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Löbell's Annual Reports on the Changes and Progress in Military Matters During 1803

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v. LÖBELL'S ANNUAL REPORTS ON THE CHANGES AND
PROGRESS IN MILITARY MATTERS DURING 1893.¹

Compiled by Colonel H. T. HILDYARD, Commandant, Staff College.

It is to be much regretted that a further change has become necessary in the management of this valuable military publication, owing to the decease, in April last, of Lieutenant-General von Jarotzky. As was pointed out last year, with reference to the nineteenth annual issue, the first edited by this distinguished and much lamented officer, his endeavour was to continue the publication on the general lines laid down by his predecessor, while introducing such developments as might appear desirable. The volume now issued sufficiently proves that this endeavour was not made in vain, and apart from the intrinsic merit of its contents—which is great—a sad interest must always be attached to it from the fact that its preface was written by the late Lieutenant-General von Jarotzky, and is dated April, 1894, shortly before his death.

In this preface reference is made to the tables introduced for the first time in the nineteenth issue, 1892, showing in the case of each State dealt with in Part I, in a condensed tabular form, the composition and strength of its armed forces.

This addition was generally recognised as of great practical convenience, and the arrangement has been continued in the present volume with great advantage.

As is usually the case, the space occupied in Part I by details respecting the armies of the several European States is in general accord with the importance attributed by Germany to these forces. Thus France, Germany, Russia, and Austria have the lion's share, Italy and England following in second line. Bulgaria and the United States of America appear as additions, not comprised in the preceding issue.

In Part II the usual subjects, comprising the several branches of military art and science, are dealt with, except that military railways and telegraphs are this year omitted.

Under Part III will be found the record of military operations that have taken place, which were confined to minor conflicts in Africa, and comprised enterprises against the Arabs in the Congo State, the second expedition of the French to Dahomey, and the conflict between the Italians and dervishes at Agordat.

The following summary is necessarily much curtailed, and it is

¹ v. Löbell's "Jahresberichte über die Veränderungen und Fortschritte im Militärwesen." 20th annual issue: 1893. By the late Lieutenant-General Th. v. Jarotzky. Berlin: Mittler, 1894. 1 vol. Pp. 515. Price 12 marks.

confined to the two first parts of the Reports. It claims only to reproduce, in a condensed form, for the benefit of those officers who are unable to read the German original, some of the more interesting portions of the work. Happily the number of these officers is constantly diminishing, and it cannot be too strongly impressed upon all officers who have a sufficient knowledge of German that they should read the original. By doing so they will gain not only a more thorough insight into the organization of foreign armies and the leading military questions of the day, but they will increase their vocabulary by the majority of the modern military terms employed in Germany.

GERMANY.

Peace Strength of Active Army.

Arm.	Officers.	Non-commissioned officers, musicians, rank and file.	Service horses.	Horsed guns.	Horsed ammunition wagons.
Infantry	12,023	363,774	—	—	—
Cavalry	2,326	63,695	63,157	—	—
Field artillery ¹	2,623	56,469	28,538	2,512	97
Foot artillery	858	22,271	16	—	—
Pioneers	559	14,567	—	—	—
Train	305	7,391	4,053	—	—
	18,699	528,167	95,791	2,512	97

Organization.—The organic army law, as finally passed by the Reichstag, dated the 3rd August, 1893, differed materially from the Bill as first introduced in the previous year. The particulars given on page 3 of the précis of v. Löbell's Reports for 1892 referred to that Bill; but as amended and finally passed the following are some of the principal provisions of the law:—

Article I.—1st. The peace strength of the German army in privates, lance-corporals, and corporals is fixed at 479,229 men for the period from the 1st October, 1893, to the 31st March, 1899, as the average annual strength.

The one-year Volunteers are not included in the peace effective strength.

The non-commissioned officers are provided for in the same manner as the officers, surgeons, and civil officials in the Imperial Estimates.

2nd. From the 1st October, 1893, the organization by arms is:—

¹ This includes Horse artillery.

Infantry, 538 battalions and 173 half battalions.

Cavalry, 465 squadrons.

Field artillery, 494 batteries.

Foot artillery, 37 battalions.

Pioneers, 23 battalions.

Railway troops, 7 battalions.

Train, 21 battalions.

Article II.—For the period from the 1st October, 1893, to the 31st March, 1899, the following provisions will be in force regarding the period of obligation to serve:—

1st. During the period of obligation to serve in the active army the men of the cavalry and of the mounted field artillery are bound to serve with the colours without interruption during the first three years; all other men the first two years.

In the event of reinforcements becoming necessary, the men dismissed under the first paragraph may be recalled to active service on the order of the Emperor.

Ministry of War.—The arms department as such has been done away with. The general War Department absorbs the branches of the previously existing arms department in the following manner:—

1st. The small-arms branch and the branch for dismounted troops are amalgamated in one, to be called the "Infantry Branch."

2nd. The artillery branch, which is to be styled the "Foot Artillery Branch," is, so far as practicable, to be restricted to matter relating to foot artillery.

The central division is to be expanded as an experiment into one department with two branches.

Infantry.—As a result of pretty considerable changes in the division of the Landwehr districts in the spheres of the 6th, 7th, 8th, 9th, 12th, and 14th Army Corps, a great number of infantry brigades have quite a different distribution of their recruiting districts, which has further been influenced by the circumstance that cavalry and field artillery brigades have also been entrusted experimentally with the performance of recruiting duties.

Field Artillery.—A change has been imported into the post of Inspector of Field Artillery, by which he may report directly to His Majesty the Emperor; in connection with this, various alterations follow in regard to the relation of field artillery brigades to the Inspector of Field Artillery and to the general commanding the army corps respectively.

Foot Artillery.—An important change has taken place in organization. The number of foot artillery inspections has been increased from four to six, regard being had to the want of generals of this arm in war and also with a view to employing them in times of peace in conditions more like those of war. A change has been made simultaneously in the stations of the arm, which are now as indicated in the following table, in which is also shown the allotment to the several foot artillery inspections of the troops of that arm and of the artillery dépôt inspections.

Distribution of the Foot Artillery Inspections in Peace.

Foot artillery inspec- tions.	Station.	Foot artillery formations.	Artillery depôt inspec- tions.	With the artillery depôts in	
				Fortresses.	Open places.
I.	Berlin	Guard Foot Artillery Regiment. Foot Artillery Regiment Encke (Magdeburg) No. 4. Lower Silesia Foot Artillery Regiment No. 5.	1 and 3	Spandau. Küstrin. Posen. Magdeburg.	Berlin. Erfurt. Wittenberg.
II.	Berlin	Foot Artillery Regiment v. Linger (East Prussia) No. 1. Foot Artillery Regiment v. Hindersin (Pomerania) No. 2.	2	Königsberg (Memel). Boyen. Pillau. Swinemünde. Danzig.	Stettin. Bromberg. Rendsburg. Schwerin.
III.	Cologne.....	Westphalia Foot Artillery Regiment No. 7. Schleswig-Holstein Foot Artillery Regiment No. 9.	3	Wesel. Cologne. Coblenz.	Münster. Hanover. Cassel. Darmstadt.
IV.	Metz	Foot Artillery Regiment General Feldzeugmeister, Brandenburg, No. 3. Rhenish Foot Artillery Regiment No. 8. Royal Saxon Foot Artillery Regiment No. 12.	4	Mainz. Metz. Diedenhofen.	Saarlouis.
V.	Thorn	Foot Artillery Regiment v. Dieskau (Silesian) No. 6. Foot Artillery Regiment No. 11. Foot Artillery Regiment No. 15.	1	Glogau. Glatz. Thorn. Graudenz.	Breslau. Neisse.
VI.	Strasbourg, E.	Foot Artillery Regiment No. 10. Foot Battalion No. 13. Baden Foot Artillery Regiment No. 14.	4	Strasbourg (Bitsch). Ulm. Neu Dreisach.	Karlsruhe. Rastatt.

Engineer Corps.—Important changes in organization have been made here also. One of the previously existing four Engineer inspections, the 4th, has been abolished. The previous 8th, 9th, and 10th fortress inspections have been converted into the 2nd, 4th, and 5th, located at Kiel, Thorn, and Strasburg respectively. The two fortress inspections formerly at Berlin and Mainz have been dispensed with.

The following shows the distribution for the future of the Engineer inspections :—

1st Engineer Inspection, Berlin	{	1st Fortress Inspection, Königsberg.
		2nd " " Kiel.
2nd " " "	{	3rd " " Posen.
		4th " " Thorn.
3rd " " Strasburg	{	5th " " Strasburg.
		6th " " Metz.
		7th " " Colognc.

There has also been a change in the pioneer inspections, which have been increased by one provisionally; besides this, a new superior command has been created for the pioneer troops. It is restricted for the present to the 1st, 15th, and 16th Army Corps, and the officer holding it is styled commander of the pioneers of the army corps concerned. The requirements of war rendered this appointment indispensable.

The following is the distribution of the several inspections :—

1st Pioneer Inspection, Berlin	{	Command of the pioneers, 1st Army Corps, Königsberg.
2nd " " Mainz	{	Command of the pioneers, 15th Army Corps, Strasburg.
3rd " " provisional, Magdeburg.	{	Command of the pioneers, 16th Army Corps, Metz.

To the 1st and 2nd inspections are allotted seven pioneer battalions each and six to the 3rd.

New Formations. Infantry.—From 2nd October, 1893, a half battalion was added to each of the existing 133 infantry regiments of the Prussian Army and of the contingents administered by Prussia, and constituted the 4th battalion; the companies bear the numbers 13 and 14 respectively. Similar provisions took effect in the 20 Bavarian infantry regiments, in the 8 Wurtemberg, and in the 12 of Saxony.

Field Artillery.—16 division staffs for field batteries and 48 batteries; 1 division staff and 3 batteries as 2nd Instructional Division of the field artillery practice school. The field batteries were renumbered throughout the regiments; new 4th Divisions were given to 14 of them, and new 3rd Divisions to two; in four, existing 4th Divisions were completed by the addition of one new battery.

In Bavaria 2 division staffs and 6 field batteries (3 to each army corps).

In Wurtemberg 1 division staff and 3 field batteries.

In Saxony the field artillery is now constituted in 2 regiments of 4 divisions of 3 batteries and 1 regiment of 3 divisions of 3 batteries as follows :—

Field artillery regiment No. 12, 9 dismounted and 3 mounted batteries.

„ „ No. 28, 9 dismounted batteries.

„ „ No. 32, 12 „ „

Foot Artillery.—In Prussia three new foot artillery regimental staffs were created, viz. :—

For the Schleswig-Holstein Foot Artillery Regiment No. 9.

„ Baden „ No. 14.

„ Foot Artillery Regiment No. 15.

Five new battalions were added to the arm, viz. :—

A 2nd battalion for the Schleswig-Holstein Foot Artillery Regiment No. 9.

A 2nd battalion for the Baden Foot Artillery Regiment No. 14.

A 1st and 2nd battalion for the Baden Foot Artillery No. 15.

A 3rd battalion for the Foot Artillery Regiment v. Hindersin (Pomeranian) No. 2.

A third instructional company was added also to the school of gunnery, together with a battalion commander and an adjutant.

In Bavaria a third battalion was added to the 2nd Foot Artillery Regiment.

In Wurtemberg the 13th Foot Artillery Battalion has been converted into a Prussian one.

In Saxony a fifth company (9th) has been added to the 2nd Battalion of the Foot Artillery Regiment No. 12.

Train.—A third company has been added to the Prussian Train Battalion No. 16.

Recruiting Arrangements.—Under the new law the annual contingents allotted to the several units are to be as stated below, both for previously existing units and for those added to the establishment by the above-mentioned law :—

Battalions of infantry, including the 4th battalions.

The Grand Duke of Mecklenburg's jäger battalion No. 14.

Dismounted field artillery batteries.

Battalions of foot artillery.

Pioneer battalions.

Railway battalions.

Balloon division.

Train battalions having two years' service with the colours.

Half of the established number of corporals, lance-corporals, privates, and hospital subordinates, exclusive of re-engaged men; half the vacancies in the authorized number of these may be filled by calling up more recruits :—

Other jäger battalions on the higher establishment, at least	283	recruits each.
The guards jäger battalion, at least.....	250	"
Other jäger battalions on the lower establishment, at least	258	"
Cavalry requirements on the higher establishment, at least.....	35	"
Cavalry requirements on the medium establishment, at least	32	"
Cavalry requirements on the lower establishment, at least	25	"

Train companies, men having a half year's service with the colours in the autumn of 1893 and the spring of 1894, 38 each.

The whole of the troops are to replace yearly half of the tradesmen borne on the future establishment.

In addition to the recruits to be called up under the foregoing provisions, the Minister of War is authorized to call up a sufficient number to replace vacancies arising from death and unfitness, also for replacing the sick attendants, bakers, &c., who have served their time.

Increase in the Number of Officers.—The number of officers who joined the active list of the army was, infantry, 757; cavalry, 215; field artillery, 277; foot artillery, 58; pioneers and railway troops, 70; total, 1,377 officers.

The reserve and landwehr received together 1,515 second lieutenants of all arms.

The waste to put against these numbers was as follows:—From the active list, 67 generals, 55 colonels, 42 lieutenant-colonels, 113 majors, 162 captains, 99 first lieutenants, and 229 second lieutenants of all arms: total, 767 officers; from the reserve and landwehr, 79 field officers, 190 captains, 958 first and second lieutenants of all arms; total 1,227 officers.

The above numbers represent an increment of 610 officers to the active list and 288 to the reserve and landwehr.

Non-commissioned Officers.—Effect was given in 1893 to the scheme long advocated in the army of giving a gratuity to those soldiers who engage to serve with the colours after the termination of their obligation. It is hoped by this means to materially increase the number of non-commissioned officers, the want of whom was becoming more and more apparent with all arms.

The general provisions of the scheme are as follows:—

A gratuity of 100 marks will be granted for the first re-engagement, which consists in the soldier undertaking to serve—irrespective of the arm to which he may belong—for a continuous total period of at least four years (four-year volunteers of cavalry for five years). The payment is made at the expiration of the soldier's legal period of service with the colours. Various classes are excluded from the benefit of the arrangement, notably those who have come from the non-commissioned officers' schools, officers' servants, regimental tradesmen, sick attendants, bakers, &c.

In the arms, active service with which has been fixed at two years, soldiers who complete this period of service on the date fixed for the transfers from the colours will be treated as if they had completed their legal term of active service.

From October 1, 1893, special provision for re-engaged men has been included in the establishment, a commensurate reduction being made in the number of lance-corporals. The established number of re-engaged soldiers may at any time be exceeded, provided vacancies amongst lance-corporals up to the number in excess be kept unfilled.

Training of Men not in Active Service.—In the Prussian army and in the contingents administered by Prussia the numbers called up, as stated below, include 10 per cent. of non-commissioned officers.

Infantry, from the Reserve	60,000	men
" " landwehr	60,000	"
Total	120,000	"
Field artillery, from men not in active service of the field artillery and cavalry	10,000	"
Foot artillery	5,000	"
Pioneers	3,000	"
Railway brigade	792	"
Train	5,630	"

The infantry reservists were exercised generally with the line troops, without being organized in special bodies; the landwehr men were trained in companies at the stations of the infantry.

For the cavalry men the training took place with the cavalry or field artillery regiments or with the train battalions.

The field artillery men were trained in special batteries with the field artillery regiments. The foot artillery were collected in companies and attached to battalions.

The pioneers, as a rule, were with the pioneer battalions.

In the train, special exercise companies were formed attached to the train battalions. Of officers those from the rank of second lieutenant to that of major were called up. The duration of the training was from 14 to 20 days, and took place between the 1st April and the enrolment of the recruits.

In Bavaria the numbers called up were: infantry, 17,000; field artillery and cavalry, 14,000; foot artillery, 700; pioneers, 665; and train, 1,190, including non-commissioned officers.

