. The 18th August, 1870, is also an example of this, which is well worth attention, so far as regards the independent action of the artillery of the 9th Army Corps; and in further reference to this battle, the premature engagement of the Prussian Guards may be cited, premature as regards its connection with the general tactical situation. The intention was to carry through an independent infantry action without sufficient previous tactical use of the artillery.

It was pointed out in 1894 that a strong feeling was arising against the employment of large advanced guards, on the ground that their rôle was rather to observe and reconnoitre than to fight; and that with strong advanced guards composed of all arms, there was the danger they may become engaged in independent actions that will prejudice the unity of the operations of the whole. It is suggested, therefore, that advanced guards should be weak in infantry, have no artillery at all, and be strong in cavalry, and eventually provided with cyclist companies.

Apparently the composition of advanced guards is a point in which modern teaching is inclined to depart from the principle of a mixture of the arms as a basis. It seems evident that looking to its actual arms and training, cavalry can in some circumstances dispense even with infantry in the duties of advanced guards, especially if they should be furnished with cyclist companies. The advocates of strong advanced guards point out that they have to cover the deployment of the main body, and must

consequently have a certain fighting power, including artillery. If this were strictly so, there would be much in their favour, but experience has shown that the main body is easily led into directing its deployment so as to meet the fighting requirements of the engaged advanced guard. It is then all over with a united deployment and the employment of the entire force with a great object in view.

It is argued on the other hand, that the deployment of the main body, by which must be understood the mass of infantry, must before everything be covered by the artillery. But where can the artillery take up its position, if the advanced guard is already engaged in front of it? It would be obliged to take up its first position in the line occupied by the advanced guard, and it must be doubted whether this would be of advantage for the later formation of the main fighting front. If, however, no regard had to be paid to the action of the advanced guard, the first placing of the artillery could be carried out compactly and smoothly within the framework of the whole.

There are no differences in the opinion that the introduction of the artillery combat consists from the outset in tactical dispositions that will ensure concentration of fire, and the independent fighting power of the artillery is frequently held not to require an immediate protection by the other arms. Especially in those Armies in which the artillerymen are equipped with a rifle, it is maintained that infantry support is only required in the later stages of the action, when the enemy's infantry masses advance to the attack.

Similar unanimity almost exists that, in general, artillery will open fire at a range of about 2,500 metres, and at first will direct the whole of its efforts to overpowering the enemy's artillery; also that the whole battle tactics of artillery must never be a thing for itself, but it should always keep in view its main object, which is to prepare the way for the decisive attack of the infantry. Thanks to its numerical, technical, and ballistical superiority, this programme was in most cases carried out by the German artillery in the Franco-German war. It did not succeed before Plevna. Looking to the present high standard of capacity of all artillery, it is open to doubt whether it will be possible to carry it out in future with similar precision.

The infantry attack is undoubtedly the most difficult of all tactical problems. It seems indeed to many incapable of solution, if the infantry attack has to be carried through under artillery fire, and during a long space, for it begins to tell at 2,500 metres, and becomes more and more effective up to from 1,200 to 1,000 metres, without any protection from it being available. This is a long and bloody way, which was formerly unknown. The attempt is made to make the solution of the problem easier by simply eliminating the fire of the artillery as the disturbing element of the equation. The hostile artillery is overpowered, and then the infantry attack has only to deal with hostile infantry fire. But if we do not succeed in silencing the enemy's artillery? The attacker cannot still withhold the infantry attack; it must be engaged and carried out. The attacker may even fall into the position of having to let his infantry

go, in order to avoid the reverse proposition of his own artillery being overpowered by that of the enemy, or of abandoning the infantry engagement as purposeless.

These are no idle questions, but in books on tactics, as well as in the regulations, the precise answer is faulty, for everywhere the sentence is: "The artillery crushes the hostile artillery; it then directs its fire upon the infantry, which it regards thenceforth as its chief target." The same tactical axiom is applicable to the artillery of the defenders. On close examination, however, it will appear that however applicable theoretically these tactical requirements may be, as regards the artillery, in the opinion of the writer a system of battle tactics cannot be based on it, because the main factor, the overpowering of the artillery, is so uncertain.

It must be considered whether a return should not be made to the old tactical practice, and, without prejudice to respect for the increased importance of artillery, to make the main tactical event of the battle—the advance of the infantry—more independent of the co-operation of artillery; while at the same time shaping the tactical procedure of the principal arm, so as finally to promise success in spite of the defender's artillery fire. The old tactics had also to count in the infantry's attack with the enemy's case fire, which had been invented with the sole object of being used against infantry. This case fire had to be surmounted up to the closest distances, and no one thought the infantry could not succeed because it had to advance under this fire. The analogy speaks for itself. Only the procedure must not be based on the advance of columns of assault, but on suitably arranged swarms of skirmishers; in any case, such a system of tactics would have the advantage of not having to stand or fall according to the constantly uncertain success of the artillery duel.

