

COMPETITIVE TRIALS BETWEEN THE ENGLISH 9-INCH GUN AND
THE PRUSSIAN 96 AND 72-POUNDERS.

*Reports of the 10th July and 22nd November, 1868.**

The artillery experiments of every kind which have been made during the last year in Prussia have been on a very extensive scale, almost unequalled in any other country. The expense of these experiments has been enormous. A single iron shield, to which I will hereafter refer, costing no less than 16,000*l.* But the Prussian Government hesitates at no sacrifice to obtain the following information:—

1. The guns with which its ships must be eventually armed.

2. The best guns for, and the best coast defences.

Such is the object of these continued and costly experiments, which are in the highest degree interesting to the artillery, the navy, the numerous artificers employed in the iron and steel works, and, indeed, to the whole country.

The results hitherto obtained have surpassed all expectation, and filled all classes of the nation with pride and satisfaction.

The newspapers entertain no doubt but that the young German Navy will shortly be able to struggle against the other European navies; and all celebrated with delight the victory which, according to their views, the Prussian iron and steel manufacturers have obtained over those of England.

Prior to 1866, Prussia, deprived of harbours, had obtained from a little neighbouring State (the Duchy of Oldenburg) the cession of the harbour of Jade, to the west of the mouth of the Weser. She is there attempting to make a great naval establishment. Since 1864, the Government has made many experiments at this place with iron plates, fired at by both bronze and iron 72-prs.

But since the events of 1866 created the North German Confederation, this Confederation has assumed the position of a great naval power, and Prussia has redoubled her efforts to increase, and develop her young navy. In everything that relates to the armament of ships, and coast batteries, she seeks to determine the kind of gun to adopt, for both services.

* We have thought it desirable to throw these two reports into one. It appears from that, of the 10th July, that Colonel Stoffel was not allowed by the Prussian War Minister to see the experiments referred to, and he expresses his regret at not being able to give as accurate an account of them as was desirable.

In the month of January, 1870, he sent to the Minister of War at Paris a copy of a pamphlet, which is a German translation of an article published in Russia, in the second volume of the Journal of Artillery, written by M. Doppelmair, Captain of the Horse Artillery of the Russian Imperial Guard, who had been authorized to witness the experiments at Tegel, near Berlin. Colonel Stoffel asked the War Minister to have the pamphlet translated into French, as it was very accurate and a very good account, of these interesting experiments.—[Ed.]

In England, Mr. Armstrong having, after many trials and an expenditure of more than a million sterling, succeeded in demonstrating the power of his 9-inch muzzle-loading gun, termed the Woolwich gun; Prussian officers were sent to England, and returned, convinced that this gun, was *the* gun, of the future, and that Prussia should simply adopt it. But M. Krupp and a great number of officers protested. "Are you going," said they, "without even daring to make a competitive trial, to acknowledge the inferiority of the steel guns made at Essen, and entirely abandon the undoubted advantage of breech-loaders? Are you going to destroy a manufacture of which Prussia is so justly proud, and render this country for ever tributary to a foreign state?"

These reasons carried the day; and it was decided to make competitive trials with the two guns, and, with this view, the Naval Department at Berlin purchased in England a 9-inch Armstrong gun for 1,620*l.*

The experiment of firing this 9-inch gun and the 96-pr. against plates of iron was shortly after begun at the Tegel range.

The following are the principal dimensions of the guns:—

English gun, termed the 9-inch, or Woolwich gun, of wrought-iron, with a steel lining; calibre, 9-inch; weight, 28,820 lbs.; muzzle-loading, firing cast-iron Palliser projectiles; weight of shell, loaded, 249·7 lbs.; weight of charge of shell, 2·7 lbs.; weight of charge of gun, 43½ lbs. of English large grain powder.

Prussian gun, termed the 96-pr., made of cast-steel; calibre, 9·27 inches (9 Prussian inches); breech-loading; breech closed by a cylindro prismatic wedge; weight, including breech-loading apparatus, 32,230 lbs., firing Krupp projectiles of cast-steel, or Gruzon projectiles of cast-iron; average weight of the latter, loaded, 336·4 lbs.; weight of lead coating, 59·8 lbs.; weight of charge of gun, 46·3 lbs. of Prussian powder, which is equivalent to 39 lbs. of English powder.

M. Krupp made two 96-prs. especially for these trials, strengthened at the breech by steel rings. They were sent to Tegel, where three shields were made to represent the side of iron-clads, with plates 5, 6, 7, 8, 9 inches, backed by timber of 30 to 15 inches in thickness.

A beginning was made by firing the Prussian guns, to determine the initial velocity that could be obtained, preserving sufficient accuracy of fire. With a charge of 46·3 lbs. Prussian powder, the initial velocity of the projectile, measured by the Boulongé apparatus, was 1,142 feet per second, much below that of the Woolwich gun, which was 1,324 feet per second. Several trials were then made, with the object of increasing the initial velocity, first by increasing the charge of Prussian powder, then by using English large grain powder, which burns more rapidly. But the results were not deemed satisfactory; the English powder was thought too strong for

the 96-pr. gun; and it was found, that with a charge of 49·6 lb. of Prussian powder, the accuracy began to diminish, while the increase of initial velocity did not exceed 19·68 feet.

The first competitive trial, between the rival guns took place on the 2nd June.

The English gun, fired with a charge of $43\frac{1}{2}$ lbs., four blind Palliser shells, weighing 250·3 lbs., the initial velocity being 1,324 feet per second. The first was fired at a range of 988·3 yards, against a 6-inch plate; two others were fired at a range of 781 yards, against a 7-inch plate; and the fourth at a range of 514·1 yards, against an 8-inch plate. The four projectiles passed completely through the shields, breaking up, so to speak, as they came out.

The Prussian gun (96-pr.) fired, with a charge of 49·6 lbs. of Prussian powder, two Gruzon projectiles, weighing 336·4 lbs. with an initial velocity of 1,151 feet per second; one at a range of 988·3 yards, against a 5-inch plate, the other at a range of 514·1 yards, against the 8-inch plate. The first pierced the plates and the backing, breaking into three pieces; the second remained fixed in the backing. This first trial was evidently entirely in favour of the English gun.

It would be very difficult for us in France to conceive the emotion, not only of Berlin, but all Prussia, at the result. The Government, the manufacturer, the Artillery were, for a moment, struck with consternation. Was the Government to be trammelled in its attempts to develop the rising navy of North Germany? Was all the money hitherto spent in arming the ships thrown away? This steel manufacture, so much ahead of the rest of the world, of which Prussia was so proud, was it all at once going to fail? By a sort of paradox, as is often observed when the passions are greatly excited, the consequence of this trial was to renew the disputes which divided the Prussian Artillery into hostile factions, the partisans of steel and those of bronze. The latter reproached their opponents, first, with allowing themselves to be beaten by the English with a gun costing one-half that of the Prussian gun; next, with having compromised the manufacture for which Prussia is celebrated. General Neuman, the creator of the new steel matériel, and the partisans of M. Krupp, replied to these attacks almost as follows:—

“The trials of the 2nd June are not conclusive, because
 “they have not been made under similar conditions. The
 “English gun has fired with large grain powder, whilst we
 “have used our common powder. Now the first has a greater
 “expansive force, whence it follows that the English projectile
 “acquires an initial velocity of 164 feet per second greater than
 “the Prussian projectile, in addition to which the head of the
 “English shell is sharper than ours. Let us make a second
 “trial, and let us use prismatic powder with large grains; let
 “us change the shape of the head of our projectiles. Let us
 “diminish the weight of the lead envelope, so that the loss of

“*vis viva* may be less when impact takes place. Do this, and the 96-pounder gun will beat the English gun.”

“We are in a position to guarantee this, for by the latest Russian accounts, a Krupp 96-pounder gun has been fired with prismatic powder, and has given wonderful results, thanks to an initial velocity, exceeding that of the Armstrong gun.* Our projectile is heavier than the English, which, with equal velocities, is a great advantage.

“Finally, for equal weights, English powder gives a pressure of 5,900 atmospheres, which is dangerous to the gun, while prismatic powder gives a pressure of 4,000 atmospheres which our gun will resist. So far as cost goes, if the Prussian gun costs twice as much as the English gun, which is of iron, it will undoubtedly last twice as long.”

New trials were then undertaken, with the view of increasing the *vis viva* of the Prussian projectiles.

They began by altering one of the 96-pr. guns, so as to make it a central-fire gun, and, on the 2nd July, fired it with charges of prismatic powder. The initial velocities were found much increased, for two Gruzon projectiles, weighing 336·4 lbs., when fired, one with a charge of 49·6 lbs. of prismatic powder, the other with a charge of 52·9 lbs., gave the former an initial velocity of 1,243·8 feet per second, the latter a velocity of 1,286·4 feet per second. A projectile weighing 295·6 lbs., fired with a charge of 52·9 lbs., gave an initial velocity of 1,345·5 feet per second. And it was found that the 96-pr., fired with such heavy charges of prismatic powder, retained very great accuracy.

The form of the Gruzon projectiles was next altered, its head was lengthened, its diameter at the base increased, and the lead envelope was replaced by several belts of lead.

As the initial velocities obtained on the 2nd July were superior to those given by the English gun, the hopes of the Prussian officers and artizans were raised. They waited with the greatest anxiety for the next competitive trial of the two guns. This took place on the 7th July, in presence of the War Minister, Admiral Jachman, the Experimental Committee, and a great number of officers.

The Woolwich gun fired two projectiles at a range of 514 yards against a 9-inch plate, the first weighing 242 lbs., pierced the plate and penetrated two inches into the timber backing. The head of the projectile remaining there, and the cylindrical portion breaking up into several portions. The second projectile also pierced the plate, and penetrated 3·9 inches into the timber backing. The head remaining fixed there, the remainder came out of the hole. Four rounds were then fired from the 96-pr. gun, with a charge of 52·9 lbs. prismatic powder, two Gruzon and one Krupp projectile, against an

* In a trial recently made at Essen with prismatic powder, an initial velocity superior to that of the Russian trials was obtained.

8-inch plate, and one Krupp against a 9-inch plate; the range being 514 yards. The heads of the projectiles having been modified to give a better penetration. The first Gruzon projectile pierced the plate, the head remained fixed in the wood, and the cylindrical part broke up into several fragments. The second Gruzon projectile pierced the shield entirely, and broke into fragments. The Krupp projectile, the head of which had been altered so as to give an angle of 60° , pierced the iron plate and the timber backing, destroying a large portion of it. It was found almost intact 100 yards in rear. Lastly, the Krupp projectile fired at the 9-inch plate, pierced it and penetrated 5·4 inches into the timber.

It would be imprudent to generalize on trials such as these, which are only competitive between one individual gun and another. However this may be, at Berlin it was considered that the trials of the 7th July with the 96-pr., fired at a range of 514 yards, proved that it would penetrate as far into an iron-clad covered with 8 inches of iron as the Woolwich gun, and that it would destroy the wooden backing more completely, making a larger hole; and it was added, that if none of the rival projectiles had penetrated the shield with the 9-inch plates completely, yet the 96-pr. projectiles had penetrated more deeply than those from the English gun.