In Wurtemberg the training of the infantry and pioneers belonging to the reserve and landwehr did not take place on account of the extensive manœuvres held in the autumn.

Of the field artillery and cavalry, 500 men (including non-commissioned officers) were called up for special training, and 200 men of the train.

School of Musketry.—There were during 1893 three "information" courses, each for 22 lieutenant-colonels and majors, and one "information" course for 30 regimental commanders and field officers of equivalent rank, in which the whole of the Prussian Army Corps,

including the Hessian Divisions (25th), as well as the Saxon 12th Army Corps and the Wurtemberg XIIIth Army Corps, participated.

Of ordinary officers' courses of instruction there were four: 60 captains and 30 lieutenants attended each course. Non-commissioned officers' practice courses were held at the school of musketry and at the practice grounds at Arys and Munster, one at each; the whole number of non-commissioned officers that took part in them was 420.

The "information" courses lasted 14 days; they commenced in March and ended in September. The officers' courses of instruction lasted six weeks during the period from February to August; the practice courses took place during the same time, the non-commissioned officers being formed for the purpose into three practice companies at Rubleben (Spandau), Arys, and Munster respectively.

Field Artillery Practice School.—Information courses were attended by regimental commanders and field officers as in previous years. The first course commenced on the 15th October instead of on the 1st as previously.

General Staff and Cavalry Tours.—General Staff tours took place in nine Army Corps, and in one, the 17th, a fortress General Staff tour was made. Each of the two Inspectors of cavalry supervised an extensive cavalry tour in which General and field officers of cavalry and commanders of mounted divisions of field artillery took part. Ordinary cavalry tours were also held in eight Army Corps.

BELGIUM.

Peace Establishments, Infantry.—Four divisions, with their quarters at Ghent, Antwerp, Liège, and Brussels respectively; strength, 1,921 officers, 28,810 men, 254 horses.

Cavalry.—Four brigades; located, 2 at Brussels and 2 at Ghent respectively; strength 368 officers, 5,744 men, 5,560 horses.

Field Artillery.—Four regiments; 2 at Ghent and 2 at Brussels.

Fortress Artillery.—Four regiments; 2 at Antwerp and 2 at Liège.

There are, further, 4 special artillery companies and 5 special pioneer companies. Total strength of artillery, 616 officers, 8,309 men, 2,922 horses, 204 guns.

Engineers.—1 regiment at Antwerp; strength, 152 officers, 1,433 men, 17 horses.

War Strength.—On mobilization the following formations are completed:—

Four Army Divisions, each of 12 battalions (the 1st and 2nd divisions have, in addition, each 1 rifle battalion), 2 squadrons of cavalry, 7 batteries of field artillery (the 1st and 4th divisions have 8 batteries), 1 engineer company, and 1 train company. The auxiliary formations with each army division are 1 administrative company, 1 section field telegraphs, 1 administrative detachment, 2 artillery and 2 infantry ammunition columns, 1 section engineer park, 1 sanitary detachment, 2 field hospitals, 2 provision columns, and 1 horse dépôt.

Two Cavalry Divisions, each of 16 squadrons, with 2 horse artillery

batteries. Each division has attached to it 1 subdivision of a train company, 1 artillery ammunition column, 1 administrative detachment, and 1 sanitary detachment.

Fortress Troops.—For the mobile defence of—

Liège, 4 active battalions and 2 squadrons.

Namur, 2 active battalions and 2 squadrons.

Antwerp, 1 active and 10 Reserve battalions, 4 squadrons cavalry, 6 Reserve field batteries.

The scheme does not provide for the cavalry being formed until the mobilization takes effect.

For actual garrisons of the above-named places, 28 reserve battalions, 4 fortress artillery regiments, and 12 engineer companies; also 1 fortress telegraph company, 1 company of artificers, 1 fortress pontoon company, and other special formations.

Ersatz Troops.

19 infantry detachments.

8 cavalry detachments.

4 field artillery detachments.

4 fortress artillery detachments.

1 train detachment.

1 engineer detachment.

Strength on War Footing.

Field army		72,932 men.
Antwerp { garrison	20,833	30,916 "
{ mobile troops....	10,083	
Liège... { garrison	4,843	8,949 "
{ mobile troops....	4,106	
Fortress troops:—		
Namur.. { garrison	4,810	6,882 "
{ mobile troops ...	2,072	
Termonde.....		4,427 "
Diest.....		2,612 "
Guy		586 "
Ersatz troops		3,978 "
Total		131,312 "

Organization.—The services of railways, posts, and telegraphs in the field have been regulated by a decree, and during peace-time a mixed committee of officers and civilians has been formed, and also a sub-commission for transports.

1st. This standing committee has to decide upon the laying-out of new lines of rail, on the construction of railway bridges, aqueducts, and buildings of a like nature, also upon the alteration of existing lines.

2nd. The sub-committee regulates the line transport in peace.

3rd. The field-railway, post, and telegraph services are so regulated that a superior official, with the necessary staff, from each of these branches is attached to the officer in command, and acts according to the direct instructions given by him. Of the 7 field post offices, 1 is allotted to headquarters and 1 to each of the 4 army and 2 cavalry divisions.

Formation of Divisions of Artillery.—The active batteries of the field artillery have been formed into divisions of 3 batteries each, except that in the 1st and 4th regiments the 3rd division consists of 2 batteries only. The horse artillery batteries have been formed also into 2 divisions, each of 2 batteries, belonging respectively to the 2nd and 4th regiments.

Experiments in Entraining and Detraining Troops.—Some interesting trials were made with various units:—

1st, *a Battalion.*—Composition: 20 officers, 1,020 men, 28 horses, 1 ammunition, 3 baggage, and 1 provision wagons. Railway matériel: 4 horse and 16 specially-fitted wagons for men, 3 carriages 3rd class, 2 1st and 2nd class, 1 truck for transport of ramps, 1 wagon for the railway officials, 2 engines. The entraining by day in the station took 37 minutes; detraining by night in the open 40 minutes, in the station 20 minutes.

2nd, *a Squadron.*—Composition: 5 officers, 100 men, 170 horses, 2 vehicles, 1 field forge, and 1 foraging cart. Railway matériel: 22 horse and 1 adapted men's wagons, 2 open trucks for the vehicles, 1 for the ramps, 1 carriage (1st and 2nd class), 1 for the railway officials, 2 engines.

To entrain by day in the station with 3 firm ramps required 52 minutes, the horses alone 32 minutes; by night in the open the time taken was an hour and 18 minutes, the horses alone 57 minutes. To detrain in the open by day required 1 hour and 15 minutes; at the station by night 57 minutes.

3rd, *a Battery.*—Composition: 5 officers, 166 men, 154 horses, 6 guns, 9 ammunition wagons, 1 reserve limber, 3 carts, and 1 field forge. Railway matériel: 20 horse wagons, 11 open trucks, 1 fitted men's wagon, 1 truck for bridges and ramps, 1 carriage for the railway officials, 2 engines. The entraining in the station by day, using 2 platforms, which allowed of the simultaneous entrainment of horses, wagons, and men, occupied 1 hour and 35 minutes; at night in the open 1 hour 20 minutes. To detrain by day with the train divided into 2 portions of 150 m. required 1 hour and 8 minutes; at the station by night 1 hour.

4th, *an Infantry Ammunition Column.*—Composition: 2 officers, 102 men, 156 draught horses, 1 officer, 25 men of infantry, 4 gunners, 1 battery cart, 1 field forge, 21 ammunition wagons. Railway matériel: 5 passenger carriages, 20 horse wagons, 16 open trucks (1 of which for flying bridges and ramps), 1 carriage for the railway officials, 2 engines. Entrainment and detrainment occupied each 1 hour and 30 minutes.

5th, *a Provision Column.*—Composition: 1 officer, 33 men, 103

draught horses, 1 officer, 31 men of the administration, 9 provision wagons of 3,250 kilos., and 15 supply wagons of 2,500 kilos. The entrainment in the station occupied 1 hour 20 minutes, in the open 1 hour 15 minutes; the detraining in the open 2 hours 15 minutes, in the station 2 hours 20 minutes.

BULGARIA AND EAST ROUMELIA, 1892-93.

Peace Composition.—The active army is formed in 6 army divisions, the headquarters of which are at Sofia, Philippopol, Slivno, Schumla, Rustchuk, and Widdin respectively. The composition of each division is similar as regards infantry, of which there are 4 regiments of 2 battalions each per division, and as regards artillery, of which each division has 1 regiment of 5 field batteries and half a mountain battery. The cavalry is distributed 1 divisional sotnia to each of the divisions, 1 cavalry regiment of the line each to the 1st, 2nd, 3rd, and 6th divisions, and a lifeguard squadron with the 1st division. The 4 line regiments form a cavalry division, the staff of which is at Sofia.

There are 3 battalions of pioneers, belonging respectively to the 1st, 4th, and 5th divisions, 1 railway company, and 1 telegraph company, both with the 1st division; also 1 pontoon company with the 5th division. These 3 pioneer battalions and 3 special companies form a brigade, having its staff at Sofia.

The fortress artillery consists of 2 battalions, each of 3 companies, 1 is with the 1st division, the other with the 6th.

There are a train company and a sanitary detachment with each division.

Strength in Peace.—By the budget for 1893 the following is the strength by arms:—

Arm.	Officers.	Non-commissioned officers and men.	Service horses.	Horsed guns.
Infantry	1,614	24,047	994	—
Cavalry	173	3,579	3,582	—
Artillery	330	6,492	2,578	132
Pioneers	82	1,783	56	—
Together	2,199	35,901	7,210	132
Total	38,100			

The above establishments were, however, not reached during the year; they were kept about an average strength of 9·5 less, from motives of economy it is believed. For 1894 the total establishment has been fixed at 35,919 men.

Constitution for War: 1st, the Field Army is composed of 6 divisions, each consisting of the following formations:—

Infantry, 4 regiments each of 4 battalions.

Pioneers, 1 battalion.

Artillery, 1 regiment, comprising :—

5 field batteries of 8 guns	} together 52 guns.
1 mortar battery of 6 guns	
1 mountain „ „	

Divisional cavalry, 2 squadrons.

Field gendarmerie, 1 squadron.

Train „ 1 battalion.

Sanitary detachment, 1 company.

There are, further, the sanitary transport, divisional field hospital, supply detachment, and a half company of *etappen* gendarmerie.

The 6 divisions together include the following units :—

Infantry, 120 battalions.

Pioneers, 6 „

Artillery, 30 field batteries, or 240 guns.

6 mortar batteries, or 36 mortars.

6 mountain batteries, or 36 guns.

Divisional cavalry, 12 squadrons.

Train, 6 companies.

Sanitary service, 6 companies.

There are, further, a cavalry division of 2 brigades, each of 2 regiments, viz., 4 regiments of 5 squadrons, or 20 squadrons, 1 squadron of the Prince's Bodyguard, and 3 battalions, or 12 companies, of fortress artillery.

The field army has the following special establishments and services: 1 telegraph park, 1 pontoon park, 1 railway company, 1 park company, 2 artillery parks, 1 central *etappen* hospital, *etappen* hospitals, 2 movable artillery workshops, 2 movable artillery depôts, 1 horse remount depôt, 1 evacuation committee, 1 chief supply administration, *etappen* command establishments.

Bodies of troops larger than divisions are not provided for beforehand, but the establishments mentioned above admit of their formation.

2nd. The Reserve Army (Landwehr).—This is composed equally with the field army of 6 divisions, each consisting of :—

Infantry, 4 regiments of 4 battalions.

Artillery, 1 regiment of 6 field batteries of 4 guns, 1 mountain battery of 4 guns; total, 28 guns.

Divisional cavalry, 2 to 3 squadrons.

Pioneers, 1 company.

Train, 1 battalion.

1 divisional hospital and 1 supply detachment.

The 6 reserve divisions together comprise the following units :—

Infantry, 96 battalions.

Artillery, 36 field batteries, 6 mountain batteries; total, 168 guns.
 Cavalry, 12 to 18 squadrons.
 Pioneers, 6 companies.
 Train, 6 battalions.
 6 divisional hospitals and 6 supply detachments.

There are besides 1 artillery park, 1 movable artillery workshop.

3rd. *Landsturm*.—The 1st and 2nd levy each form 24 *Landsturm* battalions of from 3 to 5 companies. The battalions of the 1st levy are organized in 6 regiments of 4 battalions, those of the 2nd levy have no organization higher than the battalion. The other arms have no existence.

4th. *The Ersatz Troops for the Field and Reserve Armies:*

Each line regiment, 1 battalion, 1 squadron, and 1 battery.
 Each reserve regiment, 1 company, 1 subdivision cavalry, and 1 subdivision of a battery.

Strength of mobilized Forces.

Formation.	Men.	Horses.	Guns.
Field army	120,000	5,850	312
Reserve army	96,000	2,700	186
<i>Landsturm</i>	48,000	—	—
Total	264,000	8,550	498

That is about 8 per cent. of the population.

New Formations.—The existing organization of the Bulgarian Army is based on the law of December, 1891. This was given effect to in 1892 to the extent of forming 3 companies in cadre for the 24 reserve regiments—the cadres consisted of from 7 to 9 officers and 84 men per regiment—and of creating 3 of the 6 reserve batteries. The remaining 3 batteries were formed in 1893. The strength of each battery is 7 officers and 204 men.

Of cavalry, 6 independent divisional formations were created, each consisting of 5 officers and 148 men.

Changes in Establishments and Formations.—The establishment of an infantry regiment was fixed at 50 officers, 6 surgeons and officials, and 898 men; of a cavalry regiment at 25 officers, 6 surgeons, &c., and 649 men; of an artillery regiment at 31 officers, 5 surgeons, &c., and 663 men.

A change was made in the artillery regiments, which, up to 1892, were composed of 4 batteries of field artillery and a subdivision of mountain artillery. An addition has since been made of 1 field and 1 mortar battery to each regiment, and the subdivision of mountain artillery increased to a half battery. At present, consequently, each

of the 6 artillery regiments consists of 5 field artillery batteries (of 8·7 and 8 cm. calibre) of 4 guns in peace and 8 in war, 1 mortar battery (12 cm.) of 6 guns, and half a mountain battery with 3 guns, which in war would be augmented, and form a whole battery with 6 guns.

The establishment of the fortress battalions is fixed at 12 officers, 2 officials, and 329 men; of the sanitary companies at 1 officer and 59 men.

The distribution of the Bulgarian Army is kept secret, on account of Servia, and no official publication on the subject is available. But from trustworthy private sources the following appear to have been the stations of the army at the commencement of 1893:—

Infantry.

No. 1 Regiment....	Sofia.	No. 17 Regiment..	Staff and 1 battn.
2	"		Rustchuk.
3	"		1 battn. Silistria.
4	"	18	" .. Tirnova.
5	"	19	" .. Schumla.
6	"	20	" .. Varna.
7	"	21	" .. Staff and 1 battn.
8	"		Hermanly.
9	"		1 battn. Pesch-
10	"		tera.
11	"	22	" .. Staff and 1 battn.
12	"		Tatar Bazard-
13	"		jik.
14	"		1 battn. Stani-
	Radomir.		maka.
	1 battn. Tzari-	23	" .. Staff and 1 battn.
	brod.		Kazanlik.
15	"		1 battn. Stara
	Widdin.		Zagora.
	1 battn. Belgrad-	24	" .. Staff and 1 battn.
	schik.		Burgas.
16	"		1 battn. Jamboly.
	Staff and 1 battn.		
	Plevna.		
	1 battn. Lortscha.		

Cavalry.

No. 1 Regiment....	Sofia.
2	"
3	"
4	"

Artillery.