We may think over these questions as much as we like; the fact remains that under all circumstances nowadays the artillery line forms the outline of the fighting front—the skeleton of the battle. The necessity then arises, if only from this fact, for every tactician—and this term includes every superior officer—being thoroughly instructed in regard to the procedure in battle, and the ballistic capabilities of artillery. This will better promote the proper appreciation of the working together of the several arms than many axioms, that appear only to exist for the purpose of preventing unprejudiced consideration.

Naturally, the infantry must see to the security of the artillery from hostile infantry fire in the later stages of the engagement. According to General Rohne, a line of skirmishers pushed forward to about 400 to 500 metres in front of the batteries will be sufficient.

Opinions differ as to whether the artillery of the attacker should take up one position only, not too far from the enemy, or change from one to another. There is unanimity of opinion that the artillery of an infantry that is advancing victoriously should second its efforts by advancing rapidly and energetically from one position to another.

The tactical conduct of the defence is incomparably simpler, both as regards the artillery and the infantry. Here there is in the main only one position; and the defence is, even without great advantages of ground,

so favourably situated both technically and ballistically, that it can do with the simplest tactical means in the main fighting front. Here all the measures taken cannot be sufficiently simple. For a normal defence, the principle is applicable that the available artillery should come into action from the outset, but only to engage the infantry when hostile infantry is in sight. It seems to stand to reason that strong reserves should be formed separately by the defender, and that his cavalry will be on the flanks. It is equally a matter of reason that the defender should never be passive, but always have in view a counter-offensive.

There can be no doubt the defence has increased in power, and it may happen perhaps in the future that a commander, not led away by the international doctrine of the unqualified benefit of the tactical offensive, may know how to reap the tactical advantages of this fact. He would then occupy his front comparatively weakly while skilfully preparing it, and when the enemy had suffered in frontal attacks, would advance with superior forces from a flank before the attacker's turning movements have become effective. It is undoubtedly a problem of the first rank, but its solution must not be declared impossible because the tactical tendency of the present day favours the offensive. These are good grounds only for the strategical offensive; there are some good grounds for the tactical offensive, but they are not sufficiently conclusive to allow of the advantages of a skilful tactical defensive being relegated into the background, because this is nowadays good tactical style.

The justness of the tactical principle generally laid down, that the defender should be placed with a narrow front, or as far as possible massed, may be doubted, on the grounds that the defender must avoid a deep formation, and must on the contrary occupy as wide a front as practicable, so as to make a turning movement by the attacker difficult. It appears to be sound, that a defender disposed in depth will be easier to turn than if he occupied an extended front. And if the defender in deep formation once falls under concentrated fire, his deployment will come too late.

It remains to consider the task that falls to cavalry tactically in the battle. The books of instruction say that it watches the suitable moment to act, not only on the flanks, but the so-called divisional cavalry even in the midst of the actual line of battle.

As regards the execution of these instructions, this, in the opinion of many tacticians, will become more and more difficult. Here and there it is taught that cavalry should be freed altogether from intervention in the artillery and infantry engagement. What is thought is, that the tactical rôle allotted to cavalry can, from the nature of modern fighting, be only carried out in exceptional cases; but that a well-led cavalry will be able to take its place in war, even though unable to fulfil the expectations formed of it in regard to battle tactics.

CAVALRY TACTICS.

Now that the Russian cavalry have received new regulations, the cavalries of the Great Powers of Europe have once more become as

similar in regard to tactical formations as it is possible to make them. Were it not that the distribution of regiments into squadrons (4 and 6) is different, an almost complete agreement would be reached.

The judgments also regarding the arm on the battle-field and its employment in masses are in agreement, only apparently Germany cannot decide to give effect to them by the organisation of permanent cavalry divisions in peace, as has long become a habitude in other places.

At the annual exercises battle tactics continue to play the principal rôle in all countries; the necessity for maintaining this cannot be gainsaid. But it appears only the more, time to give its due to the services of information on a large scale. This is particularly the case in Germany, for her opponents have always been equal on the battle-field, so that superiority must be sought in other directions. In this the hitherto somewhat neglected question of screening will be gone into more closely, and hand and hand with it system imparted into forwarding back reports.

The employment of cyclists with cavalry continues to make progress.

The question of armament has not entered a new stage. The German cavalry have not given up the lance, whereas France and Russia hold on to the sword. In France opinions still differ. They do not like the German lance, and would like to do something to meet it; but are doubtful as to the possibility of placing this arm in the hands of all the French cavalry. To enable this to be done heavier recruits would have to be got for the cavalry, which would necessitate again their being mounted on heavier horses.