Everywhere the results of the trial of the 7th July were received with the keenest satisfaction. The partisans of the Prussian gun looked on these results as a victory obtained, by the Prussian artillery, and Prussian manufacturers.

They pretend that the latter, left to their own resources, have excelled the English manufacturers, who have received from the State 2,000,000*l.* sterling for improving and perfecting heavy artillery. They also declare that the English have never been able to make a breech-loading 7-inch Armstrong gun, which only corresponds to guns firing projectiles of 121 lbs., while the Prussian manufacturers have constructed 96-pr. guns, throwing projectiles weighing 330·9 lbs.

That which gratified them most in these experiments made at Tegel, was that the Prussian projectiles pierced an 8-inch plate with an initial velocity of 1,286·4 feet per second, and consequently it was not requisite to have recourse to an initial velocity of 1,415 feet per second, which corresponded to a pressure of gas, dangerous for the gun.

On the 4th August new experiments were carried out to determine the effects of Gruzon projectiles, covered with a thin coating of lead, because the previous experiments, had caused the idea of replacing it with leaden belts to be given up.

They also wished to try the effect of an elongated Palliser projectile, and to compare the effects produced by the various projectiles when loaded.

The first rounds were fired against the 8-inch plate at a range of 514 yards. The 96-pr. gun, loaded with 52·9 lbs. of prismatic powder, fired a Gruzon projectile, which pierced the

plate and penetrated the timber backing, entering some inches into it. The Woolwich gun, fired with 43 lbs. of English powder and an elongated Palliser projectile weighing 242 lbs., penetrated the plate, the projectile entering 7·8 inches into the timber backing.

Loaded shells were next fired against the 7-inch plate at a range of 782 yards.

Weight of loaded Palliser shell, 250·3 lbs.; weight of charge, 5·8 lbs.

Weight of loaded Krupp shell, 277·9 lbs.; weight of charge, 7·1 lbs. of powder.

Weight of loaded Gruzon shell, 340·2 lbs.; weight of charge, 2·6 lbs. of powder.

The charges of powder for the guns were 52·9 lbs. of prismatic powder for the 96-pr. gun, and 43½ lbs. of English powder for the Woolwich gun.

The object of these trials was to compare the effects produced by the Gruzon and Krupp shells when loaded and when blind. The first was much more successful than the second, for it pierced completely the shield, and, bursting inside, would have produced serious effects.

The Krupp shell, owing to its heavy charge, produced a large opening.

The Palliser shell produced the reverse effect, or in other words, the loaded did less damage than the blind shell.

At the conclusion of these experiments, further trials were made to determine the best kind of powder to use, the weight of the charge, and the shape of the projectile. The Artillery Officers of the Committee seemed to think that the 72-pr. gun, with a calibre of only 8 inches, would compare favourably with the English 9-inch gun.

EXPERIMENTS WITH THE STEEL 72-POUNDER.

As I have already said, the Prussian Artillery had, prior to 1866, made some experimental practice with the 72-pr. gun against shields representing sections of iron-clads. For experimental practice at Tegel, M. Krupp made two steel 72-prs., with a cylindro prismatic breech-closing apparatus with a double wedge. One of these guns was heavier than those formerly made, because it was observed that the carriages were damaged; the other was strengthened with steel rings in order that it, too, might fire heavy charges. The following are the chief dimensions of these guns.

72-pr. gun not belted; cast steel; calibre, 8 inches; weight, breech-closing apparatus included, 19,854 lbs.; firing Gruzon and Krupp projectiles; weight of Gruzon shell, loaded, 220·6 lbs.; weight of lead envelope, 48·5 lbs.; weight of charge, 24·2 lbs. of Prussian powder.

72-pr. belted gun; cast-steel, 19·6 inches longer than the former gun, with a somewhat larger chamber; calibre, 8 inches; weight, with breech-closing apparatus, 14,890 lbs.; firing Krupp

and Gruzon projectiles; weight of the Gruzon shell, filled, 220·6 lbs.; weight of the lead envelope, 48·5 lbs.; weight of the charge, 19·8 lbs. of Prussian powder.

Practice was begun by firing both guns with different charges both of common and prismatic powder, to ascertain their initial velocities. It was observed that when the charges did not exceed 22·06 lbs. or 24·26 lbs. of powder, the two kinds of powder gave nearly the same velocity (1,050 to 1,083), but when larger charges were used, the velocities due to the prismatic powder increased much more rapidly than those due to the ordinary powder.

The following results were arrived at, preserving the requisite accuracy of fire, and not exceeding the strength of the two guns:—

72-pr. gun unbelted, fired with 28·678 lbs. of prismatic powder, gave an initial velocity of 1222·5 feet per second.

72-pr. gun belted, fired with 37·5 lbs. of powder, gave a velocity of 1,378 feet per second.

It was decided to employ the latter of these charges when firing against iron plates, the projectiles being similar in construction to those recently used with the 96-pr. gun.

On the 22nd September experiments were begun by firing against shields made to resemble sections of vessels.

1. Practice with the 72-pr. gun not belted; seven Gruzon projectiles were fired, from this gun at a range of 164 yards with charges of 24·2 lbs. and 28·6 lbs., some of common, and some of prismatic powder.

Results: Two shells, with 24·2 lbs. of powder, completely penetrated the 5-inch plate, and a portion of the backing; two shells, fired with 24·2 lbs. of powder, one with common the other with prismatic powder, penetrated the 6-inch plate and remained fixed in the wood. Lastly, two shells, fired with 24·2 lbs. and 28·67 lbs. of prismatic powder, completely penetrated the 6-inch plate and a portion of the backing.

2. Practice with the 72-pr. belted gun:—

This practice was carried on against 8-inch and 9-inch plates at 514 yards, with a charge of 37·5 lbs. of prismatic powder.

Results: A Krupp projectile struck the 9-inch plate and penetrated seven inches; a Gruzon projectile completely pierced the 8-inch plate and the 32 inches of timber backing, its cylindrical portion falling 200 yards below the target.

Another Gruzon projectile struck the 9-inch plate, pierced it, and penetrated 6·3 inches into the backing.

The results obtained with the belted gun are truly astonishing; and it is not to be wondered at that they have been most gratifying to the Artillery officers, who already look upon this gun as the weapon the large vessels of the German Navy will carry.

The salient point of these facts being that the 72-pr. gun, filled with 37½ lb. of prismatic powder, penetrated the target with as much ease as the 96-pr. gun did. The question of

belting all the heavy 72-pr. guns, and altering their breech-apparatus, is now being discussed, in order that they may be used as the armament of large vessels.

The officers have no doubt but that the 72-pr., which has penetrated the 8-inch plate, will also penetrate the 9-inch plate, which no projectile has yet penetrated, if Krupp's steel shells be used.

They also say, that the greater number of foreign iron-clads are covered with $4\frac{1}{2}$ to 5-inch plates only, that a very small number carry 8-inch plates, and that the 72-pr. gun, adopted as a Prussian naval gun, can penetrate almost all the iron-clads in the world.

EXPERIMENTS TO TEST THE ENDURANCE OF THE GUN.

It was determined, with the view of testing the strength of the guns to fire five or six hundred rounds from each gun, firing the Woolwich gun with $43\frac{1}{2}$ lb. of English powder, and the 96-pr. gun with 52.9 lb. of prismatic powder. These trials began on the 6th October. The 96-pr. gun, after 170 rounds had been fired, showing signs of deterioration at the breech, the wedge and the Broadwell ring were replaced.

The English gun showed, after 140 rounds, signs of deterioration at the vent. After some more rounds had been fired, a distinct longitudinal crack was observed. These trials were resumed on the 21st October. The crack extended, after the 290th round, it was 20.48 inches long, 15.48 inches in front of the vent and 5 inches behind it.

It increased still more after a few rounds, and it was thought dangerous to continue the fire.

The 96-pr. gun has fired up to the present time 406 rounds without accident or sensible deterioration.

Whilst these experiments were going on, the 72-pr., fired with 22 lb. of prismatic powder, pierced a plate of Austrian manufacture, 8 inches thick, and destroyed it entirely at the third round. The 96-pr., fired with half the service charge, pierced, without penetrating, a compound English plate, 7 inches thick, composed of 3 inches of steel and 4 inches of iron. It is probable that it would have penetrated it, if it had been fired with the full charge.

EXPERIMENTS MADE WITH A 24-PR. STEEL GUN.

The success obtained in the experiments made with steel 96 and 72-prs., thanks to the employment of prismatic powder and the improved shape given to the projectiles, caused the steel 24-pr. to be tried against the iron plates. M. Krupp, who, by his success as a manufacturer of artillery, has acquired fresh titles to the gratitude of his country, had a heavy 24-pr. made at Essen, weighing 6,710 lbs., predicting that the gun, notwithstanding its small calibre, would pierce shields covered with 5, or even 6, inches of iron. These experiments were carried out at Tegel on the 1st of last September.

Heavy 24-pr. steel gun, unbelted, 5·8-inch in calibre, breech-closed, with a double wedge on Kreiner's plan, weight 6,710 lb., firing common shell, Krupp shell, and Gruzon shell, weighing respectively 61 lb., 72·8 lb., and 76 lb.

The first experiments made were to determine the proper charge of prismatic powder, as also the initial velocity.

It was found that, with 13·2 lb. of prismatic powder, the initial velocity was 1341·9 feet per second; with a charge of 15·4 lb. the initial velocity was 1460·4 feet per second.

Five blind shells were fired, on the 1st September, at a range of 164 yards. A Gruzon shell, fired with a charge of 13·2 lbs. powder, completely penetrated the plate and the timber backing; splinters of the shell were found thirty yards in rear of the target. The four other shells were fired at the 6-inch plate. The two first were Gruzon shells; one, fired with 13·2 lbs. of powder, penetrated the plate, and entered 3·2 inches into the timber backing; the other, fired with 15·4 lbs. of powder, penetrated the plate, the point of the shell showing through the timber backing. The two other rounds (Krupp shell) were fired, one with 13·2 and the other with 15·4 lbs. of powder; the first pierced the plate, and penetrated some inches into the timber, the second penetrated both plate and timber backing. The conclusions to be drawn from these experiments are :—that the 24-pr. gun, fired with 13·2 lbs. of prismatic powder, at a range of 164 yards, would completely and easily pierce vessels plated with 5-inch iron; and fired with a charge of 15·4 lbs. would penetrate vessels plated with 6 inches of iron.

It is proposed to make another 24-pr. gun, heavier than the former, and to fit it with Krupp's cylindro prismatic breech-closing apparatus, in order to increase its power. These results, which no person six months' previously had expected, raised to the highest pitch the satisfaction of all concerned, artillery officers, naval officers, and manufacturers of iron and steel. The 24-pr. being the gun with which the screw corvettes of the German Navy are armed, even small gunboats armed with this gun might be expected to defy the largest vessels, as they are not usually plated with more than five inches of iron.

This is what everyone here unceasingly repeats; and they add, that the last of the experiments has not yet been heard. For, by following the path pointed out, namely, strengthening that part of the gun where the greatest effect of the discharge is felt, so that it may fire very heavy charges of prismatic powder, smaller guns even than the 24-pr. can be made to penetrate 5 and 6-inch plates; and that, consequently, an entire revolution in the construction of ships of war must be made.

This, then, is the present state of these important experiments in Prussia. They will be stopped during the cold season, but will again be resumed in spring.