No. 1 Regiment....	Servlierno.
2	"
3	"
4	"
5	"
6	"

Recruiting Areas.—The distribution of recruits has also been re-arranged in connection with the new law. Formerly this was very irregular, so that on the occasion of the last mobilization (1885) much friction was experienced. Now each of the 6 territorial division districts furnishes the men for the 4 infantry regiments, the 1 artillery regiment, 2 companies of pioneers, the 4 reserve regiments, and the 1 reserve battery. The infantry and the reserve regiment

are supplied exclusively from the area allotted to their number; the rest are completed from the entire divisional district. All the troops not mentioned above are supplied from the whole country. It is to be noted that during the last two years men have had to be taken from their own regimental area, and even from the divisional district, to complete units elsewhere.

Mobilization.—The preparations for mobilization, which in past years were very defective, have, during the period of office of the present War Minister, been completed, so that, in the event of a sudden order to mobilize, the Bulgarian Army would be found better prepared for it than any other army in the Balkan Peninsula. The mobilization would, in any case, be effected more rapidly and with less friction than was the case in the last war with Servia. The chief difficulties in carrying it out would lie in the large number of new formations to be created for war, and in obtaining the necessary number of horses.

FRANCE.

At the close of 1893 the total strength of the active army, including the augmentation by the newly-raised 14th Hussars and 31st Dragoons, the addition of 2 companies to 4 rifle battalions, and the reduction by the number of squadrons of the 2nd and 3rd Spahi regiments being changed from 6 to 5, was as follows:—

Infantry.

	Bat- talions.	Com- panies.
145 subdivisional infantry regiments, Nos. 1 to 144 and No. 160, each of 3 battalions, and 1 supplementary cadre.....	435	1,740
18 regional infantry regiments, Nos. 145 to 162, each of 4 battalions	72	288
30 rifle battalions, Nos. 1 to 30, of which 21 are of 6 companies and 9 of 4 companies.....	30	162
2 foreign regiments, each of 5 battalions and 2 dépôt companies	10	44
4 Zouave regiments, each of 4 battalions and 2 dépôt companies	16	72
4 Algerian tirailleur regiments, each of 4 battalions and 1 dépôt company.....	16	68
5 battalions African light infantry, each of 6 companies	5	30
Total	584	2,404

Squadrons.

31 dragoon regiments, each of 5 squadrons	155
21 chassens „ „ „	105
14 hussar „ „ „	70
13 cuirassier „ „ „	65
6 Chasseurs d'Afrique „ „ „	30
4 Spahi regiments, 1 of 6 squadrons and 3 of 5 squadrons	21
Total	446

There are, besides, 8 companies, forming the remount establishment.

Batteries.

19 regiments (divisional artillery), each of 12 field batteries	228
19 regiments (corps artillery), each of 9 field and 3 horse batteries	228
4 field batteries in Algeria and Tunis	4
12 mountain batteries in France	12
8 „ in Algeria and Tunis	8
Total	480

Batteries.

16 foot artillery battalions, each of 6 batteries	96
4 ,, batteries in Algeria and Tunis	4
Total.....	100

3 regiments, each of 5 battalions and 1 train company.

1 " 4 " "
1 " 3 " " (railway regiment).

12 squadrons, each of 4 companies, of which 12 companies are in Algiers and Tunis.

8 squadrons of 3 companies.

Total, 72 companies.

Distribution of Troops on the German Frontier.—As a result of the numerous changes effected during 1893 in the composition of the higher commands, the following was, at the close of that year, the distribution of troops in the 6th region, which comprises the departments of the Meurthe and the Moselle, Vosges, Aube, Ardennes, Marne, and Meuse, and a portion of the departments of the Seine and

Seine and Oise, with the subdivisional districts of Nancy, Toul, Neufchâteau, Verdun, Mézières, Troyes, and Châlons-sur-Marne.

6th Army Corps, Châlons :—

11th Infantry Division, Nancy.
 12th " " Mézières.
 6th Cavalry Brigade, Nancy.
 6th Artillery " Châlons-sur-Marne.
 6th Engineer Battalion, Toul.
 6th Train Squadron, Châlons Camp.

Under the commander of the 6th Corps, though not forming a part of that corps :—

39th Infantry Division, Commercy.
 40th " " St. Mihiel.
 Vosges Division, Remiremont.
 The 2nd Cavalry Division, Lunéville.
 The 4th " " Sedan.
 Of the 3rd Cavalry Division, 2 brigades, Châlons.
 " 5th " " 1 brigade, Reims.
 The 5th Infantry Brigade, detached from the 2nd Corps.
 31 batteries of foot artillery.

Altogether, the troops in the 6th region amount to—

77 infantry battalions.
 13 rifle battalions, 9 of which have each 6 companies.
 110 squadrons.
 37 field batteries.
 11 horse artillery batteries.
 31 foot batteries.
 1 engineer battalion.
 1 train squadron.

Establishment.—Compared with 1893 there is an increase in the numbers fixed for the current year of 264 officers, 434 non-commissioned officers, and 12,361 men to the infantry, and of 135 officers, 106 non-commissioned officers, and 724 men to the cavalry.

Of the 460 field and horse artillery batteries, those belonging to the 6th Army Corps, the 2nd, 3rd, and 4th Cavalry Divisions, and some batteries of the 1st, 7th, 8th, 14th, and 15th Artillery Brigades, have each 6 guns and 3 ammunition wagons horsed; the remaining batteries have 4 guns and 2 ammunition wagons only.

Reserve Troops.—The units enumerated below are organized in peace and attached to the corresponding active formations entrusted with their administration and mobilization :—

145 reserve infantry regiments which have the number, augmented by 200, of the corresponding active regiments.
 30 reserve rifle battalions, one to each existing active rifle battalion.

- Territorial Army.*—The number of formations of the territorial army, rolls of which, like those of the reserve army, are kept up in peace, and which are affiliated to the corresponding active formation, are as follows :—

8 infantry regiments (9 with the 15th Corps).
4 to 8 squadrons of cavalry.
1 regiment of artillery.
1 engineer battalion.
1 train squadron.

10 Zouave battalions.
6 squadrons.
13 batteries.

And of formations composed of customs and forest employés:—

38 battalions.
67 independent companies.
56 " sections and detachments.

War Strength.—The publication “L’Année Militaire et Maritime” estimated the war strength of the French Army of trained soldiers at 4,372,000 men, made up as follows:—

Active Army	{ permanent portion.....	150,000	men.
	{ annual classes, 1888-90....	635,000	
Reserve of the Active Army, 1881-87		1,320,000	"
Territorial Army and its Reserve, 1866-80		2,267,000	"

These numbers may be taken as approximately correct for 1893, though now there are 10 annual classes in the reserve and 6 in the reserve of the territorial army.

Organization.—The Bill referred to in the Annual Reports, 1892, for the constitution of the cadres and the effectives of the active and territorial armies, was passed and published as the law of the 25th July, 1893. In the report of the committee charged with the examination of the Bill the following appears :—"The law is really no 'loi des cadres,' although this designation has been introduced

owing to former legislation; it is a 'loi d'encadrement,' destined to consolidate our reserves and give them consistency.

"Since the reserve of the active army comprises three more annual classes, since the 'régiments mixtes,' which were composed of reservists and men of the territorial army, have been replaced by regiments of more even quality, the effective strength of our troops of the first line has been doubled. But the larger numbers alone do not suffice, they may even be a danger. When bodies of troops of great strength are not adequately furnished with leaders, they are wanting in flexibility and confidence; they represent a crowd of armed men, but not an army.

"The experiences at the manœuvres of 1892 showed that of the three battalions of the 'régiments mixtes' there was one battalion only that gave satisfactory results. This battalion was the one formed from the 'cadre complémentaire' of the line regiment. This superiority resulted solely and alone from the greater serviceableness of the cadres; the soldiers of these battalions were in themselves not superior to those of the other battalions. This incontrovertible fact indicates a defect and a weakness in our organization. We must provide our army in peace-time with a sufficient number of leaders, so as to do away with the difference in the efficiency of the reserve regiment as compared with that of the line without weakening or deteriorating the latter in the process."

The more important provisions of the law in question are the following:—

Article 1.—In regard to the composition of the cadres in the infantry, it is provided that the "cadre complémentaire" of the subdivisional infantry regiments shall be in 72 regiments 1 lieutenant-colonel and 1 battalion commander; in 73 regiments 2 battalion commanders, and in every regiment 8 captains and 4 lieutenants.

A "cadre complémentaire" is instituted for each regiment of Zouaves of 2 battalion commanders, 8 captains, and 6 lieutenants, and for each rifle battalion of 1 captain and 1 lieutenant.

Article 2.—The third lieutenant is done away with in the companies on the higher peace establishment, also the battalion adjutants.

Article 3.—All cavalry regiments are to be of 5 squadrons, with the exception only of the 1st Spahis, which has always 1 squadron in Senegal, and has, therefore, 6 squadrons.

Article 5.—The fortress artillery, at present 16 battalions, retains for the moment its existing strength; but so soon as the necessary men are available two new battalions are to be formed. A captain 2nd class is added to the establishment of each battalion.

Article 6.—The cadres of the field artillery are increased by 1 chef d'escadron and 3 captains, 2nd class, per regiment; 1 captain, 2nd class, per mountain battery, and 2 captains, 2nd class, per regiment of pontonniers.

Article 12.—Besides the formations of the territorial army already existing in each region the following are to be constituted:—

1 regiment of territorial artillery attached to the 19th artillery brigade.

1 train squadron (No. 19) attached to the 19th train squadron.

1 train squadron (No. 20) only to be called into existence on mobilization.

Article 13.—The units of the territorial army are attached to the corresponding units of the active army for administration, training, and mobilization.

New Formations.—Under authority of the law of the 25th July, 1887, the 14th Hussar regiment was formed at Alençon on the 16th October, and the 31st Dragoons at the Châlons camp on the 3rd November.

On the 16th October a new (7th) cavalry division was formed. It consists temporarily of only 5 regiments, distributed as follows:—

Staff of the Division, Meaux (provisionally).

1st Dragoon Brigade, Meaux:—

7th Regiment, Provins.

18th Regiment, Meaux.

13th Cuirassiers (attached).

6th Dragoon Brigade, Dôle:—

2nd Regiment, Auxonne.

19th Regiment, Dôle.

By presidential decree of the 12th December, the creation of two new companies for the 3rd, 5th, 18th, and 19th rifle battalions, stationed at St. Dié, Remiremont, Stenay, and Troyes, was ordered. The number of rifle battalions, therefore, with 6 companies, has risen from 17 to 21.

Marine Artillery.—The portion of this force located in France is to be employed in war to augment the army. It was given a new organization by a decree of the 8th July, and formed into two regiments in France, and a number of batteries in the Colonies, the number and organization of which are left to the Minister of Marine.

The two regiments together have 6 field batteries, 4 mountain batteries, and 13 foot batteries, the total strength of which is 147 officers, 2,742 men, 730 horses and mules. There are besides 5 companies of artificers, 21 officers, and 643 men, and 1 laboratory company, 5 officers and 130 men.

In the Colonies there are 14 batteries and 1 detachment.

The battalions of fortress artillery are in future to be designated battalions of foot artillery.

Recruiting Arrangements.—In 1892 the number of young men included on the lists as having become liable for service was 277,425, which was fewer by 22,882 than in the preceding year. There were also brought forward from previous years,

39,904 from 1890.

20,090 „ 1891.

25,884 were passed over as totally unfit for service, 8,752 did not present themselves.

There had further to be deducted

40,167 postponed.

82 excluded on account of unworthiness.

20,295 allotted to the military auxiliary services, and those who had entered the army as volunteers.

The net number enrolled, including those brought forward from the years 1890 and 1891, was 181,872. The number of these men who could neither read nor write was 19,547, or 7·05 per cent., and the average height 5 feet 4·77 inches, a fraction less than the preceding year.

The number of men who enlisted voluntarily during 1892 was 31,795, including 5,790 in the foreign and Algerian formations. Of those who entered the navy and the formations within France, the term of voluntary engagement was

7,023 for 3 years.

15,602 „ 4 „

3,380 „ 5 „

Mobilization, Superior Staffs.—On the 6th March, 1893, new instructions were issued respecting the composition of the staffs in war. The most important provisions were the following:—

In war with the mobilized army are:

- 1st. The Grand État-Major-Général with a Major-General, some Aide-Majors-Généraux, and the necessary personnel.
- 2nd. In each army an état-major-général with a General as chief, and 15 officers.
- 3rd. In every army corps a staff consisting of a colonel, or a lieutenant-colonel, as chief; 1 lieutenant-colonel or commandant, as second; 1 superior officer, 2 captains of the general staff, 3 officers in possession of the brevet d'état-major, 2 orderly officers, 1 interpreter, 1 archivist, 6 mounted orderlies, 4 non-commissioned officers of infantry as orderlies, 4 cyclists, and 10 clerks.
- 4th. Staff of an infantry division, 1 chief, 2 general staff officers, 1 orderly officer, 1 interpreter, 6 mounted and dismounted orderlies, 4 cyclists, 4 clerks.
- 5th. Staff of a cavalry division, the same as an infantry division, except that there is 1 general staff officer and 1 captain of engineers more, and 1 clerk less.
- 6th. Staff of an infantry brigade, 2 orderly officers, 2 cyclists, and 3 clerks.

The Grand Quartier Général of a group of armies is composed as follows:—

- 1st. The Commander, with his orderly officers and military cabinet to deal with personal matters concerning officers.

2nd. The Great General Staff.

3rd. General directions for railways and lines of communication, with a committee for the utilization of waterways for military purposes.

4th. The officers placed under the major-general (chief of the staff) for the direction of the artillery, the engineers, and of the intendance, the sanitary, telegraph, and postal services.

5th. Internal services connected with headquarters, viz., the intendance, telegraph detachment, the post, the printing establishment, and the gendarmerie.

6th. The civilian personnel attached to headquarters.

7th. The escort: 1 company of infantry, 1 squadron of cavalry, 1 train detachment.

The headquarter establishments of other superior commands are as follows:—

Headquarters of an Army.

1st Group:—

	Officers.	Men.	Horses.	Vehicles.
1. Commander and General Staff ..	16	70	81	19
2. Escort, 1 peloton of cavalry	1	29	33	1
3. Direction of the telegraph service ..	2	4	5	1
4. Printing press	—	4	2	1
5. Gendarmerie	—	10	5	—

2nd Group:—

1. Commander of artillery and staff.
2. " engineers "
3. Intendance with an army intendant and staff.
4. Sanitary service, with a médecin inspecteur and personnel.
5. Veterinary service.
6. Postal service.
7. Service of military justice.
8. Field police and gendarmerie.
9. Escort, 1 peloton of cavalry.
10. Headquarters provisions park.
11. Telegraph section of the 1st line—4 officers, 76 men, 48 horses, 12 vehicles.
12. Train detachment—38 officers and officials, 259 men, 215 horses, 40 vehicles.

3rd Group (Direction of the Lines of Communication):—

1st. Staff of the etappen direction, with a Brigadier-General, sous-chef of the General Staff, and personnel, 7 officers, 26 men, 27 horses, 3 vehicles.

2nd to 9th. The different branches of the etappen direction, in all, including the Staff above, 27 officers, 77 men, 60 horses, and 4 vehicles.

The total strength, therefore, of the headquarters of an army is 84 officers and officials, 449 men, 401 horses, and 60 vehicles..

For an army corps the headquarter establishment is 55 officers

338 men, 287 horses, and 43 vehicles; for an infantry division 20 officers, 111 men, 94 horses, and 10 vehicles.

The duties in the mobilized staffs of army corps and larger bodies are divided into three branches, to each of which certain subjects are allotted, viz.:—

1st branch.—Personnel and matériel, organization, establishments, losses, drafts to maintain strength, ammunition, supply, and general correspondence.

2nd branch.—Intelligence service, political affairs, situation, organization and movements of the enemy's troops, service of interpreters and correspondents, bearers of flags of truce, prisoners of war, regulation of relations with the officers, &c., in occupied territory.