The new German cavalry regulations of the 16th September, 1895, have gone through their first drill year. The troops have been able to test them during a drill period and during the autumn exercises, and this test has gone off well.

The new Russian cavalry regulations show progress in every branch of training. The wish urged in former years in the Press to restore to the Cossacks their national mode of fighting has not been regarded in the regulations, which may be taken as definitely settling the question. The *lâva* is left to them, but they must ride in close order; and firing in the *lâva*, as understood by the Cossack swarms, is not provided for. The conclusion has then apparently been drawn from the experiences of latter years, that only a Regular cavalry is of importance on the battle-fields of central Europe, and also that the Cossacks can keep pace with the training of the Line.

FIELD ARTILLERY TACTICS.

The previous year's Report commenced with the remark that there were, in the main, three questions, which for some years past had been under discussion. The first referred to the organic separation of a corps artillery, or the distribution of the whole of the artillery amongst the infantry divisions. This question has not been advanced in any way during the past year. It is referred to now only to correct a printer's

error. In the previous Report the sentence ran :—"The grounds for it" (viz., for the distribution of the whole of the artillery to the infantry divisions) "are not apparent." Whereas it should have been. "New . . . grounds are not apparent." As is evident from the previous Report referred to, the writer is an advocate for the distribution of all the artillery amongst the infantry divisions.

In the question regarding the future armament of the field artillery, which now as then occupies most interest, views have become more clear. It may remain undecided whether the circumstance that Russia has come to a decision on this important question, by electing for the increased effect of the single shot, has been of decisive importance. It is a fact, that the predilection for the light but quick-firing gun has retrograded still further; and that, so far as the Press has rightly gauged opinions, the gun with greater effect from its single shot is preferred. Even in France, whence the inspiration came for the small calibre quick-firing gun, a complete change of view has taken place. In the periodicals warning is given against precipitation, and the more powerful gun advocated; indeed, frequently the opposite fault is noticeable, and guns demanded that will fire much heavier projectiles than those now in use.

The writer continues to hold the opinion that in the present state of technical knowledge, the gun of the future should have a calibre of from 7·7 to 8 centimetres, and a shot of 7 kilogrammes, with an initial velocity of about 500 metres. The shrapnel should have the chamber in the base, and contain from 280 to 300 bullets. Such a gun would ensure a materially greater effect for the single shot than the existing gun, besides having increased mobility, and especially rapidity of fire.

The course taken during the past five years in the question of the field gun of the future, shows how necessary it is that the artilleryman who would come to a decision on the point, should not only be a tactician but also versed in ballistics, otherwise he may very easily get astray.

In close connection with the question of the future armament of the field artillery, is that of the future organisation of this arm, especially as regards the strength and composition of the batteries, which has been actively discussed during the past year. Starting with the assumption that the effect of the new field gun will be at best as great as the existing gun, and very probably superior to it, and that the rate of firing with the single gun will be about twice as great, the question was discussed in the *Militär-Wochenblatt*, what should be the strength of batteries on the introduction of such a gun, in order to employ its inherent qualities to the best advantage. (*Militär-Wochenblatt*, No. 13, 1896, "Ought the field batteries in the future to be formed of six or of four guns?") It was pointed out, that a battery composed of four quick-firing guns would produce the same effect in battery fire as a battery of six guns; for in battery fire, which is, and will continue to be, the rule for the artillery action, the six-gun battery cannot fire more rapidly than the battery of four guns. The reduction, however, of the number of guns from six to four would have many advantages: shortening of the columns of march, diminution of

breadth of front of the fire line, easier control of fire, and better training of the war batteries, from which it is inferred that the war battery of four guns would have even a greater effect than one of six guns, under the condition of course that battery fire is employed. With magazine fire, the battery of six guns will naturally have the greater effect; but with the ranges ordinarily employed, there can be no question of this, for the control of fire would get quite out of hand. As a disadvantage of the smaller strength, it was pointed out that losses would be felt more. With the same intervals between guns, the smaller battery, in similar conditions, will suffer fewer casualties than the larger one; but proportionately the losses, and with them the loss of fighting power will be greater.

The still burning question of the bombardment by the artillery of objectives situated under cover was much discussed during the past year. The *Revue d'Artillerie*, in an article styled "État actuel de l'armement des artilleries de campagne étrangères en pièce à tir courbe et obus brisants," summarises the actual situation as follows:—

1. A field howitzer or mortar has been introduced in France and Russia, and is under trial in England, Italy, Spain, Bulgaria, Turkey, and the United States of America. In Germany, Austria, Belgium, and Switzerland, it is intended to employ heavy guns belonging to the siege artillery for the purposes of the field army.
2. A high-explosive shell with thick walls and comparatively weak charge and time fuse has been introduced in Germany and Austria.
3. A high-explosive shell with thin walls and the heaviest charge practicable, with percussion fuse only, in France.