Next Saturday, for example, the 28th November, they will

fire with a 96-pr. gun against plates placed obliquely to the plane of the trajectory. The case when a projectile strike a vessel at right angles with its surface must be exceptionable; and these trials of oblique fire are being made to determine, both the effects of the impact, and the proper shaped head the projectiles should have.

PROJECTILES.

The projectiles employed in the experiments at Tegel are well known; they are, for the English gun, the Palliser projectile, and for the Prussian gun, the Krupp projectile, made at Essen, and the Gruzon projectiles made at Bückau, near Magdebourg.

The Palliser projectiles are of hard cast-iron, but the material is hardened only for a portion of its depth; they have no lead envelope, the Woolwich gun being a muzzle-loader. The Krupp projectiles are of steel, with a head of the same metal, and a lead envelope; this last weighs 61·9 lbs. for the shell of the 96-pr., and 48·5 lbs. for the shell of the 72-pr. gun.

The Gruzon projectiles are formed entirely of very hard cast-iron; it is this which makes the difference between them and the Palliser shell, they have a thick leaden envelope.

As I have already pointed out, the form of the Gruzon projectile has been much modified during the course of these experiments. The head has been lengthened; the diameter of the base has been increased; the shape of the hollow in the shell has been altered; and lastly, an attempt has been made to give less weight to the leaden envelope, and so diminish the loss of *vis viva* at the moment of impact. The best form of head has been found to be that described by an arc, with a radius double the calibre of the projectile.

The Palliser shells have shown themselves to have less resistance than the Gruzon shells. They almost always broke on impact, crumbling into little pieces, so to speak. The Gruzon shells, on the other hand, either did not break, or if they did, broke up into a small number of pieces. The shape of the interior cavity is one cause of the greater resistance offered by the Gruzon shell, the thickness of metal being far greater towards the head than the base of the shell.

The Krupp shells are steel, and, as might be expected, are far stronger than the others. They never break, and only undergo slight alterations of shape. These projectiles excel not only on account of their greater strength, but because they take a larger charge of powder, which produces more dangerous splinters. But the smaller cost of the Gruzon shell has caused them to be adopted in place of the Krupp. A Krupp shell for the 96-pr. gun costs 9*l.* 8*s.*; a Gruzon shell costs 3*l.*; and it is allowed that Krupp shells can only be issued in small numbers for special cases, amongst the ammunition of ships of war or coast batteries. However, the officers of the Naval Artillery do not concur in this idea; they declare

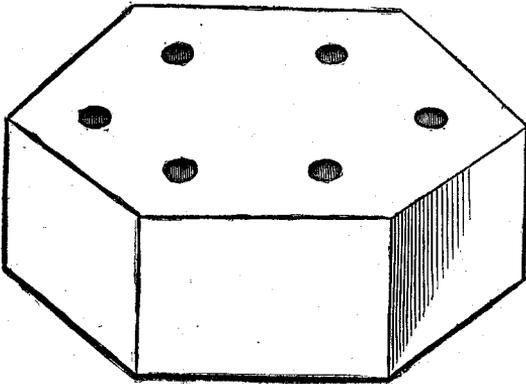
that if the Captain of a man-of-war has two kinds of projectiles at his disposal, he will always begin by using the Krupp shells, as they are the best, and that the State may just as well at once face the cost, and adopt steel projectiles.

PRISMATIC POWDER.

I do not know if prismatic powder has been studied in France. If it has not, after the important results obtained by its use during the recent experiments at Tegel, it will be a matter of great interest to study it in our turn. It has been seen that at the trial of the 2nd June the Prussian 96-pr. gun, fired with common powder, gave a result very inferior to the Woolwich gun, and that at the trials of the 7th July, thanks to the employment of prismatic powder, which gives a higher initial velocity, its superiority over the English gun was established. In fact, at the trial of the 2nd June, when the 96-pr. gun was fired with 49·7 *lbs. of common Prussian powder*, the initial velocity was only 1151·9 feet per second, when the same gun was fired on the 7th July with 53 *lbs. of prismatic powder* the initial velocity was raised to 1414 feet per second; and notwithstanding this, the pressure of the gas during the second discharge was 1000 atmospheres less than during the first. It is therefore an incontestable and important fact that prismatic powder, while its action on the gun is far less destructive than common powder, allows a heavier charge to be used, and gives to the projectile a higher initial velocity.

At present the Prussian Government obtains prismatic powder from M. Krupp's manufactory at Dusseldorf, but it will be made on a large scale at Spandau.

Prismatic powder is only common powder compressed into cakes of a hexagonal shape. Each mould has six little cylinders on it, which leave in the cake as many holes, piercing it from one side to the other. A grain of powder is thus a flat hexagonal cake pierced with six holes. The dimensions are 2·7 inches long and $\cdot 975$ inch thick (*vide* sketch, full size). To make a charge the grains are laid in beds.



It may be safely predicted that at Bückau the employment of prismatic powder will be profoundly studied. It offers a new and interesting field for study. The size, the shape, the weight, the number of openings in the cakes are all points involved in the subject, and will doubtless be found to vary with the calibre of the different guns used. It may be even requisite to employ for each gun a special prismatic powder, to obtain the maximum useful effect, without endangering the gun.

BOMB-PROOF AND IRON SHIELD CASEMATES TO PROTECT GUNS MOUNTED IN COAST BATTERIES.

I can only give an imperfect description of the bomb-proof iron shield casemate, which has been made at Tegel, and which is proposed for coast batteries, as I have not been allowed to see it. M. Gruzon is the inventor and constructor of this casemate. He has built enormous furnaces at Tegel, capable of casting masses of iron weighing 165,000 lbs. (the largest ever yet cast) to form one of the piers of the casemate. He is reported to have succeeded capitally. The weight of metal employed being in case of necessity 198,000 lbs. It may be said generally that this shielded casemate is intended to protect a steel 96-pr. breech-loading gun. It is composed of two vertical piers parallel to the axis of the gun, a bomb-proof roof covering them, with a convex shield placed in front, and provided with an opening to admit the muzzle, and, lastly, a door to close the casemate at the rear. These various parts are formed of enormous blocks of cast-iron, similar to those cast on the 9th October last. The blocks which compose these two piers are attached to one another by enormous bolts, so that the blow of a projectile striking the revetment, cannot shake the mass or wound the gunners. The shield is $27\frac{1}{2}$ inches thick. The opening is only sufficiently large for the muzzle of the gun, and the interior space allows the gun to be worked. The door which closes the casemate is of gigantic dimensions. M. Gruzon who is not a military man, and who is not backward in claiming all imaginable merits for his invention, says this door will protect the gunners completely from surprise, and render them secure from anything but famine, or a regular siege.

As the muzzle of the gun has only a very slight movement in the embrasure, a special carriage has been made to allow a sufficient lateral range. When this casemate is completed, it will be further protected by a strong earthen epaulement.

The experiments will be of two kinds:—

1st. They will practice from the casemate with the gun it is intended to protect, and

2nd they will fire against the casemate with the heaviest guns to test its resisting power.

Looking at similar constructions and proofs, one is led to ask if the bounds of what is reasonable and useful are not passed,

and if the advantages to be obtained from such constructions are not more than counterbalanced by the enormous expense they entail? Will it be possible to establish on coasts, where the ground at favourable points is generally very soft, foundations sufficiently solid to support such blocks of cast-iron?

FIELD GUNS, BRONZE.

My report of the 22nd July gave an account of the trials made by the Experimental Committee with bronze field guns. I also reported on the 31st August the unanimous opinion of the Experimental Committee that bronze should be used in the manufacture of field guns, and I added that the decision of the "General Inspection of Artillery" was not doubtful. This Superior Committee has approved of the advice given by the Experimental Committee last September. The authority of the King is now all that is required.

Contrary to what I was informed, no more bronze guns, are now being cast. During the experiments, the charges and velocities of these guns have been—

6-pr. gun	..	{ Charge, 2·4 lbs.
		{ Initial velocity, 951 feet per second.
4-pr. gun	..	{ Charge, 2·2 lbs.
		{ Initial velocity, 1,209 feet per second.

The Experimental Committee continues to try many experiments with these guns.

After having fired 2,000 rounds with the gun 5 feet 1½ inches long, and weighing 660 lbs., they began gradually to diminish the thickness of metal, lightening the gun by 128 lbs. The bronze is, nevertheless, so malleable, notwithstanding the great number of rounds fired, that it acts perfectly.

I do not know if the Prussian regulations of the 5th June, 1867, on the subject of civil employés, is known to the Minister for War at Paris. I attach a copy to this Report; it is interesting to compare it with the Decree of the 24th October, 1868.

MILITARY STUDY OF RAILWAYS, AND THE ORGANIZATION OF THE OFFICERS OF THE RESERVE AND LANDWEHR.

Report of the 12th December.

I. MILITARY STUDY OF RAILWAYS.

It is known that at the beginning of the year 1866 the Prussian army was much better prepared for war, than the Austrian army, and that this was one of the chief causes of the advantages it obtained. I cannot draw too much attention to the continual care that is taken here to be ready at any moment to make war with every prospect of success.

The German language has even a word, *Kriegsbereitschaft*,

to express the state of preparation for war that an army, which fulfils its mission, should be always in. To keep the army continually ready for war, and that without neglecting one of the numerous small details that such a state of things requires, is the object towards which all the efforts of the Prussian Government tend.

This is the cause of the continual labour on the part of every one, from the King to the junior Sub-Lieutenant, or employé. This is the cause of the continual studies, chiefly on the part of the Staff Officers, of the War Minister, and the various committees. This is the cause of the experiments of every kind; this is the cause, in a word, of the great military activity which reigns in all North Germany.

Amongst the questions, the study of which keeps the State ready for war, that of the railways particularly attracts the attention of Government.

I have already reported that an enquiry, was this year made by a Committee of Staff Officers with the view to the examination of all the railways in North Germany, and drawing up a report on the service they, in a military point of view, can render. Quite recently M. Delbrück, who succeeded M. Bismarck as Federal Chancellor, has brought before the Federal Council a proposition to the following effect:—

“The Federal Council is asked to direct that a report, on a particular form, giving an account of the resources of every kind possessed by the railways of the North German Confederation for military purposes be prepared. This report to be furnished to the Federal Chamber every two years, beginning in January 1870 for all railways then in existence, and on the opening of all railways which may be hereafter constructed.”

The form referred to includes a vast number of questions having reference to the extent and direction of the railways; their gradients; the quantity of rolling stock; the configuration of the adjacent country; the roads, not railroads, which run close alongside or cross the railways; the bridges; the possibility of fortifying certain points, or destroying others. It asks, also, the name of the chief stations; their area; the most favourable places for concentrating troops, and bringing them to the stations. The laws, bye-laws, rules, and military tariff of the lines. Finally, the amelioration or alterations proposed for the future.

I would remark that Germany, prior to 1866, took all these precautions. The German Federal Assembly caused a similar report to be furnished each year, and I merely mention M. Delbrück's proposal to show the great importance attached here, to the study of railways in a military point of view, and as further proof of the incessant vigilance of the Prussian Government.