3rd branch.—Operations, marches, parole and countersign, diary of operations.

It is worthy of attention that it is officially laid down that when marching a General Staff officer is always to be at the point initiate, that is, at the place where the troops join the column of march. One officer of the Staff is detailed to have charge of the internal service of the headquarters, to whom the commander of the escort is permanently attached.

The headquarters of an infantry brigade is composed of 3 officers, 12 men, 10 horses, and 1 vehicle; that of a cavalry brigade of 3 officers, 10 men, 12 horses, and 2 vehicles.

In peace the duties of the Staff are grouped in two sections.

In the 1st (active section) are:—

General correspondence.
Training and manœuvres.
Personal questions.
Military justice and administration.

In the 2nd (territorial section):—

Organization.
Mobilization.
Recruiting.
Reserve and Territorial Army.
Territorial affairs.
Establishments and fortifications.

Detailed instructions are given respecting the composition and subdivision of orders; those for example relating to marches must contain:—

- 1st. General situation and information regarding the enemy.
- 2nd. Dispositions respecting own measures.
- 3rd. Employment of the cavalry.
- 4th. General arrangements for the march.
- 5th. Measures of security and communication with neighbouring columns.
- 6th. Place of headquarters in the column.

The foregoing particulars form the first part of the order, which must be imparted to commanders as early as practicable directly, it has been drafted.

The second portion of the order: directions concerning cantonments, outposts, movement of the train, supply, employment of telegraphs, sanitary and postal services can be issued later, separate from the other part.

Preparations for Mobilization in the Infantry.—By Article 13 of the law of the 28th July, 1893, the administration and the preparation of the mobilization states of the territorial infantry regiments are vested in the corresponding active regiments. Further details are given in a decree from the War Ministry, dated the 11th November. The duties with which the captain-major of the territorial regiment has been entrusted hitherto are transferred to the active infantry regiment, which acquaints the commander of the territorial regiment with all measures taken and with the distribution of the officers. The mobilization of the territorial regiment is effected with the active regiment. The "conseil d'administration" of the active regiment acts equally for the territorial regiment. If the latter is called up for exercise or is mobilized, 1 lieutenant and 2 or 3 clerks are to be detached from the territorial regiment to the clothing officer and to the paymaster. Similar arrangements are made for rifle battalions, with which the formation of territorial rifle battalions takes place.

The administration and mobilization of the artillery and train formations have also been entrusted, since the 1st January, 1894, to the active portions of these arms.

In each region the preparations for the mobilization of the territorial artillery regiment are made by the artillery staff of the local army corps, for which purpose an active captain of the 2nd Class, with the necessary clerical staff, are attached to it.

Company Ammunition Wagons.—The supply to every company of an ammunition wagon carrying 65 rounds per man and intrenching tools has now been completed. The battalion ammunition wagons and the pack mules for carrying the tools have been done away with.

Gun Ammunition.—All field and horse artillery batteries carry shrapnel as a uniform projectile and a few rounds of case, viz. :—

The 80 mm. horse artillery batteries with the corps artillery, 912 shrapnel, 24 case.

The 80 mm. horse artillery with cavalry divisions, 828 shrapnel, 24 case.

The 90 mm. batteries with ammunition wagons, M 1840, 846 shrapnel, 24 case.

The 90 mm. batteries with ammunition wagons, M 1880, 825 shrapnel, 21 case.

The 80 mm. mountain batteries, 773 shrapnel, 67 case.

Including the supply in the ammunition and park sections.

The 80 mm. batteries have 1,834 rounds, or 305.6 per gun.

" 90 " " " 1,531 " 255.1 "

Regulations for the Sanitary Services in the Field.—New regulations were issued in July, 1893; they comprise 7 sections, containing 124 paragraphs.

1st Section.—General Instructions.

- 1st chapter. Organization of the sanitary services in the field.
- 2nd " Conduct of the sanitary services and official relations of these to the commanders.
- 3rd chapter. Working and organization of the sanitary service with bodies of troops and the sanitary formations to be created in the event of war.

2nd Section.—Advanced Service.

- 1st chapter. Duties and organization.
- 2nd " Directions regarding the sanitary service with regiments, &c., on the march, when halted, and in action.
- 3rd chapter. The same with the ambulances.
- 4th " " " field hospitals.

3rd Section.—Service in Rear.

- 1st chapter. Duties and organization.
- 2nd " Directions for the service of temporarily stationary field hospitals.
- 3rd chapter. Sanitary establishment in occupied territory.
- 4th " Directions for the service of evacuation hospitals.
- 5th " The same for railway station hospitals and sick rooms.
- 6th chapter. The same on the lines of communication.
- 7th " Organization of convalescent dépôts.
- 8th " Sick transport by land, water, and rail.
- 9th " Distribution of the sick and wounded in the interior.

4th Section.—Sanitary Material.

- 1st chapter. Constitution and completion.
- 2nd " Administration and preservation.
- 3rd " Keeping of accounts, &c.

5th Section.—Sanitary Services in Fortress Warfare.

- 1st chapter. In the attack of a fortress.
- 2nd " In a besieged fortress.

6th Section.—Voluntary Care of Sick.

Organization and sphere of operations of the Société d'Assistance aux Blessés et Malades Militaires.

7th Section.—Sanitary Services in the Interior during a Campaign.

The following shows the several sanitary establishments with each army corps :—

	Medical officers.	Administrative officer.	Hospital attendants.	Sick bearers.
1 direction of the sanitary services	2	1	3	—
2 directions with the 2 infantry divisions, each having.....	1	—	1	—
1 headquarter ambulance as reserve, and for army corps troops.....	6	—	30	93
2 divisional ambulances.....	6	—	30	93
1 cavalry brigade ambulance....	2	—	16	—
8 field hospitals, each with	4	—	36	—
There are further—				
With each infantry regiment ...	1	—	—	—
" " battalion ...	2	—	—	1 corporal
" cavalry regiment	2	—	4	—
" infantry company....	—	—	1	4
" field artillery group..	2	—	1	—
" field battery	—	—	—	4

The whole of the personnel for field hospitals Nos. 5 to 8 is found by the Reserve and Territorial Army. The ambulances form part of the fighting train.

Reservists called up for Training.—The men "en disponibilité" of the 1889 yearly class were out for four weeks, from the 21st August.

The Reservists of the 1883 and 1887 classes belonging to the regional infantry regiments of the rifle battalions in the sphere of the 14th and 15th Army Corps, and of the tirailleur regiments for four weeks, from the 21st August.

The Reservists of the 4th, 5th, and 6th battalions and of the section "hors rang" of the Reserve infantry regiments, of the Reserve rifle battalions, of the 4th, 5th, and 6th dépôt companies of the subdivisional regiments, and of the 2nd dépôt company of the active rifle battalions (with the exception of the battalions in the sphere of the 14th and 15th Army Corps) of the 1883 and 1887 classes.

The Reservists of the Active and Reserve cavalry regiments of the above classes in four series of four weeks each at different times.

The Reservists of the same classes belonging to the artillery, pontonniers, and train for four weeks at different times. Also those of the Engineers for a similar period from the 21st August.

The whole number provided for in the Estimates was 5,603 officers and 346,625 men, viz.:—

	Officers.	Men.
Infantry	4,370	232,272
Administrative troops.....	—	20,753
Cavalry.....	375	15,092
Artillery.....	600	54,295
Engineers.....	158	6,959
Train.....	100	17,254

Total 5,603

346,625

General Staff Tours and Cadre Exercises.—In 1893 there were General staff tours in nine Army Corps. By an instruction of the 17th March, cadre exercises were ordered for the whole of the infantry divisions, and it was left to the discretion of the General officers commanding them to have similar exercises by brigades. They are carried out under the superintendence of the division or brigade commander, and the following officers take part in them:—In the divisional exercises the commander of each brigade with his orderly officer, 3 field officers from each infantry regiment, 1 field officer of cavalry, the commander of the divisional artillery, 1 other artillery officer, and a captain belonging to the engineers; in the brigade exercises 3 field officers and 3 captains from each infantry regiment, and 1 field officer or captain from the cavalry and the artillery.

In nine army corps districts, also, cadre exercises of a reserve division or brigade were held. Similar exercises were held by the 1st, 3rd, and 4th cavalry divisions and the 6th Dragoon Brigade.

The duration of the divisional exercises was 5 days; of the brigade ones 4, not including the time of marching to and fro.

GREECE.

Peace Organization.—The armed forces are distributed in three General commands, the headquarters of which are at Larissa, Missolonghi, and Athens respectively.

The 1st command comprises 3 regiments of infantry, 10 battalions (including 4 light battalions) of 40 companies, 1 cavalry regiment of 4 squadrons, and 1 field artillery regiment with 4 field batteries, and 3 mountain batteries.

The 2nd command includes 3 regiments, 8 battalions (including 2 light battalions) of 32 companies, 1 regiment of cavalry of 4 squadrons, and 1 field artillery regiment with 3 field and 3 mountain batteries.

The 3rd command has 4 infantry regiments, 10 battalions (including 2 light battalions) of 40 companies, 1 cavalry regiment of 4 squadrons, 1 field artillery regiment with 4 field and 3 mountain batteries, 1 engineer regiment of 2 battalions of 8 companies, and a telegraph company.

There is, further, a train company distributed amongst the 8 supply depôts, and a sanitary company divided amongst the 8 hospitals. There are also 16 gendarmerie detachments, 3 in the 1st district, 6 in the 2nd, and 7 in the 3rd, the men for which are taken from the line troops and borne on their strength.

The following is the peace establishment of the several arms, not including the higher commands, officials, institutions, &c.:—

Arm.	Officers.	Other ranks.	Horses and mules.	Horsed guns.
Infantry	857	15,182	202	—
Cavalry	93	1,053	739	—
Artillery	222	2,056	862	120
Engineers	101	1,112	72	(and 66 am- munition
Train and sanitary.	206	295	30	wagons)
Gendarmerie	143	3,086	333	
Total	1,622	22,784	2,288	120 (66 am- munition wagons)

During 1893 these establishments were never complete; the strength varied generally from 16,000 to 18,000 men. In the late summer and autumn the calling up of men on long furlough to suppress brigandage on the Turkish frontier raised the strength to about 22,000 of all ranks.

On mobilization for war the General commands are converted into army corps, each of which has the following constitution:—Infantry, 2 brigades of 5 regiments, 18 battalions (including 3 light battalions), 72 companies; cavalry, 1 regiment of 5 squadrons; artillery, 2 regiments of 7 field and 3 mountain batteries; engineers, 1 battalion of 4 companies, 1 telegraph company, 1 train battalion, and 1 sanitary company.

Thus there would be 3 army corps having 6 infantry brigades of 9 battalions each, 3 cavalry regiments, 6 artillery regiments, 3 engineer battalions, 3 telegraph companies, 3 train battalions, and 3 sanitary companies.

Of these units, however, the following have to be formed on mobilization:—15 infantry and 1 light battalion, 3 squadrons, 1 engineer battalion, 2 telegraph companies, 2 battalions, and 3 companies of train, and 3 sanitary companies.

The war strength of the several arms would be in round numbers as follows:—

Infantry....	54,000 men,	
Cavalry	2,250	"
Artillery....	4,000	" 180 guns, 126 ammunition wagons.
Engineers ..	3,000	"
Train, &c...	3,000	"
Total	66,250	"

or about 3 per cent. of the population.

Under the most favourable conditions the above numbers could only be attained in the course of from 8 to 10 weeks. But there can be no confidence that they would be forthcoming, even after this lapse of time, for the defects in the machinery for mobilization which

were so obvious in 1885-86, when the Greek army was last mobilized, have never been remedied. On that occasion it was estimated that of those recalled to the colours no less than 23,000 men failed to put in an appearance.

So long as this state of things is possible, no great dependence can be placed on the results of a future mobilization. The training of the troops leaves much to be desired.

GREAT BRITAIN.

Mobilization.—The 1892 instructions for mobilization have during the past year been so extended that it is now possible to obtain a complete picture of the mobilization; that the Militia and Volunteers, as well as the Yeomanry, have been given a distinct place in the defence of the country may be regarded as a special mark of progress.

In regard to mobilization a distinction has to be made between
1st, general mobilization for war abroad;
2nd, general mobilization for home defence;
3rd, partial mobilization for war abroad.

General Mobilization for War Abroad.—Having regard to the probable theatres of war, preparations cannot be made beforehand in every particular. In the event of imminent national danger, and in case of necessity, the reserve can be employed for the reinforcement of the field army, otherwise the troops remaining immobilized, the depôts have to provide for keeping the force before the enemy completed. The decision respecting the calling out of the reserves rests with the Cabinet, after communication to Parliament, if sitting, or if not sitting then by other notification. The officers charged with the inspection of the reservists have to take care, in concert with the local and parish authorities, that the order calling out the reserves is conspicuously posted at all public places, churches, town halls, and post offices. The reservists go to their depôts, where they are medically examined and clothed; they are then either forwarded to their corps or retained at the depôt. They receive their arms and equipment at their corps.

The Militia reserve is also available for the reinforcement of the army.

The second field equipment is stored at selected places in connection with the defence of the country. Tents carried in wagons are only employed in campaigns out of the United Kingdom.

Completion of Horses.—The requirement in riding and draught horses is 29,712, and 5,300 more are necessary for the line of communications service.

There are in England 14,757 service horses. Deducting these and 3,000 officers' horses from the 29,712, there remain about 13,000 new horses to be provided. These would be furnished from the reserve of horses numbering 14,000, which are inspected each year; the owners for an annual fee of 10s. per horse undertake to deliver it fit on

mobilization within 48 hours at an agreed price, or to pay a fine of 50*l*.

Of the 14,000 horses 3,500 are for riding purposes. Reception committees are provided for at 50 places to take over the horses; so that within 11 or 12 days from the notification of mobilization the horses can be in the hands of the troops.

Strength of the Material available.—Strength, 54 battalions, 11 cavalry regiments, 6 horse artillery, and 26 field batteries, 11 companies of engineers, 33 train companies.

There are required for the field army:—

	Infantry.	Cavalry.	Artillery.	Engineers.
	53,767	6,275	8,865	3,382
There are available:—				
Standing army in England	67,066	12,602	8,400	4,851
Army Reserve	55,907	5,396	5,000	1,876
Militia Reserve	24,780	—	2,000	426
Total men	147,753	17,998	15,400	7,153

On the 1st January, 1893, there were in Great Britain 71 battalions, 20½ cavalry regiments, 11 horse artillery, and 42 field batteries, 41 engineer companies, and 40 train companies.

2nd. Mobilization for Home Defence.—In the elaboration of the mobilization scheme, the formation of the following groups is kept in view:—

- (a.) Garrison and fortress troops (Militia and Volunteers with a few line troops).
- (b.) The field army (3 army corps, 22 Volunteer field brigades, and 4 cavalry brigades).
- (c.) Unallotted units.
- (d.) Depôt troops.

Garrison and Fortress Troops.—In February instructions were issued regulating the distribution of these at home in detail to each fortress, harbour, and port the active defence of which is contemplated. The scheme provides for the employment in this service of the following:—

Regulars.—10 battalions, 31 companies of garrison artillery, 4 fortress companies, and 10 detachments of submarine miners (Royal Engineers).

Militia.—77 battalions, 194 companies garrison artillery, 21 fortress companies, and 15 detachments submarine miners (Royal Engineers).

Honourable Artillery Company.—4 companies.

Yeomanry.—17 squadrons.

Volunteers.—93 battalions, 13 batteries of position, 206 companies of garrison artillery, 67 fortress companies, and 19 detachments submarine miners (Royal Engineers).

Field Army.—The composition of the main portion of this force

was given in the *précis* of von Lübell's Reports for 1892 (p. 17). Notification has since been made of arrangements for the employment of 22 field brigades of Volunteers as a portion of the field army.

The composition of the several groups into which these brigades are combined, and the places of concentration of the groups, are as follows:—

- 2 brigades with 11 battalions, 4 60-pr., and 4 40-pr. batteries of position (32 guns) at Guildford.
- 3 brigades with 21 battalions, 3 60-pr., and 5 40-pr. batteries (32 guns) at Boxhill.
- 5 brigades with 35 battalions, 11 60-pr., and 10 40-pr. batteries (84 guns) at Caterham.
- 4 brigades with 32 battalions, 11 60-pr., and 5 40-pr. batteries (64 guns) at Halstead.
- 2 brigades with 12 battalions, 4 60-pr., and 4 40-pr. batteries (32 guns) at Tilbury.
- 4 brigades with 22 battalions, 4 60-pr., and 2 40-pr. batteries (24 guns) at Brentwood.
- 2 brigades with 13 battalions, 12 20-pr. batteries (48 guns) at Epping.

Thus provision is now made for the assembly around London of 3 army corps with 4 cavalry brigades and 22 field brigades of volunteers, together 55 line, 24 Militia, and 134 Volunteer battalions, 60 squadrons, 264 field guns, and 316 guns of position. The Yeomanry is formed into 16 field brigades of from 4 to 9 squadrons each, and allotted as divisional cavalry to the 9 infantry divisions. The Volunteer field brigades are not provided with cavalry or auxiliary service.

Unallotted Units.

Regulars, 10 battalions, 6 cavalry regiments, and 2 field batteries.
Militia, 31 battalions.

Volunteers, 5 battalions, 82 companies of garrison artillery, and 24 engineer companies.

A portion of the regular battalions may perhaps be destined to reinforce the Mediterranean garrisons.

Depôt Troops.—On mobilization, the infantry depôts would be expanded into 8 company battalions by means of reserve men and recruits; with this in view, there are kept at each depôt 500 rifles with sets of accoutrements. The cavalry at home have no depôts in peace-time; on mobilization a depôt would be formed by each regiment where it was stationed, at which, in the first instance, unserviceable men and horses would be left.

3. *Partial Mobilization for War Abroad.*—For the purposes of a minor war a portion of the army only, to be termed the field force, would be placed on a war footing. Its strength is calculated to be a division; but this need not prevent a smaller force being formed in case of necessity. If a larger force be required, the troops to be mobi-

lized would be the 1st Army Corps, a cavalry division, bridging troop, 1 field company Royal Engineers, staff, and half telegraph battalion, 1 field post detachment, and 1 balloon section. The normal field force has the following composition:—1 infantry division with a cavalry regiment, 1 cavalry brigade (12 squadrons), Royal Engineer staff, mounted detachment, bridging troop, 1 field company, $\frac{1}{2}$ telegraph battalion, 1 field park, 1 balloon section, 2 horse artillery batteries, 1 cavalry division ammunition column, 2 sections of the ammunition park, 1 battalion of mounted infantry with machine-gun detachment; 2 signalling companies (1 mounted, 1 foot), $2\frac{1}{2}$ train companies, 2 field bakery companies, 2 field hospitals, staff for base and line of communications, 1 infantry battalion, 1 war hospital, 1 base hospital, 2 companies ordnance store department, horse depôt, and 2 railway companies. Total establishment, 754 officers, 19,045 other ranks, 8,743 horses (eventually 6,000 in horse depôt), 30 guns, 10 machine-guns, 1,044 vehicles.

The personal equipment of the men and the first field equipment are kept at Aldershot, the second field equipment at Southampton, where the troops would embark.

ITALY.

The army is distributed territorially in 12 army corps, of which one is allotted to Sicily. In war these army corps are uniformly composed of 2 infantry divisions (each of 2 brigades), 9 battalions (including 1 rifle battalion), 1 regiment of cavalry of 6 squadrons, 2 regiments of field artillery, 16 batteries of 6 guns, 2 engineer companies, and auxiliary services.

The Alpine troops, a part of the cavalry regiments, the mountain and fortress artillery, and the rest of the engineer regiments are outside the army corps organization. Cavalry divisions are formed of 2 brigades: 4 regiments, 24 squadrons, and 2 horse artillery batteries.

The mobile Militia forms 12 divisions of similar strength to those of the regular army; also various Alpine and engineer formations.

The territorial Militia forms 320 infantry and 22 Alpine battalions (75 companies), 100 fortress artillery, and 30 engineer companies.

Peace Strength.—Standing army: 14,397 officers, 511,788 of other ranks, and 1,242 horsed guns.

Mobile Militia: 5,298 officers, 207,630 other ranks, and 366 guns.

Special Sardinian Militia: 301 officers, 11,620 other ranks, and 12 guns.

Territorial Militia: 8,161 officers, 379,782 other ranks.

Of the foregoing categories the standing army and the mobile Militia are counted as field troops.

The number of men in the lists of those on prolonged furlough from the standing army and the mobile Militia has increased from 791,184 men on the 1st July, 1890, to 1,006,085 men on the 1st July, 1891. This rapid increase is the result of the law of 1891, and of an increased contingent of recruits during the last few years. The total

strength of the armed forces available on the 1st July, 1892, is officially stated to have been as follows :—

1st. Standing Army :—		
With the colours	229,511	
On furlough	594,442	
		823,953
2nd. Mobile Militia and Sardinian Militia :—		
Mobile Militia	504,396	
Sardinian Militia	20,772	
		525,168
3rd. Territorial Militia.....	1,640,322	
Together.....	2,989,443 men	

Mobilization.—The so-called “mixed mobilization system” has been now extended to the cavalry and the engineers, so that only the Grenadiers, the Alpine troops, the horse artillery, and mountain artillery are excepted from it. The Alpine troops and mountain artillery recruit regionally, that is, from fixed connected districts situated close together, and they are completed on mobilization from these. The Grenadiers and horse artillery are recruited and completed nationally, that is, from different districts of the whole kingdom. The other troops recruit nationally, but are completed regionally. They do not, therefore, receive back in principle the men trained by them. So as to carry out this system, separate completing districts are formed in the immediate neighbourhood of the garrisons of the cavalry, artillery, and engineers. These must necessarily occupy a considerable area, and a double method of enrolment has been adopted. Those reservists who reside in the immediate vicinity of the garrison report themselves direct to the units concerned; those in the more distant districts to the commanders of the district. The men of the infantry and bersaglieri are enrolled entirely at the headquarters of districts, and are forwarded from these to the regiments.

The whole of the units are in peace-time in possession of nominal rolls of the men to come to them, so that they are able to allot them beforehand to companies. The whole of the units leave depôts behind them. General Pelloux, the late War Minister, claimed that by the adaptation of the mixed system of mobilization its completion has been hastened by six days, and that it is as rapid in its operation as a completely territorial system.

The carbineers are mobilized and employed partly as military police and partly for the transmission of despatches, &c. As regards the Alpine troops, the mobilization both of the mobile and territorial Militia is entirely in the hands of regiments. The active companies have to be ready to march within a very few hours of receipt of the order to mobilize.

The cavalry has to receive both men and horses; but the regiment must be ready to march 24 hours after receiving the order to mobi-

lize. On the arrival of the men to complete, a reserve squadron is formed in each regiment.

In the artillery, single divisions or batteries march with their actual strength on receipt of the mobilization order, and receive their increment later. The mountain artillery looks after its entire mobilization itself. The field and mountain artillery can be ordered to provide for reserve formations, men of the 1st category to be employed as gunners, &c., and those of the 2nd category as train soldiers and mule drivers. The material for these formations is already in their possession. The mountain artillery may further be charged with the formation of special park animal depôts and siege parks.

Sanitary and supply companies are mobilized with the assistance of the district command. There is no separate train as a special formation, for the necessary units form part of the artillery and engineers.

Material for the Mobilized Army.—Clothing is available for all those men who would be required to take their places in the ranks on mobilization. Those liable for service in excess of that number would be clothed subsequently.

Of small arms there were available on the 23rd November, 1893, 1,625,000 converted Vetterli with new ammunition. Of the new rifle (6.5 mm., M/91) there were 50,000 issued to the Alpine troops, and 25,000 more ready for issue. For those issued the whole of the ammunition was in possession of the troops. Irrespective of any reserve supply, the number still required to complete the rearmament is 476,078. Of the cavalry carbine (M/91) 4,000 were ready; 19,754 more are required. The 9-cm. field guns and the mountain guns are practically new.

During the last three years the material of the fortress and coast artillery has been increased by more than 250 guns, amongst them some of the heaviest calibre and the latest construction. Ammunition for all the guns is available in the proportion laid down by regulation. Smokeless powder is being introduced for fortress guns of medium calibre; the muzzle-loading guns still mounted are being withdrawn and replaced by breech-loading guns; auxiliary apparatus, such as range-finders, &c., is plentifully supplied.

THE NETHERLANDS.

Organization.—In the course of the year proposals were made for regulating liability to service, and for service in the Militia and Schüttereï. The principle of universal obligation underlies the scheme and replacement is consequently excluded. Every man on attaining 20 years of age is made liable for service either in the Militia or in the Schüttereï, with certain specified exceptions. Those becoming liable are divided into two categories, of which the first forms the Militia, the second the Schüttereï. Each year 11,500 men (of whom not more than 675 may be taken for the navy) are called up for the Militia. The terms of service are 6 years with the army,

1 year with the dépôt reserve (the 7th), and 2 years with the Ersatz reserve (the 8th and 9th). The period of training (active service) is one year for foot soldiers, 18 months for those of the mounted branches. The militiamen can be called out for drill at most three times during the first six years of their service, and altogether for periods not exceeding 75 days.

In the Schüttereî the period of service is 6 years, and 3 years in its reserve. The men are to be trained, as far as possible, at their own places of residence. Where this is not practicable, they would be called up for instruction either with a body of troops or at a special drill dépôt. Besides this instruction, which comprises 120 drills of at most 2 hours' duration, or a period of 8 weeks if attached to a body of troops, the men can be called up twice subsequently for drill.

Institution of Reserve Cadres.—To supply the want of cadres for war formations, especially for the Schüttereî, better than it was found possible to do from the Militia, the formation of reserve cadres for infantry and artillery has been authorized, from volunteers for such employment. These must be between 17 and 24 years of age, unmarried, and physically fit for service; they have to pass a literary examination, and are tested in handling arms. They have to serve 6 years and attend yearly certain drills until they become reserve officers.

NORWAY.

The armed forces are divided between three levies:—the line, the landwehr, and the landsturm. Each of these levies is composed similarly as regards arms and branches of the Service; the following is their composition:—

Infantry: 5 brigades of 4 corps, consisting each of 1 line, 1 landwehr, and 1 landsturm battalion, commanded by a colonel or lieutenant-colonel and 1 major. Each battalion has 4 companies. There are, further, 2 guard companies.

Cavalry: 3 corps, 2 of which have 3 squadrons and 1 two squadrons. There is also a squadron of orderlies.

Field artillery: 3 corps, each of 1 line, 1 landwehr, and 1 landsturm battalion, each of 3 batteries of 6 guns, and 1 artillery park company.

Fortress and mountain artillery: 1 corps in each levy of 1 battalion of 2 fortress companies, and 2 mountain batteries, each of 6 guns.

Engineers: 1 battalion of 4 companies in each levy, viz., 1 sapper, 1 pontoon, 1 telegraph, and 1 engineer-park company.

Train: 3 companies, which comprise all the annual classes.

Sanitary service: 3 corps, each of 1 line, 1 landwehr, and 1 landsturm company. Each company has the personnel for 5 ambulances and 1 sanitary detachment.

In peace the total strength of the army is about 12,000 men; in war it should be about 180,000 men and 800 officers.

AUSTRIA-HUNGARY.

The distribution of the forces in peace-time is in 15 territorial army corps, the military command of Zara in Dalmatia consisting of 2 infantry brigades and a regiment of fortress artillery, 9 landwehr commands of 1 infantry brigade of 3 regiments (that of Przemyśl 2 only, of 9 to 12 battalions) and 1 regiment of cavalry (excepting those at Gratz and Prague), the land-defence commands at Innsbrück of 1 brigade of 4 regiments (13 battalions) and $1\frac{1}{2}$ regiments of cavalry, and 7 Honved district commands, each of 2 brigades of 4 regiments (12 to 14 battalions), 3 of them, viz., Buda-Pesth, Szegedin, and Stuhlweissenburg, with a cavalry brigade of from 3 to 4 regiments.

Composition and Strength of the Mobilized Forces.—The 15 army corps comprise 31 infantry divisions, for the 2nd Corps at Vienna has 3 and the rest of the corps have 2. These form the 1st line troops, and to them have to be added 17 infantry divisions, formed 1 each in the several landwehr and Honved districts as 2nd line troops.

Of cavalry there are 18 brigades of the regular army, each of from 2 to 3 regiments, 3 of the Austrian landwehr of 2 to 3 regiments, and 3 of the Hungarian landwehr of 3 to 4 hussar regiments each; in all, 24 brigades. Of these, 16 are formed in 8 cavalry divisions, each of 2 brigades.

The artillery is formed in 14 brigades, comprising together 1,892 guns, of which 1,680 field, 92 horse artillery guns of 9 cm., and 120 mountain guns of 7 cm., calibre.

The landsturm formations constitute the 3rd line. The whole of these are mobilized, viz., 430 battalions and 30 squadrons. Of these battalions, 92 in Austria and 94 in Hungary are constituted as marching battalions; the remainder provide for the duties in the interior. Of the Austrian landsturm marching battalions, 72 are formed in 9 brigades, 20 are employed as staff and line of communication troops. In Hungary, 64 of the battalions are similarly formed in 8 brigades. The 30 squadrons are all Hungarian hussars, and are formed into divisions; eventually there will be also Austrian mounted landsturm formations.

The war strength of the 1st and 2nd lines, that is exclusive of the landsturm formation, is the following:—

	Officers and men.	Service horses.
Infantry and rifles.....	985,040	23,280
Cavalry.....	87,510	83,820
Field and mountain artillery.....	81,110 ¹	66,980
Technical troops, including pioneers, railway, and telegraph troops, and fortress artillery.....	53,000	2,900
Train and auxiliary services and establishments.....	89,710	56,590
Superior staffs, officials, and ad- ministration.....	19,000	—
Together.....	1,315,370	233,570

Organization. Austrian Landwehr.—In prosecution of the measures previously taken, especially in Hungary, in the endeavour to draw the landwehr into the 1st line and make the landwehr troops into field troops, the Austrian Government have increased the stringency of the landwehr law. That of December, 1893, provides in Article I that all those men who join the landwehr direct are to serve for two years with the colours. This was already the rule in the Hungarian landwehr, but in Austria the period of service was for one year only. Further, in order to ensure the presence with the landwehr of experienced non-commissioned officers, these have to serve for three years with the colours. To make up to them for this increased requirement they are subsequently granted certain advantages, the principal ones being that they are transferred to the landsturm after the first 10 years of their obligation to serve has been completed, and that they are released from the landsturm at 40 years of age instead of at 42.

Field Artillery.—Towards the end of 1893 preparations were made to carry out the reorganization of the field artillery, with a view to a considerable strengthening of this arm, and especially of the divisional artillery. After it has been completed there will be 14 corps artillery regiments, 42 divisional artillery regiments, and 1 mountain battery division. In the 56 regiments there will be 1,792 field guns, 96 horse artillery guns, 120 mountain guns, and 16 narrow-gauge guns; 60 Ersatz batteries will also be formed.

The corps artillery regiments are to be numbered as before from 1 to 14, and bear the name of the officer at the head of the regiment; the divisional artillery regiments the numbers from 1 to 42 without name. In every army corps (with the exception of the 15th) the corps artillery regiment bearing the same number and 3 divisional artillery regiments, which in principle are quartered at the stations of the infantry (or Landwehr) divisions to which they belong, form an artillery brigade bearing the number of the army corps.