II. ORGANIZATION OF OFFICERS OF THE RESERVE AND OF THE LANDWEHR.

I have hitherto omitted to refer to an important measure, determined on last summer, and which was the subject of a Royal Edict, dated 4th July, 1868.

It relates to the position of officers on furlough, that is to say, to the officers of the Reserve, and those of the Landwehr, (officers and soldiers of the Reserve and Landwehr live at home; they are said, in Prussia, to be officers and soldiers on furlough — *en position de congé*). Prussia has not a sufficient number of officers, regard being had to the enormous force at her disposal. The cause of this is her whole armed force does not fall, far short of a million of men, and the officers are drawn as much as possible from the nobility and gentry (*de la grande et de la petite noblesse*).

Frederick the Great, influenced by his profound knowledge of men, formed the body of officers on these conditions. "The nobles alone," he was accustomed to say, "have honour in their bellies;" and his successors have all remained faithful to this precept. The King said to me last summer, "I am very proud of the character of my corps of officers, and I seek to maintain it. It is composed of the élite of the nation in social position, education, and instruction, and we find it quite natural that they should command the other classes."

In France our social state is so confused, and our military organization so defective, that we unfortunately cannot apply this just and reasonable principle; but the application of any principle, however sensible, usually produces some inconvenience. The inconvenience, which is a natural sequence of the Prussian system of recruiting the corps of officers, is felt chiefly after a long and bloody war. For how then is it possible to obtain officers from the ranks of the nobility alone? Thus the Great Frederick found, particularly after the great disasters of Kollin and Kunersdorf, much difficulty in filling up his losses in officers. This deficiency in officers, which is inherent in the principle on which they are recruited, was felt all through the wars of the Empire. Since 1815 it has increased with each successive enlargement of the Prussian territory, and more especially from the institution of compulsory military service, which at the present time gives the King the control of such enormous armies. It may consequently be understood how Prussia has been compelled to depart from the principle which requires, that all the officers should be taken from the ranks of the nobility; and practically, the officers of the artillery and engineers, belong at present chiefly to the middle classes.*

* Bourgeoisie.

However, as the corps of officers is in general recruited from the same families at the present day as it was 100 years ago, it may be said that it is now the same as it was in the days of Frederick the Great; with this difference, that it has been stretched and extended, so to speak, in order that it may be disseminated throughout a large army.

In 1866, when the war did not last more than two months, the want of officers was felt; and I would refer here to what I reported on the 15th October, 1868, of the numerous changes of officers which had taken place from the Line to the Landwehr, and *vice versa*, and of the confusion thus introduced amongst the corps of officers.*

After the war, this state of things produced serious thought here; and it was asked, was there no method of avoiding this confusion at the moment of mobilization, and how a corps of officers could be maintained during a campaign of long duration. The order of the 4th July, 1868, is an attempt to solve this problem; I send a copy of it herewith.

It is requisite to know, in order that it may be understood, that hitherto the position of officers of the Reserve, was not distinct from that of officers of the Landwehr, neither were their relations to the Regular Army defined. *The Edict of the 4th July defines their position, and really creates a body of Reserve officers.* It should be translated, for it is very interesting to know all its details. I confine myself to pointing out the principal points.

1. Officers on furlough are, for the future, intended when an augmentation of the effective strength of the army, or a mobilization takes place, to complete the number of officers required, and they will be employed as instructors for the men of the Reserve and Landwehr.

2. The length of service of officers, whether of the Reserve or Landwehr, is the same as that of the men, that is to say, an officer remains in the Reserve until he is 27 years of age, and in the Landwehr from 27 to 32 years of age.

3. The number of officers appointed to the Reserve and Landwehr is unlimited.

4. When an officer is appointed to the Reserve, he is posted to a company in the Regular Army, and he consequently bears its designation. A Landwehr officer, on the other hand, is known only by his Landwehr title.

5. Officers of all arms living in a Landwehr Battalion district on furlough compose the corps of officers of the district, under the orders of the Commandant of the district.

6. The persons who may be appointed officers of the Reserve, &c., *vide* the Edict.

7. Every person proposed as a Landwehr officer is presented

* *Vide* page 126, Report of the 19th December, 1868, for fuller details about the Corps of Officers.

to the corps of officers of the Landwehr battalion by the Commandant, &c., *vide* the Edict.

I attach to this report—

A copy of the Edict of the 4th July, 1868.

A supplement of the Staats Anzeiger of the 28th November, 1868, which contains an official list of the German fleet.

CHAPLAINS OF THE TWO RELIGIONS; WINTER DRILL; NEW ARMY LIST.

Report of 19th December, 1868.

I. CHAPLAINS OF THE TWO RELIGIONS.

The North German Confederation (the Grand Duchy of Hesse not included) has a population of 29,500,000 inhabitants; 19,500,000 belonging to the Reformed and 9,500,000 to the Catholic Creed; or in a proportion of two to one. This proportion is preserved in the Army of the Confederation, if the number of soldiers of the two creeds be compared; consequently, the Army must have both Lutheran and Catholic Chaplains. The organization of the first has never caused any difficulty, but it has been different as regards the Catholic Chaplains. The Prussian Government has been compelled to struggle with what are termed the pretensions of the Holy See. On one hand, the Pope desires to enjoy absolute power in all that concerns the appointment of Army Chaplains; on the other, the King of Prussia, as sovereign of a country where the reformed religion is predominant, cannot consent to allow the Pope too great latitude. A dispute, which has lasted three years, and has only recently terminated, has been the consequence. A Papal Bull, addressed to the Prussian Government, and not yet published, settles everything to the satisfaction of both parties. The Holy Father, with the concurrence of the King, has appointed Monseigneur Nanczanowski, Bishop *in partibus*, Chaplain in Chief to the Army, conferring full powers on him. This Prelate appoints the Catholic *employés* in the Army; but always on the condition of consulting with the Ministers for War and Public Worship. All conflicts may thus be avoided, if both sides think only of the good of the service.

The chaplains of both creeds are organized as follows:—

Divisional Chaplains.—The Army of the North German Confederation is formed of twenty-four Divisions of Infantry (the Hessian Division not included). Each Division has on an average three; and, consequently, each Corps d'Armée has six Lutheran and Catholic Chaplains. But the proportion is not constant for all Corps d'Armée. In those which are

recruited in provinces where the Lutheran Creed prevails, as the 1st (Province of Prussia) and the 3rd (Province of Brandenburg), the number of Protestants is far greater than that of Catholic soldiers, and these corps have not a single Catholic Chaplain; while other two corps, the 5th (Province of Posen) and the 8th (Province of the Rhine), are chiefly composed of Catholics. In short, for the twenty-four Divisions there are fifty Lutheran and twenty-one Catholic Chaplains—seventy-one in all.

Each minister and each chaplain is helped by a curate. The pay of these ministers and chaplains varies, according to their rank in the army, from 75*l.* to 120*l.*; and is the same for equal grades for both creeds.

It was at one time proposed to reduce the pay of the Catholic Chaplains, because they have not, as the Protestant clergy have, to support families; but this idea was given up, lest the Government should be suspected of favouring one religion at the expense of the other.

In each Corps d'Armée, whatever may be the number of men of each creed, one of the Protestant Divisional Chaplains, generally the oldest, has the title of first minister, or first preacher (*Oberprediger*), and has a salary of 155*l.* to 180*l.* yearly. The Chaplains General of both creeds receive 330*l.*; the pay of the curates of both creeds is 30*l.* a year. The chaplains and curates have a lodging allowance of 82*l.* for the Chaplains in Chief, and 19*l.* to 22*l.* for the subordinate ranks.

Garrison Chaplains.—In addition to the seventy-one Protestant and Catholic Chaplains, there are fifteen Protestant and twelve Catholic Chaplains, termed Garrison Chaplains, who belong to the head-quarters of corps in large fortresses, such as Magdebourg, Danzig, Graudenz, Coblentz. They belong to the army, and cannot exercise their functions elsewhere. They have the same pay as the Divisional Chaplains, and have each a curate, but are not called on to take the field with the army, and may be selected from elderly infirm men; while the Divisional Chaplains, who have to take the field, must, if requisite, ride and endure privations.

These two descriptions of chaplains, viz., the Divisional and Garrison Chaplains, belong to the Army; in addition to which, there is a certain number of pastors who, without being Army Chaplains, are, notwithstanding, paid from the War Estimates.

They are those who, in small districts, are entrusted with the religious care of small detachments. They receive for this, pay from the War Office, and are termed Civil Clergy, to distinguish them from the regular Chaplains.

The cost of the Civil Clergy is 1,890*l.*

When the Army takes the field, the two Chaplains-General, Protestant and Catholic, attach as many additional clergymen as they think requisite. A Protestant clergyman told me that a perfect swarm of them were attached at the outbreak of the war of 1866; almost all followed the army. The State

supplies, each for himself and his curate, with two draft horses, one carriage, and one driver.

The figures, which I have given in the report, give the pay, and allowances of chaplains as at present fixed. Almost all the old salaries have been increased. The War Estimates have been consequently raised by about 1,600*l.*; or, in other words, the military chaplains, who cost, in 1868, 13,500*l.*, will cost, in 1869, 15,200*l.*

II. WINTER DRILL FOR RESERVE AND LANDWEHR MEN.

The 19th of last November, the King signed a cabinet order which demonstrates what care is taken in this country that men on furlough lose as little as possible of the military instruction they have acquired during their three years of active service. As is known, the men of the Reserve are bound to take a part in two trainings, each not exceeding two weeks, during their period of service in the Reserve. And the men of the Infantry of the Landwehr may be called up twice for training, for periods of 8 to 15 days each, during their period of five years' service in the Landwehr. All the regulations on the subject, and in general all those concerning the organization of the Landwehr, and the duties of men on furlough, are contained in the order of the 5th September, 1867, a copy of which I attach. It happens that hitherto many men have not taken part in the summer training, being exempted for the various reasons stated in the 53rd paragraph of the order referred to. The object of the cabinet order of the 19th November, 1868, is to remedy the defect. It directs that the men on furlough who do not participate in the summer training, shall be assembled and trained in January and February 1869, in accordance with paragraphs 49, 50, 51, of the order of the 5th September, 1867. The Minister for War has recently brought this decision to the knowledge of the Army, adding that in future these winter exercises will take place each year.

III. NEW ANNUAL ARMY LIST, 1869.

The Germans love statistics. There have been several criticisms on the New Prussian Annual Army List of 1869.

People are gratified by comparing it with that of 1859, which gives an idea of the increase of Prussian military power during the last ten years.

Firstly, comparing the forces of Prussia in 1858 with those of Prussia of 1868, which embraces Hanover, the Duchies of the Elbe, electoral Hesse, Nassau, and Frankfort, the comparison stands as follows :—

Increase ..	{	Infantry, 168 Battalions of the Guard and Line.
		" 67 " of Landwehr.
Decrease ..	{	Cavalry, 168 Squadrons of Guard and Landwehr,
		" 136 " of Landwehr.

It may be remarked that amongst the increase, 41 battalions

and 34 squadrons only, form the military force of the countries annexed since 1866 by Prussia. Prussia proper has now 127 battalions of Guard and Line, and 150 squadrons of Cavalry, more than she had in 1858.