The corps artillery regiments are composed in peace of the regimental staff, 4 batteries (numbered from 1 to 4), the ammunition park

¹ These were the numbers previously to the new organization of the field artillery, which was only carried out after the close of 1893.

cadre, and the ersatz dépôt cadre. The 1st and 2nd regiments, the 4th to the 7th, the 10th and the 11th have each a horse artillery battery division with the number of the regiment, and each of the regiments with the exception of the 3rd, 4th, and 5th has a mountain battery with mountain equipment which has the number 1.

The 42 divisional artillery regiments are constituted in peace like the corps regiments.

The mountain battery division, with 3 batteries with mixed equipment and the ersatz dépôt cadre in peace, 6 mountain and 4 narrow-gauge 9-cm. batteries and the ersatz dépôt, have remained unchanged.

Ammunition Parks and Columns.—In war, the ammunition park cadre of each corps artillery regiment forms the corps ammunition park, and a detachment for the reserve ammunition column of the army park, the 8 regiments with horse artillery battery divisions form a cavalry ammunition column; they have the numbers of the corps regiment. The ersatz dépôt cadre forms then the ersatz dépôt of the regiment, the command of the ersatz dépôt of the artillery brigade, and with regiments that have mountain batteries, each forms, as required, a second mountain battery having the number 2. The divisional park cadre of the divisional artillery regiment forms, in war alone, the divisional ammunition park with the number of the regiment and the ersatz dépôt of the regiment.

It is deserving of notice that in order that on service the ammunition supply of the field batteries may be effected by simply changing the wagons, it has been ordered that the 9-cm. battery ammunition wagons of all ammunition columns are in future to have 6 horses instead of 4. The war establishment of the artillery ammunition columns and of the divisional and corps ammunition dépôts will consequently each be increased by 4 drivers and 8 draught horses.

Supply.—Under the new regulations for the military supply establishments, the monarchy is divided into 50 supply districts.

PORTUGAL.

The country is divided into 4 military divisions—Lisbon, Vizeu, Oporto, and Erora. The following table shows the composition and peace strength of the forces:—

Arm of the Service.	Officers.	Men.	Horses.
Superior staffs.....	378	—	203
Infantry—			
24 infantry regiments, 12 rifle regiments (each of 2 battalions), 36 battalion cadres.....	1,107	16,793	138
Cavalry—			
2 lancer regiments, 8 chasseur regiments (each of 3 squadrons), and 1 cadre squadron.....	275	3,952	2,289
Field artillery—			
3 regiments, each of 10 batteries (6 guns), and 2 cadre batteries (4 guns), 1 mountain artillery brigade of 2 batteries (8 guns), and 4 cadre batteries.....	154	1,860	1,084
Fortress artillery.....	76	1,599	6
Engineers—			
1 regiment of 2 battalions, 1 cadre battalion, 1 torpedo company.....	39	710	78
Total.....	2,029	24,919	3,888

Not including 28 medical officers and 13 chaplains attached to the superior staffs.

The peace strength was fixed for all services at 30,000 men. 13,917 recruits were enrolled, of whom 12,000 were allotted to the army proper, 417 to the navy, 500 to the municipal guard, and 1,000 for the customs guard.

On mobilization, the whole of the 108 infantry battalions are brought up to a strength of 16 officers and 888 men, each cavalry squadron to 3 officers and 79 men, each field battery to 8 officers and 169 men, the mountain batteries to 7 officers and 193 men, the fortress artillery companies to 4 officers and 86 men, and the engineer companies to 5 officers and 150 men. The field batteries have each 6 guns, the mountain batteries 8. The war strength, therefore, of the army should be, in round numbers, 4,000 officers and 150,000 men, with about 23,000 horses, mules, &c., and 264 guns. Looking, however, to the short period of time the new law has been in force, &c., probably the number of trained men available at the present moment is hardly 100,000.

Colonial Troops.—The colonial army consists of 1 regiment of infantry of 4 battalions, strength 50 officers and 1,143 men (exclusively Europeans), 8 rifle battalions for Africa, 2 rifle companies for Timor, &c. (for the most part natives), 488 officers, 7,797 men. The total strength of the colonial troops is consequently 538 officers and 8,940 men.

Training.—Financial difficulties prevent the assembly for manœuvres of any considerable body of troops; but arrangements were made for the exercising of small mixed bodies of troops at Lisbon, Oporto, and Tancos.

The Lisbon garrison formed 1 brigade, consisting of 2 regiments of infantry of 2 battalions, 2 squadrons of cavalry, 2 batteries of 6 guns,

2 subdivisions of sappers, and 1 telegraph section; also a marked brigade composed of 4 subdivisions of infantry (representing each a battalion), 2 subdivisions of cavalry (each representing a squadron), and 2 guns (each representing a battery).

The garrison of Oporto consisted of 1 infantry regiment of 2 battalions, 1 squadron, and 1 battery of 6 guns.

The mixed force at Tancos was formed specially for the purposes of these exercises, and consisted of 1 infantry regiment of 2 battalions, 1 squadron, 1 battery of 6 guns, and 1 pontoon company.

In order to improve the marching powers of the troops it has been ordered that, during peace, changes of station are to be always carried out by march route unless the movement is one of urgency, such as when troops are required to be sent to a place on account of disturbances, &c.

RUSSIA.

The following tables give the composition and approximate strength in peace and war respectively of the army in Europe and in the Caucasus:—

Peace.

Units.	Men.	Horses.	Guns.	Wagons.
Infantry, calculated on an average strength of 500 men per battalion:—				
193 regiments of 4 battalions	362,840	4,825	—	16,598
68 rifle battalions	34,000	600	—	1,628
9 reserve brigades of 8 battalions	40,000	400	—	Not known.
15 reserve brigades of 4 battalions	32,000	300	—	—
Cavalry—				
545 squadrons and sotnias	90,000	87,750	—	4,095
Artillery—				
324 field batteries of from 4 to 8 guns...	70,000	20,000	1,944	—
44 horse artillery batteries of 6 guns ..	7,600	8,200	264	2,592
39 reserve batteries of 4 guns	7,800	2,166	156	434
Technical troops—				
31 battalions (besides parks)	20,000	465	—	1,500
Fortress troops—				
63 battalions	49,800	—	—	—
Total	714,040	124,706	2,364	Not known.

From what appears to be an authentic source, the whole strength of the Russian Army in Europe and the Caucasus is stated to amount to 30,574 officers and 751,000 men. In Asia to 75,000 men.

War

Units.	Men.	Horses.	Guns.	Wagons.
Infantry—				
193 regiments of 4 battalions	772,000	40,000	—	17,000
68 rifle battalions	68,000	4,500	—	1,524
9 reserve divisions of 16 battalions ...	144,000	7,000	—	3,000
15 reserve brigades of 8 battalions	120,000	6,000	—	2,500
Cavalry—				
600 squadrons and sotnias	100,000	100,000	—	—
The 2nd and 3rd categories of the Cossacks	75,000	75,000	—	—
Artillery—				
300 field batteries of 8 guns	80,000	66,000	2,640	7,590
60 horse artillery batteries, including Cossack batteries	11,000	15,900	360	1,440
90 reserve batteries	20,000	19,200	768	2,198
Technical troops	60,000	—	—	—
Fortress troops	213,286	—	—	—
Total { From	1,663,286	Not	3,768	Not
To	2,000,000	accurately known.		accurately known.

By the expansion of the 68 brigades of rifles into divisions the number of combatants will be increased by over 100,000 men, and the number of combatants in the 15 reserve brigades will be doubled by their being made into divisions.

Formation of New Reserve Brigade Commands.—Previously the infantry reserve brigades were confined to those following immediately on the 41 field divisions numbered from 42 to 48, and to 2 brigades, Nos. 1 and 2, for the Caucasus, each of 4 regiments of 2 battalions, which in war were to form 4 battalions, so that each brigade produced an entire division. Besides these there were 52 (with the Guard 53) independent reserve battalions in Europe and 10 in the Caucasus, the combination of which in brigades was also contemplated. This important step has now been taken, though in a somewhat different manner to the formation of the older reserve brigades.

Staffs for 15 reserve infantry brigades have been formed, consisting of a major-general, an adjutant, a brigade-surgeon, and 5 clerks, which is the same as the establishment of the previously existing reserve brigades.

The whole of the reserve battalions in European Russia and in the Caucasus are allotted to these brigades, except 4 located in distant districts, 2 of which are in the Caucasus. These continue to be

under the local brigades. The battalions allotted to the new reserve brigades are, on the other hand, no longer under the local brigades, but are directly under the commander of the military district concerned. The newly-formed reserve brigades in European Russia are numbered from 49 to 61; in the Caucasus they form the 3rd and 4th Caucasian reserve infantry brigades. The number of the reserve battalions available for the purpose is 50 in Europe and 8 in the Caucasus; thus 13 brigades have each 4 battalions, but the remaining 2 have only 3 battalions.

The establishment of all the reserve battalions is being increased in view of their expansion into regiments; they already have 6 companies. Apparently, even in peace, the new brigades will not be left with only 4 battalions; the next step rather will be to form from each of the 4 battalions of some of the brigades, if not of all, a regiment of 2 battalions. By this means, the organization of these new brigades would be analogous to that of the old ones (Nos. 42 to 48) or of the rifle brigades, and their mobilization as divisions of 4 regiments, each of 4 battalions, would be further facilitated.

The European infantry may, therefore, now be reckoned, without counting rifle formations, &c., as 3 guards, 3 grenadier, and 57 line divisions, of which 20 are reserve. There remain for the Caucasus 1 grenadier and 8 line divisions, of which 4 are reserve. There are further, in European Russia, 2 (with the guard, which in war forms a separate regiment, 3) reserve battalions and 2 in the Caucasus, which, however, from the situation of their stations, those in Europe, for instance, at Archangel and Astrachan, can hardly be utilized to form field troops. Even if converted into regiments they would remain in their peace districts, as would also the 1 regiment and 29 battalions of fortress infantry. The greater portion of the new reserve brigades are located in the eastern part of the empire, viz., 8 brigades, and in the southern part 4.

Minor Changes in the Army of the Caucasus.—The 6 Kuban *plastun* foot battalions have, for the purpose of more effective control, been constituted in a brigade like the Caucasus rifles. Two of these battalions stationed on the frontier of Asia Minor are borne as detached.

The independent Kuban Cossack brigade, that consisted of two regiments, has been broken up. One of the regiments has been allotted to the Caucasian cavalry division, which had previously, besides its three dragoon regiments, only 2 sotnias of Cossacks. The division has, therefore, now 18 squadrons of dragoons and 6 sotnias of Cossacks. The second regiment of the brigade broken up has been placed directly under the Ataman of the Kuban levies. There are besides in the Caucasus 2 Cossack divisions, 1 independent Terek Cossack brigade and militias.

Transcaspiian Troops.—Whereas hitherto the artillery of these troops consisted, apart from a Kuban Cossack battery, of two light batteries and a mountain battery of the 20th and 21st Artillery Brigades, these three batteries are now to return to the Caucasus, and three new independent batteries, numbered 1, 2, and 3, are to be

formed for Transcaspia. By this means the Transcaspian troops are rendered more independent of the Caucasus military district. They comprise 2 rifle brigades, 2 reserve battalions, 1 Cossack brigade, 1 Turcoman horse division (half a regiment), 3 batteries, 2 railway battalions, and 1 sapper company.

East Siberian Troops.—The line battalions have been increased by one, formed from local sources. There are, therefore, now 10 line and 10 rifle battalions, 1 artillery brigade, 1 Transbaikal, and 1 Amur mounted Cossack regiment, 1 Ussuri mounted half regiment, 2 Transbaikal, and $\frac{1}{2}$ Amur foot battalion, and 2 Transbaikal horse artillery batteries.

Transport Arrangements in the Russian Army.—By an army order, No. 55, of the $\frac{1}{8}$ March, 1893, the establishments and lists of material for the train with the troops were definitely fixed. A prolonged course of investigations, commenced in 1879, after the Russo-Turkish campaigns of 1876-77 had brought to light the great shortcomings that existed in the train service, has thus been closed. As long ago as 1885, the work of the committees appointed resulted in new regulations being issued for the infantry regimental train. In 1890 the cavalry train was reorganized by the substitution of two-wheeled carts for the wagons that previously existed, and the mobility of the army materially increased. In 1891 the Cossack train was reduced and converted entirely into park transport. The later regulations cover the arrangements for the staffs of the superior commands, and fix the establishment and material authorized for the army corps, divisional, and brigade staffs.

Reorganization of the Frontier Guards.—This service is composed of both horse and foot, organized in brigades and detachments. The reorganization introduced had for its object to accentuate its connection with the army. The troops composing the formations are inspected annually by the commander of the military district in which they are located, in the same way as other troops. The Minister of Finance is their chief in peace-time, but on mobilization they form a part of the field army. In peace they consist of 29 brigades and 2 independent detachments.

1. East sea-coast, 4 brigades.
2. Prussian frontier, 10 brigades.
3. Austrian " 6 "
4. Roumanian frontier, 2 brigades.
5. Southern " 7 brigades, 2 independent detachments.

Each brigade consists of about 30 officers, 1,000 men, and 400 horses. The mounted portion is equipped like dragoons. On mobilization the 400 mounted men of each brigade form a frontier horse regiment of 4 sotnias, the 600 foot are formed in several companies. Thus on the Prussian frontier alone a new force of about 10 horse regiments and 40 companies of frontier troops have been called into existence. In combination with troops of the field army these formations will provide during the first days of mobilization

for the security of the frontier, a service for which they are eminently fitted.

They are officered from the army, colonels being in command of the brigades and field officers of the independent detachments. For the last two years portions of the force have taken part in the army manœuvres, and drill and rifle practice grounds have been provided for the men.

Formation of Siege Artillery Battalions.—In 1892 the first siege artillery battalion was formed at Kieff. The formation of two more was ordered to be commenced in January, 1893, opposite the East Prussian frontier, at Dünaberg and Brest-Litovsk. Each was to consist provisionally of two companies only.

Recruiting.—Hitherto under the provisions fixed in 1874 those young men who had on the $\frac{1}{15}$ January of the year concerned attained to 20 years of age, were chosen by lot for service during the period between the $\frac{1}{15}$ November and the $\frac{1}{27}$ December (in Siberia between the $\frac{1}{25}$ October and the $\frac{1}{15}$ January). Those taken were sworn in, and had to join shortly after; but their services did not begin to reckon until the $\frac{1}{15}$ January. By the new instructions of January, 1893, the drawing and enrolment take place between the $\frac{1}{27}$ October and the $\frac{1}{27}$ November, almost a month earlier, for those liable to service who by the $\frac{1}{15}$ October have reached the age of 21. The annual class called up are therefore older than formerly, which is of importance.

The regulations for recruiting in the Caucasus, which have been in force since 1886, have been somewhat modified. The "right" has been accorded to the Mohammedan Ossetines to give personal service as well as their Christian fellow countrymen, this service to be with the Terek Cossack regiments. The term of service is the same as for all others liable to serve in Transcaucasia, viz., 3 years with the colours and 15 years in the Reserve. The Russians and other not indigenous inhabitants of Transcaucasia are to be called up for service in the same proportion as the native population, and the resultant contingent is included in the total number of recruits necessary for the supply of the army and navy. The recruits taken are, however, enrolled only with the troops of the military district of the Caucasus.

The recruits belonging to the indigenous population in the Terek and Kuban territories, as well as those of Transcaucasia, are distributed as directed by the War Ministry amongst the troops stationed in the Caucasus. Objection is still taken to utilizing other branches of the Mohammedan, and in some degree of the Christian mountaineers for service in the regular army, for they are not trusted.

Difficulties in regard to Non-commissioned Officers.—The necessity for the creation of an efficient body of non-commissioned officers, of which those occupying the superior positions are re-engaged, has become more and more felt since the introduction of the new arm, and the difficulties of training and leading that are associated with it. To this must be added the short service (in the infantry 4 years), as making more difficult the formation of good non-commissioned

officers. Most of them now have not served this four years, and come from the so-called school commands, from which after nine months' training, those found to be suitable join the company for six months. The theoretical and practical knowledge gained by them at the schools are not sufficient to fit them for the performance of their duties as non-commissioned officers; and yet in the main these materials, which are discharged after $1\frac{1}{2}$ years' service, have to suffice.

In order to get suitable men to re-engage many inducements were offered to them in 1888 and 1890, both in the shape of money awards and special privileges. Notwithstanding, however, these advantages, the experience of the last few years has shown that the inclination to re-engage is still small. The better men, who have some education and can work at a trade, find it repays them better to return to civil life than to continue serving. The remedy would appear to lie in the guarantee of civil State employment; but the posts at present retained for non-commissioned officers are altogether insufficient to have any material influence. In the meantime the situation is a serious one, the more so that in war each company apparently is to have no more than two officers, and the senior non-commissioned officers will have to occupy the vacant posts.

Mobilization.—New regulations were issued regarding the calling up with the Reserve of the active army and the opoltschenie of the officers, non-commissioned officers, and men of those categories, who in peace are in civil employ (including teachers). Their issue was necessitated by the former regulations having afforded such scope for exemption that difficulties arose in filling the post of officer, non-commissioned officer, and military official in the enormous reserve and opoltschenie formations contemplated. By the new regulations the officials of the four oldest classes are alone unconditionally freed from service, and the conditions regarding those of the remaining classes have been made more stringent. Those to be exempted are distinctly specified, according to the different departments of State, and only those are to be excused who cannot be dispensed with or replaced without detriment to the public service. The obligation to serve in case of war has been especially accentuated for those persons who have already received a military training, and are fitted to occupy the posts of officer or military official. Greater consideration can be shown in the case of the men, for amongst them there is no lack of trained soldiers.

Training.—The summer training adopted in Russia is in the form of local camps of exercise, of which there were 77 formed in 1893. The proportion of the troops that attended these was 71 per cent., which was 11 per cent. more than in the previous year, and in 27 districts there were movable manœuvres of from 8 to 14 days' duration. Of the infantry, 74 per cent. were exercised in division or brigade, only 26 per cent. in separate regiments.

Of the Reserve and fortress troops the whole of those in the military districts of Wilna, Warsaw, and Kieff took part in the general exercises, and 52 per cent. on an average in other districts.

The training of officers and men of the Reserve and of the *ratniki* of the *opoltschenie* took place as usual. Those called up are the men in the first category for the defence of the Empire (four annual classes), and they have two periods of training, each of three weeks' duration, at the headquarters of the district. The men of the *opoltschenie* are not provided with any uniform. The training afforded does not appear to be of a very practical nature or calculated to prepare the men for their duties in time of war.

Of the cavalry, 95 per cent. participated in the special concentration of the arm which took place at 19 different points. In the western military districts the whole of the cavalry took part in still larger concentrations (one and several divisions concurrently), in other districts 47 per cent. The opportunity of manœuvring with the other arms was given to 90·3 per cent. of the entire cavalry, including Cossacks of the 1st category.

The first training period for the artillery is very short, not quite four weeks, for most of the batteries, partly in the neighbourhood of the garrisons, partly in camps.

Gunnery practice occupied 8 weeks in 70 per cent. of the batteries, 6 weeks in 26·3 per cent., 4 weeks in 4 per cent. of them.

So-called great manœuvres were held only in the St. Petersburg, Moscow, and Warsaw districts.

The practice of field firing with forces of all arms, generally at war strength, was prosecuted with much energy, partly in winter.

The exercises of cavalry in swimming rivers were continued, and new means of carrying over the equipment are being continually tried. In the Warsaw district, for instance, boats and rafts made by the men themselves were employed. The materials for the construction of the rafts, viz., beams and planks, were carried with the troops and could be put together in 10 minutes. Each raft carried 40 saddles with arms and equipment and 4 men to manage it. The boats carried with the regiments were of waterproof sail-cloth.

The horses and men swam the rivers in different ways:—1. All either sat their horses or held on by the mane or tail; 2. A few horses were taken over after the boat, the rest followed in a herd; the men crossed, some in the boats and some swimming; 3. The horses swam, some with their riders and some alone.

Musketry Regulations for the New Rifle.—The following are the more noticeable alterations made in the regulations previously in force:—

1st. The limits of range at which firing is to take place have been extended, and they are fixed for individual practice of infantry and cavalry at 1,000 paces, for collective firing of infantry at 2,500 paces, and of cavalry at 2,400 paces.

2nd. The practices with small targets are increased, and they are placed at rather further distances.

3rd. The marking of the hits after every shot only takes place at the first two practices at 200 paces, in the subsequent practices after every five rounds.

4th. Practice ammunition is increased from 130 to 150 rounds.

5th. Individual practices take place at 800 and at 1,000 paces. Cavalry have mounted individual practice at the halt.

6th. Every man is required to judge distances up to 1,000 paces.

SWEDEN.

The army is constituted in peace in 6 army divisions, consisting of from 3 to 6 regiments of infantry of 2 battalions, 1 regiment of cavalry of 5 squadrons, 1 regiment of field artillery of 6 batteries.

To the 1st division, the headquarters of which are at Helsingborg, has, in addition, 3 independent battalions, 2 regiments of cavalry, 2 horse artillery batteries, and 1 battalion of train of 2 companies.

The 3rd division at Skövde has 1 extra independent battalion, 1 battalion of foot artillery of 2 companies, 1 battalion of engineers of 4 companies, and 1 battalion of train of 2 companies.

The 4th division at Stockholm has 1 battalion of foot artillery of 4 companies, 1 battalion of engineers of 5 companies, and 1 battalion of train of 2 companies.

The 6th division (Oestersund) has a battalion of train of 2 companies.

The forces in Gotland are not included in these divisions; they consist of 1 regiment of 2 battalions, 1 division of field artillery of 2 batteries, and 1 company of foot artillery.

In war each army division furnishes 2 brigades (the 3rd, 3) of 12 battalions (the 3rd, 19), 1 regiment of cavalry of 4 squadrons, 1 regiment of field artillery of 2 divisions, 6 batteries, 1 company of engineers, and 1 battalion of train. The 3rd and 4th divisions have each 1 battalion of foot artillery, the former of 2 companies, the latter of 4.

A cavalry division is formed of 2 regiments, 16 squadrons, and 1 division of 2 batteries of horse artillery.

The forces in Gotland are, in war:—1 regiment of 3 battalions, 1 division of 2 batteries of field artillery, and 1 company of foot artillery.

Dépôts are formed in each of the 6 division districts of 4 battalions (in the 3rd, 6), 1 squadron cavalry (in the 1st, 5), and 1 to 2 field batteries. There are, in addition, in the 1st division district, 1 horse artillery battery and 1 company train; in the 3rd and 4th division districts 1 company foot artillery, 1 company of engineers, and 1 company of train; and in the 6th district 1 company of train.

Strength.—In peace:—1,905 officers, 36,278 other ranks, and 6,756 horses of all arms and branches of the service.

In war, the strength is 2,348 officers and 49,741 other ranks. Taking those liable to service in the landsturm by yearly classes, the 1st levy, including the eight years from 1886 to 1893, may be estimated at about 180,000 men; the 2nd levy, comprising the classes from 1882 to 1885, both inclusive, at about half that number, or 90,000 men, the oldest of whom would be 32 years of age.

Train.—The transport of ammunition and provisions, both with the several units and with each army division, is provided for in detail.

With the troops each infantry battalion has 4 small-arm ammunition carts, 1 medical wagon, 4 provision and 5 baggage wagons; a squadron has 2 provision wagons and 1 baggage wagon; a field battery has 8 ammunition wagons, 2 provision and 5 baggage wagons. To the army division train belong the following in each division:—

Staff of the army division train with 4 wagons.

Staff of the ammunition columns with 3 wagons.

2 artillery ammunition columns (each with 19 ammunition wagons, 3 reserve limbers, 1 field forge wagon, and 2 baggage wagons).

2 infantry ammunition columns (each with 17 ammunition wagons, 1 field forge wagon, 2 baggage wagons, and 1 tool wagon).

4 supply columns (each with 1 field forge wagon, 1 baggage wagon, and 60 provision wagons).

4 forage columns (each with 1 field forge wagon, 1 baggage wagon, and 76 forage wagons).

1 cattle column with 1 wagon.

4 field hospitals (each with 200 beds, 2 medical wagons, 2 baggage-wagons, and 8 transport wagons).

1 horse depôt, 80 horses, 2 wagons.

1 field bridging train with 24 bridge wagons, 4 tool and 4 forage wagons.

The train allotted to units is subdivided into fighting train and baggage train. To the former belong ammunition, medical, and tool wagons, to the latter all other vehicles belonging directly to the troops.

In marches under service conditions the vehicles of the fighting train, together with reserve horses, remain with the troops; each infantry battalion is followed immediately by its medical wagon, and each regiment by its ammunition wagons. With the artillery the 1st line (4 ammunition and 4 baggage wagons per battery) follow immediately after the guns; the 2nd line (4 ammunition wagons and 1 baggage wagon per battery) in rear of the marching column. The engineer field company is followed by the tool wagons, eventually, also, by the field bridging train, and the sanitary company by all its wagons. The baggage train is formed in one column in corresponding order to that of the troops, and follows them at a distance of from 2 to 3 kilometres.

In the event of there being a probability of a hostile collision in the course of the day, the army division train is divided into two echelons. The first echelon moves at about 5 kilometres from the rear of the baggage train, and consists of 1 artillery and 1 infantry ammunition column, 1 to 2 field hospitals, 1 to 2 provision and 1 to 2 forage columns. Upon an engagement occurring, the ammunition columns and field hospitals of the 1st echelon are moved up in part or entirely to the troops.

The remaining columns of the army division train form the second echelon and follow the first at a distance of about 2 or 3 kilometres.

SERVIA.

The peace establishment of the Regular army (not including superior officers, commanders, staffs, medical officers, veterinary surgeons, military officials, and artificers) during 1893 was 580 officers, 12,112 men, 2,773 horses, and 206 guns (including field, mountain, and fortress artillery). Besides these, about 6,400 recruits could be called up for a period of five months, and about 1,700 for one month. The whole establishment for the year was 15,002 men.

On mobilization each of the five territorial divisions of the active army is completed as follows:—

Infantry:—4 regiments of 4 battalions..... 16,224 all ranks.

Cavalry:—1 division of 2 squadrons..... 405 „

Artillery:—1 regiment of 2 divisions of 3
batteries (6 guns)..... 1,635 „

Engineers:—

1 company	}	515 „
1 bridging equipage		
1 subdivision telegraphs		
1 intrenching-tool column		

Sanitary Service:—

1 company	}	582 „
1 sanitary column		
1 etappen field hospital		
1 sick horse dépôt		

Artillery Establishment:—

1 artillery ammunition column of 2 sections	}	473 „
1 infantry ammunition column of 2 sections		
1 movable artillery workshop		

Supply and Administrative Formations:—

1 provision column	}	1,281 „
1 bakery company		
1 butchery company		
1 artificer company		
1 slaughter cattle dépôt		
1 field post		

Strength of each division.... 21,115 „

For 5 divisions..... 105,575 „

Outside, and in addition to the formations included in the division organization, there are the following:—

1 cavalry brigade of 3 regiments of 4 squadrons, 1 horse artillery battery: 1 ammunition column.....	2,684
Royal body-guard: 2 squadrons.....	300
Mountain artillery: 1 regiment of 10 batteries of 4 guns, 1 ammunition column.....	2,307
Fortress artillery: 1 regiment; 1 siege park.....	2,300
Arsenal artillery: 1 company.....	234
Reserve ammunition column: 5 sections.....	2,301
Pontoon troops: 1 battalion of 5 companies.....	1,095
Railway troops: 1 battalion of 5 companies.....	477
Miners: 1 company.....	234
Telegraphs: 2 divisions.....	264
2 bridging equipages.....	637
Special establishments.....	2,232
Together.....	15,065

There are, further, the ersatz and dépôt troops, viz. :—

Infantry: 20 battalions of 4 companies.....	23,520
Cavalry: 5 squadrons.....	905
Artillery: 5 field batteries of 8 guns.....	1,890
„ 1 mountain battery of 6 guns.....	273
„ 1 subdivision of horse artillery.....	49
Engineers: 5 subdivisions.....	350
„ 5 subdivisions pontoon troops.....	395
Together.....	27,382

<i>Summary</i> :—5 divisions.....	105,575
Outside the divisional organization.....	15,065
Dépôt and ersatz troops.....	27,382

Total strength of the regular army.. 148,022

Besides these troops composed of the regular army are the national levies of the 1st and 2nd Bans. The formations into which these are organized follow generally on the lines of the regular army. Thus, 5 divisions are formed from men of the 1st Ban that differ little either in composition or in strength from the army divisions; the formations outside the divisional organization are, however, limited to a few artillery and engineer formations. The dépôt and Ersatz troops differ little in strength from those of the regular army.

The following is a summary of the strength of the 1st Ban formations:—

5 divisions.....	97,585
Outside the divisional organization.....	2,031
Dépôt and ersatz troops.....	25,900

Total strength of 1st Ban levies..... 125,516

The levies of the 2nd Ban are applied to the formation of 5 divisions on a reduced strength, viz., each of 3 regiments of 4 battalions, 1 squadron, 1 company of artillery, and a sanitary company.

Together, per division	12,757
And for the 5 divisions.....	63,785

The total contemplated war strength, therefore, is the following:—

Regular army	148,022
1st Ban, popular levies.....	125,516
2nd „ „ „	63,785
Total.....	337,323

But there are wanting to complete some 18,000 of the regular army and about 10,000 of the 1st Ban; on the other hand, there is a surplus of about 36,000 of the 2nd Ban. A more serious difficulty is the want of officers; only by reducing the numbers with inferior units from 4 or 5 to 2 or 3 could the number of active and reserve officers suffice for the requirements of the regular army alone. There would, if this reduction were made, be about 170 officers still available for other formations, and these would, with about 130 officers on pension, give in all about 300 officers only for employment in connection with the territorial commands and popular levies. It is evident, therefore, that the mobilization and employment of the entire force the completion of which is contemplated in the scheme could not possibly be effected. The probability is, indeed, that, with the resources at present available, the completion of a force of 170,000 men is as much as could be counted on, or about a half of the force it is hoped some day to attain to, and this result would be dependent on financial considerations.

Organization: Changes in the Fundamental Military Law.—By a Ukase of the 2nd August, 1893, the permanent cadres of the regular army were fixed in the following manner:—

Infantry:—5 regiments of 4 battalions, of which 1 guard.

Cavalry:—1 guard regiment of 2 squadrons, and
1 cavalry brigade of 3 regiments of 4 squadrons.

Artillery:—5 regiments of field artillery of 3 divisions of 3 batteries.
1 regiment of mountain artillery of 5 batteries.
1 horse artillery battery.
1 fortress artillery regiment of 2 battalions, and
1 company of arsenal artillery.

Engineers:—2 battalions, one of 5 companies, the other of 3 companies of special troops.
 $\frac{1}{2}$ battalion pontoon troops.

Special troops:—5 sanitary companies, 5 train squadrons, 5 bakery and 5 butchery sections.

The cadres of the 1st Ban of the popular levies are in peace to consist of a number of officers and non-commissioned officers, but this arrangement has not, as yet, been given effect to.

The effect of the change in the cavalry has been to augment each of the 3 regiments by a fourth squadron, and to add to it a second squadron of body-guard, to be amalgamated with the one previously existing into a body-guard regiment.

The field artillery receives an addition of 15 batteries, for a third division of 3 batteries is added to each of the 5 regiments. The whole of the batteries will have in peace 4 horsed guns, in war 6. The fortress artillery is doubled by the addition of a second battalion to the one previously existing, and the two battalions are to be formed into one regiment.