Secondly, it is known that Prussia has concluded with all the States of the North German Confederation, except the Duchy of Brunswick, and the Kingdom of Saxony, military Conventions, in virtue of which the military forces of these States are really an integral part of the Prussian Army. The new Army List includes these. They are—

22 Battalions of Infantry, viz., 89, 90, 91, 93, 94, 95, 96 Regiments, and the 13th Battalion of Rifles.
15 Squadrons, viz., 17, 18, and 19 Regiments of Dragoons.

If the forces now swallowed up in the Prussian Army are taken into account the comparison will be as follows:—

In 1858 ..	{ Infantry, Guard and Line, 136 Battalions ; Landwehr, 116 Battalions ; total, 252 Battalions. Cavalry, Guard and Line, 152 Squadrons ; Landwehr, 136 Squadrons ; total, 288 Squadrons.
In 1868 ..	
	{ Infantry, Guard and Line, 324 Battalions ; Landwehr, 182 Battalions, of which 14 belongs to the smaller States ; total, 506 Battalions. Cavalry, Guard and Line, 334 Squadrons ; Landwehr, 0 ; total, 334 Squadrons.

Thus the infantry has been more than doubled during the ten years ; and it is the same with the Cavalry, if account is taken of the 136 squadrons of Landwehr Cavalry which were suppressed only in 1867.

Thirdly, as the Duchy of Brunswick has not made a military Convention with Prussia, its contingent has not been included in the Army List. It is composed of the 92nd regiment of Infantry, the 1st regiment of Landwehr, and the 17th regiment of Hussars.

The 12th Corps d'Armée (Kingdom of Saxony) and the 25th division (Grand Duchy of Hesse) are neither included in the Army List.

These three States have—

42 Battalions of Line.
29 " of Landwehr.
45 Squadrons.

If these forces are added to those mentioned before, Prussia has now, not including men as substitutes or for depôts, 557 battalions (Guard, Line, and Landwehr), 379 squadrons (Guard and Line) ; or, 325 battalions and 91 squadrons more than she had in 1858.

The statistic-mongers have not failed to note how much the middle class element has, during the last ten years, invaded the corps of officers. Practically, amongst the 13,000 officers of the Federal Army not more than one-third belong to the nobility, the other two-thirds have come from the middle

classes.* Hence, it can be no longer said that the corps of officers is recruited from among the nobility. This large increase of the middle class element is the consequence of the fusion into the Prussian Army of the contingents furnished by the small States of the North German Confederation.

I give the following table, which is interesting. There are in the Army—

Generals	{	Infantry	49	} Total 1,382	
		Lieutenant	57		
		Major	99		
Colonels	{	Infantry	146		
		Cavalry	55		
		Artillery	32		
		Engineers	17		
	{	Train	3		
Lieut.-Colonels			228		
Majors			696		
Captains and Lieutenants			10,000, about.		

The nobility are more largely found in the Cavalry and Infantry, in the proportion of 92 per cent. The middle class in the Artillery and Engineers in the proportion of 75 per cent.

Amongst the 1,382 General and Field Officers, there are 366 Officers who belong to the middle classes, viz. :—

2 Lieutenant-Generals.
5 Major-Generals.
46 Colonels.
78 Lieutenant-Colonels.
235 Majors.

and amongst these, 171 belong to the Artillery and Engineers.

REDUCTION OF THE PERIOD OF SERVICE TO 12 YEARS, AND A REMARK ON THE NAMES OF PLACES.†

Report of the 14th June, 1869.

I. REDUCTION OF THE PERIOD OF SERVICE TO 12 YEARS.‡

The law by which the length of military service in Prussia was reduced from 19 to 12 years bears date the 9th November,

* Bourgeoisie.

† We have, dated 1869, nine Reports from our Military Attaché, that of the 15th July is entitled: "*The time requisite for the mobilization of the Corps d'Armée of North Germany, and the concentration of her Army on the frontier of France.*" Colonel Stoffel points out the practical details of the mobilization of the different arms, Brigades and Divisions, as well as the time requisite to concentrate on one point several Army Corps; and he demonstrates that Prussia could, in 3 weeks, mass on our frontier several armies, each of 100,000 men. Another Report, dated October 1869, treats of the alterations in the Prussian rifles which were being carried out when the war of 1870 broke out. We have not deemed it desirable to publish these two Reports, as from their technical nature there is little to interest the general reader. We publish five of the reports of 1869.—[ED.]

1867. This reduction consists, as is well-known, in the number of years service in the Landwehr, which has been reduced from 12 to 5; but, as I then pointed out, this important measure was by no means intended to mean that all the Landwehr men who, when the law was promulgated had served 12 years, were to be dispensed with. Prussia by no means intended to deprive herself of seven Landwehr contingents. On the contrary, the Government proposed to liberate gradually, and according as circumstances might permit, the various Landwehr contingents of more than 12 years' service, beginning with the oldest.

At the present moment, by successive discharges, by anticipation as it were, there are no Landwehr men in the army older than 36 or of 16 years' service, and the measure that is proposed for the future, and to which I draw attention, is the following. Beginning in the autumn of this year (1869), two Landwehr contingents will be discharged each year, so that the reduction of service to 12 years will be accomplished in October 1872. This will be better seen by the following Table:—

Dates of Discharge.	Number of Contingents Discharged.	Length of Service of these Contingents.	Age of the Men.
	Contingents.	Years.	Years.
Autumn, 1869	2	16 to 15	36 to 35
" 1870	2	15 „ 14	35 „ 34
" 1871	2	14 „ 13	34 „ 33
" 1872	2	13 „ 12	33 „ 32

As will be seen, the army will after October, 1872, no longer include men older than 32 years, and the reduction of the duration of service to 12 years will be completed. From autumn 1873, only one contingent of the Landwehr will be discharged annually, that composed of men who have completed their 32nd year.

It should be clearly understood that this applies only to the provinces of Prussia proper, or to 81 regiments of Infantry if this arm only is considered. In the recently annexed provinces temporary arrangements, will continue for some time. Thus, in these provinces, the period at which men pass from the Reserve to the Landwehr is not yet fixed, but is subordinate to the consideration that the number of reserve men will allow the various corps to be completed to a war footing, if requisite.

Landwehr Officers who, on the 1st October, 1869, have 16 years' service, are entitled to ask for their pension; the same for those who have 15 years' service in 1870, and so on.

Generally, it should be observed, that the year 1869 marks the period when Prussia will have her military institutions on a normal footing, which the war of 1866, the reforms introduced,

and economical motives, have hitherto prevented. It may be remarked, for example, that in 1866 the Government made two levies of recruits, one in anticipation in spring, the other in October. A part of the first has already been sent to the reserve (autumn of 1868), even though it had not completed its three years' service with the colours; the remainder of the first levy, and that of October 1860, were sent to the reserve this year (1869).

Furloughs in anticipation, have been given for three years, to very many men, but it is proposed to return to the normal state beginning next autumn, that is to say, furloughs in anticipation will no longer be given (except to 5 or 10 men per company) as was done prior to 1866.

The custom before 1866 was to train each year in autumn two Army Corps in great Divisional and Army Corps manoeuvres. This, except for the Guard, did not take place in 1867 or 1868. This year the ordinary custom, which directs two corps to be trained in great manoeuvres, will be adhered to next autumn with the 1st and 2nd Corps.

This year the Landwehr will be trained in greater numbers than usual, for the following reasons: 1st. The Landwehr has only been armed with the needle rifle during the last year, and it is requisite to familiarise it with the new weapon. 2nd. The division of the country into Landwehr battalion districts has been altered. 3rd. The number of battalions of Landwehr has been increased (there being 20 more now in Prussia than before 1866).

The battalions will be composed of 300 men; this for 102 battalions will give 30,000 men who will this year take part in the training for 8 to 15 days, directed in the paragraphs 6 and 7 of the law of the 9th November, 1867.

II. NOTE ON THE NAMES OF PLACES.

Amongst other faults that the Germans reproach us with, ignorance of geography and history are often mentioned.

Looking at these things more closely, one sees that the Germans might be a little more modest. But it is true that in everything they do, study or publish, they display much more care than we do. Their books, for example (I speak here of military books of history and geography), do not make, as ours do, innumerable mistakes in proper names, both of persons and places. I would not insist on this detail if it were not of importance, for independently of such blunders being discreditable to a book, are they not often a cause of loss of time to the reader who seeks to follow the detail on a map, and likely to impart erroneous information?

How many officers are there who understand the words *circumvallation* and *contravallation*, because in books published even by authority, these words are used as synonymous? Well got up books, such as the Commentaries of Napoleon I.,

printed at the Imperial Stationery Office, are full of faults of proper names, and a Prussian Officer told me yesterday that when reading the account of the events of 1813, in the memoirs of Marshal Marmont, he lost an hour looking on the map for the names of two places situated in Prussia, so much had the spelling of the names been altered in these memoirs.

These remarks were suggested to me by reading the lectures given at the *Depôt de la Guerre* at Paris. These lectures are intended to be read and studied by a great number of our officers. Is it not to be wished that in the interests of the healthy impulse given to military study two years ago, that no detail should be neglected? Now, in the lecture "on the Military Organization of Germany" at page 9, where the fortresses of Germany are enumerated, the constant error of all French military books is repeated, by which the *tête de pont* of Mayence is called *Cassel* in place of *Castel*. This *tête de pont* is too important a place for those of our officers who study these lectures not to know its proper name, even, perhaps, confounding it with Cassel, capital of Lower Hesse.

THE LAW OF THE 1ST FEBRUARY, 1868, AND THE PROSPECT OF WAR.

Report of the 12th August, 1869.

I. The Law of the 1st February, 1868, upon the Recruiting of the Army, and the Organization of the National Guard "Mobile."

The War Minister has asked me to inform him, what is thought in Prussia of our new law of military organization, dated the 1st February, 1868, more especially of the institution, of the National Guard "Mobile." I replied in my report of the 29th March, 1868; but my replies were very brief, as I proposed to report in person on the subject in Paris. I return now to this important question.

When the law was promulgated last year, it was at first thought at Berlin that its application would augment the military resources of France; but, after a closer study, the opinion at first conceived is now greatly modified. In Prussia, where the application of the principle of compulsory service, has taken deep root in the country, and contributed so materially to its greatness, they generally consider our new law of military organization as a step in advance, so far as it enunciates, although only for war, the principle, so just, so moral, of compulsory military service, for all citizens. But they cannot understand the inconceivable inconsistency, by which a statesman having admitted the principle can stop

there. For the law does not allow the National Guard "Mobile" to receive any military instruction. Looking at it in a broad point of view, it is thought nonsense, or rather an abortive law, adding nothing to the power of France, but rather on the contrary, weakening her resources. As will be seen, this view of our new military organization, a view taken here by practical reflecting people, is unfortunately too true.

This law having put at the disposal of the country, as an auxiliary to the army, a force of 500,000 men, under the name of National Guard "Mobile," adds this indefensible Article (Article 9):—

"The young men of the Guard "Mobile" have (except absent with leave) to attend—

"1. The drills which take place in the parishes where they live or are domiciled.

"2. The company or battalion meetings which take place in the company or battalion districts.

"3. Each drill or meeting must not cause the young men who attend it a greater loss of time *than one day*.

"These drills and meetings can be repeated only fifteen times a year."