Remounts.—The difficulties in regard to the provision of a sufficient number of horses is one of the weakest points in the Servian scheme of mobilization. The requirements for the whole army on a war footing are estimated at 45,000 horses, whereas in peace barely 3,500 efficient horses are available. Of the balance of 41,500, not more than 10 to 20 per cent. are available in the country itself.

In these calculations the 22,000 oxen for the transport in the regular army and 1st Ban troops are left out of consideration. No decision has as yet been taken as to arming the troops with a magazine rifle, and, looking to the financial condition of the country, an early rearmament of the troops does not seem probable.

INFANTRY TACTICS.

There are at the present time certain principles that have been accepted in every army, and it is with the development and application of these tactical principles that we are chiefly concerned. For instance, all are agreed that, in spite of improved arms, the offensive continues to be the most effective form of fighting. If reference be made to the regulations in force, it will be found that, whether they be German or Russian, Austrian or French, Italian or Belgian, in all the attack is advocated, as well as the development of the offensive spirit. The tactical literature of these countries offers the same picture. The adoption of the attack, indeed, by the infantry is claimed by most of the armies of the countries named as a speciality, which has always been peculiar to it.

The same is the case with the recognition of the great importance of the field artillery to the issue of the infantry fight. In all armies the field artillery has been brought up to the same standard in regard to number of guns, material, and organization, so that a superiority in artillery, such as favoured the Germans in the above respect in the Franco-Prussian War, would appear to be excluded from future wars. In any case, the infantry must not count on finding its way smoothed tactically, even in an approximate degree, in the way it frequently was in the war of 1870-71 by a preponderating artillery fire.

On the one hand, the recognition of the powerful influence of the co-operation of the artillery in the infantry fight has led to theartil-

lery being no longer regarded as an auxiliary arm during the chief stages of the battle, but as an equivalent factor. On the other hand, the infantry have recognised that, as a result of the general increase in effective power of the artillery, the so-called artillery duel will frequently not lead to any distinct suppression of either side, and the infantry will then have to bear the burden of the fight not only under the infantry fire of the enemy, but also under his artillery fire.

The conviction has become not less general that, without prejudice to the moral superiority of the attack, this, if undertaken against an opponent of equal value, will have a prospect of success only when a superiority of fire has first been secured.

This point is dwelt on in all regulations and in all tactical discussions. Whether, while fighting to secure this superiority of fire, one's own artillery will always be able to play a great rôle, must, from what has been said above, be a matter of doubt.

It is quite immaterial whether the superiority of fire be achieved by purely mechanical means, that is, by better shooting, or by a superior number of rifles in action, or by fire brought to bear on the enemy's flank or rear. It is just in this that tactical skill consists: so to bring up and place the troops as to produce situations that will facilitate the enemy's overthrow. Superiority of fire can only be obtained, directly or indirectly, by some tactical pre-eminence. This may be of a moral kind, such as when one of the opponents has more courageous, more highly disciplined, and better trained troops than those opposed to them. It can be found in more skilful tactical leading, that knows how to concentrate superior numbers at the decisive point. Lastly, it may be produced by a better strategic leading, that understands how to bring superior against inferior numbers.

But this tactical pre-eminence, as one of the most indispensable factors of success, will, in the future, be undoubtedly harder to achieve than it was in the case of the victors in 1866 and 1870-71. In 1866, amongst other points, there were the superiority of the infantry arm, the more skilful strategical leading, and more appropriate infantry tactics. In the year 1870-71, however, the tactics of the German infantry as such contributed but little to their tactical pre-eminence. The German infantry tactics were neither in their nature nor in their formations much superior to those of the French; but this superiority found its main support in the spirit that dictated always an obstinate pressing forward.

The development of infantry tactics from 1888 to 1893 has undoubtedly done more for the proper appreciation of their nature than in the period from 1870 to 1888. This development has benefited tactical formations, and no doubt now exists that the swarm is the only formation in which infantry can fight.

Infantry Tactics in the several Armies.

Germany.—The individual training of the infantry soldier continues to serve as the foundation of the tactical training, and if here and

there the objection is raised that this individual training places too great value on drill and parade, it may be answered that attention must be paid even to this purely mechanical part of the instruction, as a means to the attainment of discipline and military habitude.

On the other hand, a certain reaction is making itself felt in the German Army against too great scope being given to the tactical freedom of subordinate leaders. This tactical independence of the leaders of all grades has been specially developed in Germany, and credit must be given for this without necessarily agreeing with all the consequences of this development. In Prussia, and later in Germany, value was placed upon basing the exercises of the troops, as far as possible, on service conditions, and by this means improving the tactical *coup d'œil* of leaders, and their capacity for making decisions. This endeavour led, however, finally to the preference being given to minor tactics, to the so-called "detachment warfare," to the detriment of the tactical requirements of the battle, which differ in many particulars from those of detachment warfare. As, however, in war it is the pitched battles that decide victory or defeat, there is some danger in resigning oneself in peace to tactical usages and aspects which are not always in accord with the requirements of battle tactics.

By thus favouring detachment warfare for the purposes of tactical instruction, conceptions in regard to the extent of front and fighting area are easily dislocated, and tactical situations consequently produced which endanger the unity of tactical action. It is only natural that it should be in the German Army itself, in which tactical freedom of action has been longest inherent, that objection should first have been raised against the excessive application of the principle of tactical independence of the leaders.

It was noticeable, in the Autumn Manœuvres of 1893, that the tactical habits of detachment warfare just referred to frequently manifested themselves where they might easily be detrimental, that is, in the engagement of large bodies of troops. This was evidenced by the selection of fronts which were not always in proper proportion to the number of troops available, so that infantry regiments occupied an extent suited to a division; there was also too great an economy of forces, not always in accord with the tactical requirements of the present. Broad frontage is required for the infantry engagement, for by this means alone is it possible to have from the commencement an equal or greater number of rifles in action than the enemy; otherwise the endeavour to obtain the superiority of fire must remain a theoretical idea. Having regard to this tactical fact, the principle of fighting in deep formations, which is specially emphasized in the German regulations, must have its appropriate limits.

France.—Notwithstanding that the French Infantry Drill Regulations appeared a year later than the German, many in France are of the opinion that the latter takes far more account of the tactical requirements of the present than the French regulations. This was

shown in 1893, not only in the literature, but also in the scientific conferences, which have in France a great development and a certain authority. The French Drill Book, more than any other in force, the new English Infantry drill comes next, contains still certain sympathies with linear tactics. According to German conceptions, the so-called battalion school is still very complicated. The French infantry practises on the ground forms and formations which can hardly be called suited to service conditions. There is also a so-called normal attack in a fixed formation. The more or less official representatives of the regulations do not admit this, for they point out that the tactical instructions afford scope in every direction, and always emphasize the independence of the leader, which in itself excludes definite formations. On the other hand, in practice the endeavour undoubtedly prevails to follow the precise directions of the regulations.

The opposition to the tactical system of "petits paquets," which provided for small supports, large supports, &c., behind the skirmishing line, has been general. Both theorists and many of the practical soldiers on the other side of the Vosges wish to see the system done away with altogether, and replaced by arrangements that will admit of the fight being commenced with a sufficiently developed front.

This must receive complete approval. Apart from the fact that with the existing system it will never be possible to wrest the superiority of fire from a well led opponent, who from the commencement has deployed a strong firing line, it is even doubtful whether the supports, echelons, &c., which should reinforce the advanced fighting line will really be able to do so. They serve not only as targets, which become smaller and smaller, but it may be doubted whether it will be possible to bring these supports forward into the fighting line at all during the fire fight without enormous losses.

Again, the objection, not seldom heard, that the deployment of strong firing lines from the first entails too heavy losses, is not sound, for official experiments have proved that the percentage of losses in thick firing lines is no greater than in thin ones. This seems to settle, once and for all, the tactical controversy, by showing that in all circumstances a thick firing line is tactically of greater advantage than a thin one, because the former brings more rifles into action, and by this means is able earlier to gain the superiority of fire, the ultimate object of all infantry tactics.

Objections have also been raised in some quarters against strong advanced guards, because they favour the splitting up of the forces and make the united action of the troops more difficult. Also the deployment from deep formations by pushing up the successive infantry fractions has been found fault with, and in place of it is advocated the simultaneous advance and deployment of several columns, which would enter into the fight of the advanced line together. In connection with this tactical tendency, which aims at simultaneous effect and at a great effect at the first stage of the engagement, is the desire to embody the principle in the order of

march of the troops. General Lewal is the exponent of this principle, and his views on the subject have been set forth in the "Journal des Sciences Militaires, 1893," under the title of "Stratégie de Marche." In place of the helpless division and army corps columns now generally employed, he would substitute brigade columns with artillery attached to them, which would march on parallel roads, or even on so-called column roads specially constructed. The idea is not new; Napoleon approved of it, and instances of its application are to be found in the war of 1870-71.

General v. Scherff has recently expressed the same opinion, but exclusively for employment during the advance to actual combat, and both he and General Lewal are agreed in desiring that at our peace manœuvres more attention should be paid to these movements, both on the march and in manœuvre.

Great tactical advantage is expected from the so-called "sections franches" of infantry battalions. They are intended to serve as battle patrols, in the widest sense of the word.

Field Artillery Tactics.

The chief question, it might almost be said the only one, with which artillery literature was occupied in 1893 was that of the field gun of the future. Should it be a gun with the greatest possible fire effect and of sufficient mobility—that is, of from 1,850 to 1,900 kilos.—or should the greater effect of the single round be abandoned, the greatest value attributed to rapidity of fire, and a gun be adopted with a materially lighter projectile and moderate initial velocity that would have little or, if possible, no recoil? Should the principle be retained of one uniform calibre, or should two calibres be adopted—the one heavy, having the propensities described above, and one light of the quick-firing type referred to? Should we be satisfied in futuro with the effect of high-explosive shell from field guns against objects behind light earthworks, and only resort to horsed batteries of foot artillery in special cases, when the defensive position to be attacked has been prepared long beforehand; or should light calibre howitzers be adopted as an integral part of the field artillery? If the answer be in the affirmative, what is the proper place for these guns in the *ordre de bataille*?

The field artillery has but one task to fulfil in battle, and that is to support the infantry, whether in the attack or defence. The first act is the engagement with the hostile artillery, the issue of which is of the greatest importance to the result of the battle. If the attacking artillery succeeds in overpowering that of the defence, it remains master of the field, and can carry out undisturbed its second task, which is, the preparation of the infantry attack by bombarding the point selected for attack. But if the attack should not succeed in driving off the hostile artillery, if the balance even should incline somewhat in favour of the defender, the attack need not on this account be absolutely given up; but the prospects of success will undoubtedly be much less: in any case, it will be very costly. But

it may also happen that the force that was the stronger at the commencement of the fight finds itself obliged to abstain altogether from attack, and may even be glad if it is able to repulse its opponent's attack. It is therefore a desideratum to have if possible a gun superior to the enemy's artillery, that is, one which allows of rapid fire which, though not perhaps strictly accurate, will still produce sufficient effect. For this purpose, what is wanted is a gun to fire shrapnel with a large number of bullets and having a flat trajectory. Under similar conditions a heavy shrapnel is always superior to one of less weight, and more so the greater the range and the less accurate the fire. By this is meant not the absolute superiority, which stands to reason, but the relative; that is, in the firing of equal weights of ammunition the heavy projectile will always produce a greater effect than the light. The light gun can undoubtedly make up for the less effect of the single shot by greater rapidity, especially at short ranges, but hardly at distances at which the artillery action will presumably be fought.

A material increase in rapidity of fire is only possible by getting rid altogether of the recoil. Endeavours have been made to do this in various ways, but, short of injuriously reducing the initial velocity, no satisfactory solution has been found. In the opinion of the writer of this report on field artillery, the gun of the future should be one of about 8 cm. calibre, firing a projectile of from .7 to 7.5 kg., the velocity of which would be as high as possible without necessitating an increase in the weight of the present gun-carriage (500 to 550 m.). This gun would be furnished with every appliance that would contribute towards increasing the rapidity of fire without subordinating the effect of the single shot. Therefore no reduction in the weight of projectile, no spur or carriage in two portions. We are convinced that with a gun of this nature from 3 to 4 well-aimed shots could be fired in the minute, which, at ranges over 3,000 m., would undoubtedly effect more than 8 or 10 rounds which Longlois, the chief exponent of the quick-firing gun, would fire with his gun in the same time, for it is impossible that it could be properly laid.

Whether, besides this gun, it is necessary to have a lighter one for the horse artillery, depends on the demands to be made on that branch. The weight of the gun described above could, without difficulty, be brought within 1,850 to 1,900 kg., which is not too heavy for field artillery. If what is expected of the horse artillery is that it should support the cavalry in its service of exploration in front of the army, when it comes to be a matter of breaking down local resistance, such as opening a defile, fighting on foot, &c., this weight is quite possible. But if it be considered necessary to support the attack on hostile cavalry by horse artillery—looking to military history the case will hardly occur—then the weight must be reduced to 1,650 kg., perhaps still lower.

The introduction of field howitzers has lately been advocated from many sources and for many reasons as necessary. Some believe they cannot be dispensed with because the effect of high-explosive shell fired with a low trajectory against objects behind cover have not

always answered expectations, which have perhaps been fixed too high. Undoubtedly a well-placed high-explosive shell from a howitzer or mortar will have a greater effect than if fired from a field gun; further, the percentage of effective rounds will be greater; and, lastly, the large fragments of the heavier shells fired from the high-angle guns will pierce the light splinter-proof cover provided, which it is doubtful whether the splinters of the improved high-explosive shell will do.

On the other hand, such serious evils are associated with the introduction of a gun that is required only for special purposes, such as the howitzer, which could do little or nothing in the artillery combat, that only absolute necessity could justify it.

It has generally been maintained that in dealing with a stationary enemy under cover it is sufficient to support the infantry attack by driving the enemy from the parapet and thus forcing him to inaction. But this can be effected by shrapnel fire, perhaps by directing a sudden fire on the infantry trenches with a view to making the defenders believe that the assault is imminent, and so drawing them from their cover. By this means considerable losses will be inflicted, and the defenders' moral power will be perhaps more affected than by a long continued bombardment with high-explosive shells.

In our opinion, it will be for the superior commander to decide which course to adopt. In many ways, if not in most cases, howitzers will not produce a greater effect than the high-explosive shell of the field guns.

In those cases in which the enemy has had a long time for the preparation of his position, horsed batteries of foot artillery would be used, the guns of which are capable of penetrating strong cover, and which possess the means of observation even of exceptionally difficult objects.

It is contended, on the other hand—and the well-known Austrian, Count v. Wüch, is an adherent of this view—that the introduction of a field gun for high-angle fire is not only desirable for firing at sheltered objects, but that it is necessary in the final stages of the battle, when firing over one's own troops is unavoidable but too dangerous with guns having a low trajectory. Colonel v. Wüch is of opinion that on level ground it is possible now to fire over infantry at ranges of 1,500 m. and upwards, but that this distance must be increased if guns having a flatter trajectory be employed.

We should be reconciled to the introduction of a high-angle fire gun, as a necessary evil, in the case of the bombardment of covered objects being absolutely necessary, and if the effect of high-explosive shells from field guns be declared to be inadequate, even when fired with reduced charges.

As regards the place for this class of gun, if adopted in the *ordre de bataille*, it has been suggested that in every division of field artillery there should be one howitzer battery. But this would be a retrograde movement, for one of the greatest advances made in artillery tactics since the war of 1870-71 has been the constitution of the division as the tactical unit for field artillery; and, further, it is

evident that one howitzer battery per artillery division would be out of all proportion to the requirements of the case.

If it should be deemed indispensable to allot guns of this nature to every army corps, then the proper place for them would appear to be in a separate division of three batteries attached to the corps artillery.