One is perfectly confounded, when one thinks that a proposal so absurd could have been brought forward and seriously discussed by the Parliament of a great country, and that a Government could be found willing to consent to accept and introduce such a law.

How! Was there not one man in the Assembly who could say to his fellows, "This law that you are going to enact is a deception. Be assured, you deceive yourselves, you deceive France. How! You wish to increase the military force of the country by several hundreds of thousands of young men, under the name of National Guard "Mobile," and you, at the same time, take away every means for instructing these young men! For what military instruction is it possible to give a man who, in the greater number of the departments, must, in one single day, go four or six miles in the morning from his home to the place of assembly, and return the same distance at night; and who, in the same day, must be present at the roll calls, parades of all kinds, issues of arms, clothing, and equipment? Do you not see that it is a physical impossibility to find in this same day a single quarter of an hour for drill, properly so called? If you do not wish that the young men of the National Guard Mobile should spend more than one day at such things, then alter the proposal from top to bottom, or return simply to the law of 1832. For I again repeat, what you propose is impossible—is simply nonsense."

And the speaker who, I suppose, to convince the Assembly, would detail what takes place in Prussia at the trainings of

the Reserves and Landwehr. Here I will invent nothing, but I will simply confine myself to report what every officer and soldier in the Prussian Army knows.

In Prussia, the men of the Reserve, and those of the Landwehr, who live, as is known, at home, undergo, during their period of service in the Reserve and Landwehr, trainings, the object of which is to maintain amongst them, the military instruction that they have previously received during the years they spent with the colours.

By Paragraphs 6 and 7 of the Law of the 9th November, 1867, every man of the Reserve is bound to undergo, during his service with the Reserve, two trainings, each of which is not to exceed a fortnight; and the men of the Infantry of the Landwehr can be recalled twice, during their period of service with the Landwehr, for trainings of eight to fifteen days by companies or battalions. Now things are carried out as follows:—The first day, the men leave home in the morning, and go to the head-quarters of the district where the training takes place (this is an average distance of five to six miles); when they arrive, they answer to the roll call, are marched to the clothing store, where they receive their clothing; then to the armoury, where they get their arms and equipment. These various operations, which take longer than people are generally inclined to think, are hardly finished in the afternoon; and this first day is never employed in drilling the men, who are tired with the distance they have come, and the time they have to stand on parade.

In addition to which, the second day is often also lost for drill, because the assembling of the men, the roll calls, and the issues of all kinds are not completed the first day.

To which must be added, that the men come from various portions of the district, and pleased to see one another after the lapse of some time, meet in groups the day they arrive at the public-houses, where they sing and get drunk, which renders them unfit for drill the following day.

The officers generally wink at this, and the second day is likewise looked on as lost for drill, and manoeuvre, and they do not begin until the third day.

This is the course of events in Prussia, a country accustomed to these annual drills for many years. The men, as is seen, spend all the first day in marching, in answering the roll-call, receiving their clothes, arms, and equipments; hardly do the drills begin the second, or even the third day.

Is it not evident that in France the young men of the National Guard "Mobile," who are summoned to drill in the parishes where they reside, or to the meetings in the districts of their companies and battalions, will find themselves the first day placed in exactly the same condition as the men of the Prussian Reserve or Landwehr? Or, in other words, must they not first make a march (usually five to six miles) to reach the named place, and then must be present at parades,

roll-calls, issues of arms, &c.? If, then, it is remembered that Article 9 of the new Law requires that, after all these various operations, these very men must, the same day, repeat these operations, in order that they may go home, it must be acknowledged that it is physically impossible that any drill can take place that day. Nothing more is requisite to show that, so long as Article 9 is in force, the institution of the National Guard "Mobile" is a deception.

But, say some, the National Guard Mobile may be drilled during war itself; to which it is only requisite to reply—*How, if the war be of short duration; if France is smitten with sudden disaster at the outset, and finds herself suddenly invaded, how can you then give these young men, assembled in haste, that cohesion, discipline, and instruction, which is so requisite?*

Thus common sense condemns at once our new law of military reorganization, so far as the National Guard "Mobile" is concerned; yet this law has been enacted by the Chambers!

Thus one has seen (an incredible thing) a great nation give itself solemnly, by means of its representatives, an increase of 500,000 men for the defence of the country, and at the same moment, by a stroke of the same pen, so to speak, deprive these men of all means of obtaining military instruction.

I do not believe that any assembly in any country ever gave such a flagrant proof of inconsistency and levity.

How can we be astonished after this if foreigners criticise us severely?

How can we be astonished that here, and in all Germany, they tax the French nation with ignorance and vain presumption, and that they proclaim, with ill-disguised satisfaction, in books seriously written, the downfall of the Latin races? I declare that all intelligent and studious officers (and the Prussian Army has a great number) with whom I have spoken on our new military law, judge it with great practical sense to be simply without results of any kind.

But we, we do not limit ourselves to making a defective law. From presumption, as much as from ignorance, we deceive ourselves, and declare it to be perfect, and superior to all others! It is sad to say it, but it is nevertheless true, for any one who has lived amongst foreigners and followed the development, both moral and intellectual of other nations for 50 years, that the French, notwithstanding the eminent qualities for which they are remarkable, live above all others in ignorance and presumption, each of these faults tending to increase the other. These words continually recur when one compares France with other countries, especially Prussia, so well-taught, serious, and keen for her interests.

One proof amongst a thousand is furnished to me by what is written in France upon the new military law, and upon the institution of the National Guard "Mobile," in particular.

They write in the military newspapers, and elsewhere, and they say in the army, that the National Guard "Mobile" will give

France a very formidable force, and that it will equal, if it does not surpass, the Landwehr of the Confederation of North Germany. It is deplorable, when men thus deceive themselves, from ignorance, or lie to themselves from presumption.

My duty necessitates that I should point out these dangerous errors, for the ignorant and vain crowd, are only too much disposed to believe those who flatter them. I consider this duty as imperative, because I think a war between France and Prussia inevitable, as I shall seek to demonstrate hereafter. I therefore say that no comparison, can possibly be made between the Landwehr, composed entirely of trained soldiers, in the prime of life, taught the trade of arms, well disciplined and completely organized, and the National Guard "Mobile," composed of young men, to whom the law refuses any military training.

Perhaps it may be useful to repeat what I have already pointed out in many of my reports to the War Minister, what the Landwehr really is.

The Landwehr is not, as so many persons in France believe, a kind of national guard like ours, or a body of old soldiers disused to service, and for the most part married.

As is known, all able-bodied citizens of the North German Confederation owe military service to the State for 12 years (from 20 to 32 years of age):—

3 years with the Colours (20 to 23.)

4 years with the Reserve (23 to 27).

5 years with the Landwehr (27 to 32).

Thus giving 12 contingents for the whole of the Federal forces. The first seven contingents form the active or field army, while the five last, still preserving the name of Landwehr, are intended for the defence of the interior, and do not act with the Regular Army, except in case of extreme necessity.

The men composing the Reserve, as well as those of the Landwehr, live at home on furlough. Both may marry without leave. The number of marriages is small in the Reserve, because the men know that they are liable to be recalled in case of mobilization.

They are more numerous amongst the Landwehr. I have in a previous report given the proportion of married men in both the Reserve and Landwehr.

Reserve men must, during their period of service in the reserve (four years), undergo two trainings, each of which lasts only two weeks; and the men of the Infantry of the Landwehr may be called up for training, thrice during their period of service with the Landwehr, by companies or battalions; these trainings must not exceed 8 to 15 days each.

The North German Confederation will in 1870 have 320,000 Landwehr men.

I have repeated these leading points the better to show that these 320,000 Landwehr men, are all ready-made soldiers, who have served three years with the colours (from 20 to 23 years),

and have thus acquired not only military ideas and discipline, but also that thorough training that Prussia knows how to give her troops, have then spent four years at home (23 to 27), during which time care has been taken to maintain and confirm all these acquired qualities, and it must be remembered, too, that a portion of the Reserve men are recalled, each year to complete, during the autumn manœuvres, the effective strength of the battalions, squadrons, and batteries of the Regular Army, and that another portion is called up for the trainings of 8 to 15 days already referred to.

It may therefore be said that the Landwehr is composed of soldiers of seven years' service, the greater portion of whom are not married. These men are in the prime of life, 27 to 32 years of age, well drilled and trained to manœuvres, animated with feelings of *esprit de corps*, and who take into their families a spirit of order and thrift, a feeling of duty, and a respect for the laws and authority; things which the greatest care is taken to develop amongst the soldiers of the Federal Army.

The Prussian Landwehr has given worthy proofs of this in 1866, and more than one officer has told me, that he would as willingly command Landwehr as Regular Troops.

This being the case, how is it possible to compare the Landwehr with our National Guard "Mobile," composed of young men that the law, by an impracticable clause, will not allow to be trained or manœuvred, and whose instruction must be improvised during war itself. We must do the best we can, now that the law is enacted, but the National Guard "Mobile" will remain a dead letter so long as Article 9 exists in its present shape.

Let us alter it, directing that young men may be trained for a week or a fortnight in place of one day. Even then it will be absurd to compare the Guard "Mobile" with the Prussian Landwehr.

It is sad to think that such comparisons are openly made in France, officially even, so far as to say that the National Guard "Mobile" will form a formidable force, superior to the Prussian Landwehr. Saying so, men deceive themselves, they deceive the public, who on such serious matters should be enlightened.

II. Prospects of War.

I have always hitherto, in my reports to the War Minister, taken care not to exceed the limits of my purely military functions, and have abstained entirely from everything of a political nature; but the Emperor having been good enough to ask me, during my recent stay in Paris, what, in my opinion, were the prospects of war with Prussia, I beg to submit some ideas on this subject, for which I alone am responsible, to complete and define those which I have already given *vivâ voce*.

The principal points that I seek to make clear are:—

1. War is inevitable, and *at the mercy of an accident*.

2. Prussia has no intention of attacking France; she does not seek war, and will do all she can to avoid it.

3. But Prussia is farsighted enough to see that the war she does not wish will assuredly break out, and she is, therefore, doing all she can to avoid being surprised when the fatal accident occurs.

4. France, by her carelessness and levity, and above all by her ignorance of the state of affairs, has not the same foresight as Prussia.

1. *War is Inevitable.*

Prussia, both from ambition and conscious strength, has for many years looked on herself as destined to unify and subdue Germany. This tendency may be traced through all the phases of her history since 1813, the period when she displayed greater energy than any other German State in securing the common freedom. She employs, speaking of herself, an expression which perfectly describes these feelings; she calls herself the German *nucleus* (Der Kern Deutschlands), and it must be admitted that she has by the energy of her race, her education, and her sound qualities, which in many respects have placed her in the first rank amongst powers, earned this appellation.

Until 1866 Prussia had a population of only 18,000,000, and her pretensions to rule Germany were limited, both on account of the number of her population and the size of her territory, which reduced her to the rank of a second-rate power.

But all at once the thunderbolt of 1866 revealed this power both to herself and to the world. Hercules felt himself a man. Then the pretension to rule all the Germanic races knew no bounds; what before was an aspiration became a faith; and now the desire to realize German unity pervades, and will pervade all Prussia, despite of all things, and it must not be imagined that this belief can be altered or weakened; on the contrary, it is firmly rooted, and time will but strengthen it. This fact admitted, there is yet another which is forcibly brought to the notice of an observer. When one asks, why Prussia did not seize all the German States after the battle of Königgrätz, or why she does not display more boldness, in welding the Southern States to the North German Confederation? Every one at once replies, because war with France is feared; and, in short, on whatever side Prussia looks, she sees that it is France, and France only, that interferes with the fulfilment of her wishes.

When it is remembered that the Prussian nation is full of pride, vigour, and ambition; that it estimates its own importance at the highest point; that it looks on France as its historic and natural enemy, the feelings of suspicion, bitterness, and even hate, that spring up towards France, when it regards the state of affairs following on the events of 1866 may be easily understood.

It would, perhaps, be more accurate to say that these events have developed and rendered bitterer the feelings I have described; for such feelings have always existed, and they can easily be seen by any attentive observer, who seeks to appreciate the true feelings of Prussia towards France.

I may, perhaps, give a clearer idea of these feelings if I assume the Prussians as divided into three classes. Those who compose the first class (the least numerous of the three, it is true), feel towards France a double measure of hatred and envy, in the full acceptation of both these words.

These implacable enemies of France are to be found in the old Prussian provinces, chiefly those of the north and east, amongst the descendants of those families who were most concerned in the events of 1800 and 1815, or who have suffered the most from the French occupation, and have felt most keenly the humiliation inflicted on Prussia after Jena. They follow France with a blind hatred, which prevails over everything; and although their fathers have twice entered Paris, they do not consider that they have been avenged, and they burn with a desire to humiliate and even annihilate France.

The second class is the most numerous. It embraces all those amongst whom the feelings I have described exist, but in a minor degree. Like the first, they have not forgiven France the humiliation that Prussia received at her hands. But with them hatred and envy have limits. It may be said they do not love France, and are jealous of her.

The third class are also very numerous. They are chiefly business people, merchants, or people whose employment takes away the hatred and rivalry of nation against nation.

They do not show any dislike or ill-will to France. They would even like to live on terms of friendship with her. But they are Prussians; they are jealous for the greatness of their country, and they are anxious to see her fulfil her mission (according to a phrase used in Prussia), that is to say, the unification of Germany, and France is inconvenient to them, as being the sole obstacle that prevents the fulfilment of their wishes. This explains why this third section of the Prussian people, the best disposed towards us, are, nevertheless, animated with feelings of uneasiness and suspicion.

The foregoing statement, which I believe to be true, may be summed up as follows:—At the present moment, France, far from being an object of good feeling in Prussia, is, on the contrary, hated by some, envied by others, suspected and doubted by all.

I chiefly insist on this universal feeling of doubt and suspicion which at the present moment alienates all Prussia from us, and is the fatal result of the events of 1866. This uneasiness is, perhaps, deeper than in France. Everyone feels, in a manner more or less vague, that the present state of things

cannot last; doubt and fear are in all minds; trade languishes; everything declines. The universal feeling thus produced may be translated as follows:—

“Everything will change if France will only not interfere with our affairs.” And then a hundred accusations are brought against France. They reproach her with the part she played, during the Armistice of 1866, in preventing Prussia dictating peace at Vienna. Her jealousy excited by the success of the Prussian Army, her unfounded irritability, her pretended armament, her pretensions to interfere with the affairs of foreign countries, &c.

There is nothing to be surprised at in this state of affairs. It is the natural consequence of circumstances and the rivalry of the two nations. And I have described the nature of these feelings the better to show that unfortunately they must produce war.

Those who, in France or elsewhere, think peace possible, do not perhaps know, or sufficiently understand, the Prussian character. Yet, it must be granted, the characters of the two rival nations, their good and bad qualities, are the most important elements from which to predict, if peace or war will follow, any given state of affairs.

It is exactly similar to the case of two individuals who have a dispute, they will quarrel or agree according to their temperaments, their good or bad qualities.

Now the Prussians are quite as irritable as the French, quite as proud, more imbued with the belief in their own importance. They are energetic, tenacious, ambitious, full of good estimable solid qualities, but rude, arrogant, and entirely wanting in generosity. And it is this people that has undertaken to solve at any cost the question of German unity, whether France will, or will not consent, and this dispute, so important, has already begun between two nations equally irritable, proud, ambitious, and powerful, who inflicted on one another at the beginning of the century bloody insults, between two nations who are entirely different in language, inclinations, religion, and character.

How is it possible to hope for peace between them? The man who has such hopes is but a political or sentimental dreamer. War must be expected, break out it will some day or other, terrible and bloody.

It is not, however, likely that it will break out upon the question of German unity, so long at least as M. Bismarck controls the affairs of the Confederation. This great man, a remarkable instance of the most perfect balance, between intelligence, energy, and force of will, will never, one can be quite sure commit a fault from impatience. He knows too well that time is his best ally, and that in a war with France he might compromise the work of 1866. In a recent conversation, he told me he in language full of good sense, the reasons which compel Prussia neither to provoke nor desire war, and he thus

concluded: "We will never make war on you, you must come
"and fire rifle shots point blank at us first."

The gravity of the situation is not then in the question of German unity, but in the attitude which Prussia and France have assumed towards one another on the question, an attitude which is marked by suspicion, jealousy, and excited irritability, a situation these Powers will preserve so long as this dispute exists.

Such a state of affairs can only grow worse. This general uneasiness, followed by an increase of distrust and jealousy, must increase daily. This state of men's minds may be better understood when one lives in Prussia. Even now things have reached such a pass, that the smallest thing, the most insignificant event will produce a rupture, or in other words, war is at the mercy of an accident. Whatever that accident may be, superficial minds will doubtless call it the cause of war, but the true cause lies far deeper, and is much more complicated. The mutual hostility of the two nations, hostility continually increasing, can only be compared to a ripening fruit, and the accident that will bring about a rupture is but the accidental shock that causes the ripe fruit to fall from the tree.

2. *Prussia has no Aggressive Ideas.*

I have already said that Prussia has not only, no intention of attacking France, but that she will do all she can, compatible with her honour, to avoid war.

I am not ignorant how much this opinion, differs from that, which some people of indifferent judgment, who know nothing of Prussia, who substitute their passions, and their own wishes, for those of an entire people, and who base their opinions on idle tales, wish to spread in France.

If these people would only take the trouble to visit Prussia, and study things there, without passion or preconceived ideas, they would change their opinions.

What has not been said, and what will not yet be said, of the ambition of Prussia, her arrogance and her formidable military preparations? Truly she is ambitious, arrogance does not fail her, and her military preparations are formidable; but why conclude without any proof, that these preparations have an aggressive character? Once more, one has to deplore the detestable ignorance in which the great majority of the French people wallow, for it, as will be seen, is the source of all these errors.

How many people were there in France before 1866 who studied Germany, or sought to understand German questions? The Rhine, was it not, is it not, for us all, a great wall of China? and, nevertheless, writers, journalists, and others, who have not even lived in Germany, who have studied neither her history nor her institutions, write and discuss *usque ad nauseam* all these subjects, pronounce opinions on all things, and thus lead a public more ignorant if possible than themselves. They

see in the military activity which reigns in Prussia preparations for war, without considering that this activity, is of long standing; that it is continuous, inherent, so to speak, in the life of the nation. The only thing that is true, is, that it is greater now, than ever, because of the labour Prussia is compelled to take, to assimilate the three annexed provinces to herself. I will explain myself.

Before 1866, the French public ignored entirely anything relating to the organization of the Prussian Army, and the immense stride the King had in 1860 compelled the country to take. The army reorganized and much increased; compulsory service rigorously enforced, so as to give 600,000 trained soldiers. The greater part of the services improved; the unceasing labours of committees; great autumn manœuvres every year; training of the Reserve and Landwehr; the adoption of a new system for mobilizing the army, of a new breech-loading steel artillery; the incessant experiments with artillery; in a word, a great military activity. All that, was it not, almost unknown in France?

The events of 1866 followed. People could no longer ignore Prussia, and the French public began to study her; but as might have been foreseen they believed that all they saw was new, and dated from 1866. Thanks, then, to the feelings of mutual distrust that the events of this year produced between the two nations, the French public was inclined to think the military activity of Prussia, activity of which it then for the first time heard, aggressive, and directed against France. This military activity was merely a continuance of the constant care bestowed on the army that the country might never be taken unawares. Great manœuvres and numberless experiments of all kinds took place, the public called them *preparations for war*, the object being an attack on France.

It is right to point out one subject that tended to deceive the French public; Prussia, in 1866, had annexed Hanover, Schleswig-Holstein, Hesse Cassel, Nassau, and Frankfort, none of which had her military organization, her rules, nor her artillery or small-arms. She had to introduce all these into the three provinces. The labour and the time requisite to make such an assimilation can be easily understood; is it to be wondered at, therefore, that Prussia sought to do it, as quickly as possible?

In addition to which, she had concluded with Bavaria, Wurtemberg, and Baden, treaties offensive and defensive, by which these States bound themselves to adopt more or less her organization, rules, and arms. This point should be remembered if the great military activity of which Germany is now the theatre is to be rightly understood.

But I repeat that it is a mistake to think Prussia displays all this military activity, with the view of bringing on a war. Common sense; a knowledge of the state of affairs; of the interests of Prussia; the wise judgment of her King and his

government; the great intelligence of M. Bismarck, all demonstrate the falseness of such ideas.

3. *Foresight of Prussia.*

But if it is true that Prussia cherishes no secret aggressive desires, it is equally true that her military activity is more than usually excited by the probability of war with France, or more exactly, by the universal belief that war is fated, and inevitable. I speak here of what is exceedingly important. I wish to speak clearly of the painful contrast presented on the one hand by the foresight of Prussia, united to its attendant vigilance, and on the other hand, the blindness, the recklessness of France, which prevents her from seeing that war will undoubtedly take place, and that all other questions should be subordinated to this, the most important.

I have already given my opinion as to the probability of war when I said it will undoubtedly break out one of these days. I am not therefore surprised to find the same opinion shared here by many. As a man who loves his country, I can only feel saddened at the foresight of our future enemies.

Prussia, I have said, looks on herself as called on to fulfil a mission—to unify Germany, and she has firmly resolved to devote herself to the task.

She is by no means ignorant that this project will not be regarded by France with indifference, that her success in 1866 has awakened the irritability of her old enemy, and that the mutual feelings of mistrust, have reached such proportions, that the smallest accident may produce a rupture.

And as Prussia is both thoughtful and vigilant, she carefully watches not to be surprised the day the conflict begins, resolved, as she is, to accept battle with all the force at her disposal.

Hence it is that military activity is redoubled throughout all Prussia. Hence the haste to assimilate as quickly as possible the three new corps, and that of Saxony, by the introduction of her organization, her rules, and arms, to her own. Hence the large expenditure, the improvements of all kinds, resulting from the experience obtained in 1866; the costly experiments of all kinds, and the great efforts made to create a powerful navy. We must so comport ourselves as not to be surprised by Prussia. Her military organization which allows her to concentrate upon our frontiers, in 20 to 25 days, several armies, each composed of 100,000 men, the watchfulness of the Government which presides over her destinies, its belief in the probability of a great struggle with France, are all so many reasons why we should be thoroughly prepared, when the fatal moment arrives.

4. *Want of Foresight of France—Fatal Consequences.*

France, does she show amid these grave circumstances the

same foresight as Prussia? Unfortunately not. Sad thing to confess. No one can say when, the fatal blindness with which France is struck, will end. Thus, then, a frightful war is seen dimly in the distance, and threatens to break out at any moment. Our formidable enemy sees his terrible opportunity; he watches the moment for the struggle, which he does not seek, but he is yet ready to support it *with all the manly force of the nation*. With 1,000,000 of the most disciplined, most war-like, and best organized soldiers in the world; and in France, where 40,000,000 of men ought to be convinced as the Prussian people are convinced, that the fatal war is at the mercy of an accident, when everything ought to fade away before one idea, that of national security, there are but a few people who have this idea, clearly before them, and who comprehend the magnitude of the danger. This it is that causes me apprehension.

It is this striking contrast between the foresight of Prussia and the blindness of France—nations, like individuals, can only protect themselves from danger by being conscious of it; otherwise they remain inactive at the risk of experiencing the most cruel disappointments. Thus we see Prussia makes everything subordinate to the vital question—preparation for war—and keeps itself ever ready to enter the lists with France at the head of the formidable force at her disposal; while France weakens herself more and more as if heedless of her own safety. When such a spectacle is seen, one is unable to refrain from loudly impugning that fatal ignorance, that abominable infatuation which prevents us seeing what Prussia clearly sees. War is inevitable and is predestined. The contrast between the two nations is unfortunately seen at every point. In the Chambers, in the press, as well as in their moral state. In the Prussian Chambers, the different parties, how divided soever they may be upon questions of home politics, are all with one mind united against France, and against what they call her ambition and her presumption in meddling with German affairs. All animated with ardent patriotism and full of clear-sighted susceptibility, are ready to sacrifice their private feelings, and support and encourage the Government, in the efforts it is making to organize a formidable army, to create an imposing navy ready for the decisive moment.

What, on the contrary, do we see in France? A Chamber that boasts itself as representing the people, and which is its reflection, so far as levity and inconsistency are concerned. Witness the law on the National Guard "Mobile," and the obstinacy with which it will not see in Germany the storm which unceasingly increases, and threatens to overwhelm the country. A majority, formed almost entirely of uneducated men, without character, without that elevation of sentiment or that knowledge so requisite for statesmen; an opposition where vain and ambitious lawyers lead, whose patriotism consists of spiteful recrimination, or premeditated malice; who

hide their incapacity and impotence under flowers of rhetoric, who pretend that they alone are anxious for the well-being of the country, and who, to gain a factious popularity, dispute with the Government over one soldier, one franc; men that one can only execrate if they are aware of their criminal conduct, for while they seek to weaken France, they betray her into the hands of her most formidable enemy. To them may be applied the words of a warrior, "Modern Thersites, they bite but with their tongues; feeble of heart and arm, they are fitter to speak than fight."* The press of the two countries offers a similar contrast. While the Prussian press, edited usually by well-taught grave men, neglects nothing to excite feelings of envy and hatred against France; while it stops at no insult, no calumny; while it shows itself unanimous in keeping up in the public, hostile passions towards France, by representing her as the only irreconcilable enemy that Germany has, and while it supports the Government with all its influence in carrying out the measures it takes to be ready for any contingency. What passes in France?

There a press, always vain and empty, whose leading journals descant on the most important subjects without in the least comprehending them, seeking to serve parties, not France—a press without sincerity and disunited, even before the foreigner—is incessantly occupied in breaching the fundamental institutions of the country, in seeking to disseminate insubordination and demoralization throughout the army, and pushing its madness even to the point of clamouring for a reduction of the army, or a disarmament, when France has urgent need of all her force, all her energy, the union of all parties, to meet a struggle, very near, perhaps, but, in any case, a most formidable one.

If now, one thinks of the moral state of the two countries, one must acknowledge that the Prussian nation, so clear-sighted, so watchful, so enthusiastic in the pursuit of its mission, is, at the same time, the best educated in Europe, the best disciplined; that it is full of stamina, energy, and patriotism, not yet corrupted by the necessity for sensual enjoyment; and that it preserves an ardent faith in, and respect for all things, that should be respected.

Painful contrast! France has laughed at everything; things the most venerable are no longer respected; virtue, family ties, love of country, honour, religion, are all offered as fit subjects of ridicule to a frivolous and sceptical generation. The theatres have become schools of cynicism and baseness. A vulgar, indecent literature, conducted by men who have lost their status in society, and are devoid of principle, who seek but to make money, or reap an evil celebrity, or sell

* In the publication made by the newspapers of the Report of our late Military Attaché, many passages at the end are suppressed, or softened. We give the original text. [Ed.]

their merchandise on the stage, teaching youth to contemn and despise everything. Immoral and obscene novels are published and sold, veiled by a seductive talent, as being instructive studies of morals. And who will believe it? This sickening literature, these unhealthy novels, are greedily read by the greatest part of the public, to the exclusion of almost all other literary productions! Are not these things palpable signs of real decay? Thus poison filters, drop by drop, in every direction through the veins of an ignorant and *blasé* society, wanting intelligence and energy to change its institutions, to adopt new laws, based on justice and right, which may be conformable with the spirit of moderndays, such as educate and elevate society.

Thus all the great qualities of the nation, generosity, loyalty, the charm of wit, the aspirations of the heart, become weaker, or gradually disappear, to such an extent, that the noble French race, will soon be known only by its faults; and during this time France, does not see that other nations are passing her on the road to improvement, and that she lags behind.

These opinions will be distateful in France; but they are true.

I wish that some enlightened Frenchmen, free from prejudice, would come, and see, and study, Prussia. They would very soon recognize in her a nation grave, wise, and strong; wanting, it is true, in all attractive gifts, in all charms, in all delicate and generous feelings; but, as a compensation, endowed with the most estimable qualities, love of labour, study, and application, the spirit of order and economy, patriotism, the feeling of duty and individual dignity, lastly, the respect for authority and obedience to the law.

They will see a country admirably administered, governed by strong, healthy, moral institutions, where the higher classes show themselves worthy of their rank, and preserve the influence which is their due because they are the most enlightened, giving examples of self-sacrifice, and devoting themselves continually to the service of the State. A country, in short, where each thing is in its place, and where the most perfect order reigns in all portions of the social body.

Perhaps these observers might, involuntarily, compare Prussia to an imposing, massive building, strongly constructed from turret to foundation; in which each stone is so laid as to contribute to the stability of the whole. An edifice which may be admired for the rigidity of its outline, but where there is nothing to gratify the eye, or excite the feelings.

What a contrast with the disorder reigning in the social condition of France, where everything is mixed, confused, and upset; where, under pretext that each may pretend to occupy the highest position, no care is taken in selecting men possessed of that just balance between education, morality, and instruction, which is so requisite; whence it follows that posts the most honourable, and of the highest

consideration, are as often filled by men badly educated, but gifted with certain talents, as by ignorant men, with no other claim to them than their social position and knowledge of the world. Fatal, demoralizing spectacle! This is the cause why we meet in France so many men sunk in the social scale, and envious of others; so many broken spirits, each groping his way without finding it. Under this head, our confused social condition may, in opposition to that of Prussia, be compared to one of the masterpieces of ancient Greek architecture, which an earthquake has shaken to its foundations, breaking, confusing, and scattering everything. The traveller admires the mighty ruins, heaped *pellmell* on the ground, and goes away with a charmed mind but a saddened heart. I repeat it, it appears to me impossible that anyone who will study Prussia cannot but be struck by the contrast I have attempted to point out; and he will see the truth of what I have pointed out in one of my preceding reports, namely, that, as compared with Prussia, France is fifty years behind, so far as general instruction and institutions are concerned; whilst, so far as relaxation, desire for material pleasure, and social dissolution, she is two hundred years in advance!

How can I avoid being profoundly affected by these comparisons, believing as I do that war is inevitable? But (it must never be forgotten) in this war, Prussia, or rather the North German Confederation, will dispose of 1,000,000 trained disciplined and strongly organized soldiers, while France has barely 300,000 to 400,000 men,* But the Federal Army embraces all the manly portion, all the intelligence, all the *vis vivâ* of a nation full of faith, energy, and patriotism, while the French Army is almost entirely composed, of the poorest, and most ignorant portion of the nation,

The German Army, from the fact that it does embrace, without any exception, all the manly portion of the nation, feels itself strengthened and supported by the unequalled esteem and consideration it enjoys in the country, while the French Army, looked on by some as a useless institution attacked by others, who sow corruption and insubordination in its ranks, feels itself bowed down by a want of consideration, and has no consciousness of the mission it has to fulfil.

Once more I must insist upon the contrast which the military forces of the two countries, the two nations themselves present. I cannot conceal it. It forms for me, and for some Frenchmen who deem war inevitable, and who live in Berlin, the subject of our most painful thoughts, our continual grief.

I would exceed the limits of my province were I to point out the great measures that must be taken to remedy this deplorable state of affairs.

* It is said that the institution of the National Guard "Mobile" will raise the military forces of France to more than 800,000 men; but I have already explained in the first part of this Report what may be expected of that abortive institution.

But how can I avoid being struck by the moral dissolution which makes such frightful strides in France, and how can I avoid seeing the torpor, the blind presumption, in which the nation lives, and which blinds it to its danger?

The Government must undertake the work of regeneration, become so indispensable, and it can succeed in this noble enterprise only by altering from top to bottom many of our essential institutions, or rather by replacing them by others better qualified to instruct and moralize the people and develop in them manly qualities.

Chief amongst these regenerative institutions there are two, as the history of Prussia superabundantly proves, compulsory military service, compulsory universal education.

To speak only of compulsory service, we must first ask, Has the French nation the requisite qualities to adopt and apply it? The reply, unfortunately, is not encouraging. Infatuated with itself, and perverted by egotism, the nation will with difficulty conform to an institution of which it does not even suspect the strong and fruitful principal, and the application of which requires virtues it does not possess, self-denial, self-sacrifice, love of duty. Like individuals who correct nothing in their lives, except taught by the stern lessons of experience. Nations never improve the institutions which govern them, until compelled to do so by the rudest trials. Jena was requisite in order that Prussia might probe herself, and feel the necessity of invigorating herself with healthy manly institutions. She then adopted the principal of universal compulsory service for all her citizens. And it must be allowed that if this institution did not now exist, Prussia would find it impossible to introduce it.

Once only in 50 years has France been in a position favourable for the introduction of compulsory service. In 1848, when, thanks to the rapid growth of ideas produced by the revolution of February, the National Assembly found itself in an excellent position to show, by the adoption of universal service, that it understood how to apply practically those principles of equality that it so loudly vaunted. It did indeed, attempt something in this sense by seeking to abolish the hideous plague spot of military substitution, and it named a Commission of which General Lamoricière was reporter. This law would have been adopted, but for the interference of M. Thiers, who made himself in the Chamber the champion of the egotistical and paltry ideas of the bourgeois. By thus preventing France from entering in 1849 on the path which would have led her later on to adopt compulsory service, so fruitful, so moralising, so suited to regenerate her, this man, to whom nature has denied feelings of true greatness, firm convictions, or the power of serious thought; this man, I repeat, has been more fatal to his country, than 20 disasters.