Without being a Seydlitz or a Laguérinière, one may very well reason upon the employment of cavalry in war, and although I have no pretension to being a trooper, I can say that the most experienced of generals in our day have partaken of my ideas upon the cavalry, and that in many battles I have often judged of it better than those who have commanded large masses of it.

The only one of my maxims which has excited some controversies, is that relative to the gait of the trot for charges against cavalry. Whatever may have been said of it, I believe still, at the moment at which I am writing, that success depends much upon the maintenance of order until the instant of the shock; and that for lancers especially, the shock of a *mass well in hand* and at the trot, would triumph over a troop scattered by the gallop.

As for the rest, to maintain order as much as possible in the shock, to endeavor to have it seconded at the opportune moment by a flank attack; to be able to give moral impulsion to one's troop, and to have an echelon ready for support, are the only elements of success which I have ever recognized as practicable in the charges of cavalry against cavalry, for all the fine maxims in the world vanish in a struggle rapid as the lightning, where the most skillful professors would only have time to parry sabre cuts, without even being in condition to give an order which could be heard and executed.

With regard to the good employment of the cavalry, in the whole of a battle as in that of the whole of a war, I believe that no experienced general would repudiate the ideas which I have advanced upon this subject.

I have never denied that cavalry would not concur in the defense of a position; but that it would defend it by itself, I shall ever deny. Posted on a position, behind a hundred pieces of artillery, it will be able to maintain itself there if one be contented with cannonading it, as the French cavalry so bravely defended itself at Eylau; but let infantry and artillery march upon it after having paralyzed its batteries, and you will see if the position will be defended.

For the rest, the true cause of the great wrath of General B**** is easy to divine. I have had the imprudence to say that his Treatise upon the Cavalry, albeit very erudite, had not caused much progress to be made in this arm. This judgment has doubtless appeared to him severe, and in spite of the wrongs of the author in regard to myself, I agree that it was pronounced in too absolute a manner. Meanwhile, after the teachings we have been able to receive from the cavalry of Seydlitz and

of Napoleon, I do not know whether that which M. B**** would organize and conduct according to his doctrines, would do much better; here lies the question. For having dared to resolve it negatively, I am but an ignoramus; there is good criticism for you! If opinions be free, cannot one discuss them without injuries? As for myself, I recognize in M. B**** much mind and erudition; perhaps he has even too much for the subject he treats. When wit sparkles and the passions speak, reason and judgment sleep. As for the rest, I have already observed in the notice which precedes this work, that it was not in serious books that a military man ought to reply to personalities especially after having been ignorant of them for six years.

ARTICLE XLVI.

THE EMPLOYMENT OF THE ARTILLERY.

The artillery is at the same time an offensive and defensive arm, equally formidable.

As an offensive means, a great battery, well employed, crushes a hostile line, shakes it, and facilitates to the troops which attack it the means of breaking it. As a defensive arm, it must be acknowledged that it doubles the strength of a position, not only by the harm it does an enemy from afar, and by the moral effect which it produces at a long distance upon troops which march to the attack, but yet by the local defense which it will make of the position itself, and within grape shot range. It is not less important in the attack and defense of places, or of intrenched camps, for it is the soul of modern fortification.

We have said a few words upon its distribution in the line of battle, but we are more embarrassed in speaking of the mode in which it should be made to act in combat. Here the chances multiply in such a manner, by reason of the particular circumstances of the affair, of the ground and of the movements of the enemy, that we cannot say that the artillery has any action independent of that of the other arms. In the meanwhile we have seen Napoleon at Wagram throw a battery of a

hundred pieces in the gap occasioned in his line by the departure of the corps of Masséna, and thus to hold in check all the efforts of the Austrian centre; but it would be very dangerous to set up as a maxim such an employment of the artillery.

We shall limit ourselves then to presenting here a few fundamental data, observing that they are based upon the condition of this arm, such as it existed in the late wars; the employment of the new discoveries not being yet well determined could not find place here.

1. In the offensive, we ought to unite a certain mass of artillery upon the point where we are preparing to direct our heaviest blows; we will employ it at first for shaking by its fire the hostile line, in order to second the attack of the infantry and cavalry.

2. There are necessary, besides, a few batteries of horse artillery, for following the offensive movement of the columns, independently of the light foot batteries which have the same object. We must not, however, throw too much foot artillery in an offensive movement; it can be placed in such a manner as to attain the object without following the columns.

3. We have already said that the half, at least, of the horse artillery ought to be united in reserve, in order to be directed rapidly wherever its services shall be most required.* To this effect it is necessary to place it upon the most open ground, where it can be moved in every direction. We have also mentioned the best post for the artillery of position.

4. Batteries, although spread in general over the whole of a defensive line, ought to know how to direct their attention upon the point where the enemy would find more advantages and facilities to penetrate; it is necessary then that the general commanding the artillery should know the strategic and the tactical point of a field of battle, as well as the ground itself, and that every distribution of the reserves be calculated upon this double data.

5. Every one knows that artillery posted on level ground, or in the midst of declivities gently inclined *en glacis*, is that whose effect, in

* Since this chapter was first published, several powers have adopted the system of placing the artillerists on the train, instead of putting them on horseback; this saves many horses, and the embarrassment of holding them during the firing of the batteries; but it will never equal, for mobility, the superb horse artillery of the Russians, which surpasses every idea which one seeks to form of it. Many other inventions of ordnance have had place, but they are not yet sufficiently known to find a place here, it will be for experience to demonstrate the manner of employing them.

direct or ricochet firing, will be the most murderous. No person is ignorant, either, that the concentric fire is the most suitable.

6. Artillery of every kind employed in battles ought never to forget that its principal destination is to batter the troops of the enemy, and not to reply to his batteries. Meanwhile, as it is well not to leave the field free to the action of the hostile artillery, it is useful to combat it for drawing its fire; a third of the disposable pieces may be destined to that object, but two thirds at least ought to be directed upon the cavalry and the infantry.

7. If the enemy advance in deployed lines, the batteries should seek to cross their fires in order to take those lines obliquely; those which could place themselves upon the flanks, and batter the lines in their prolongation, would create a decisive effect.

8. When the enemy advances in columns, they can be battered in front; that is to say, in their depth. However, it is not less advantageous to batter them obliquely, and especially in flank or in reverse. The moral effect produced upon troops by artillery taking them in reverse, it incalculable. It is rare that the most valiant soldiers are not astonished and shaken. The fine movement of Ney upon Preitiz (battle of Bautzen) was neutralized by a few pieces of Kleist, which took his columns in flank, arrested them, and decided the Marshal to change his good direction. A few pieces of light artillery, thrown at every risk upon the flanks for obtaining a like result, would never be ventured without utility.

9. It is acknowledged that batteries should be constantly sustained by infantry or cavalry, and that it is advantageous to support them properly upon the flanks. Meanwhile many cases present themselves when it is necessary to deviate from this maxim, and the example of Wagram, of which we have spoken, is one of the most remarkable of them.

10. It is very important that, in the attacks of cavalry, the artillery do not allow itself to be frightened, and that it fire with ball, but especially with grape shot, as long as possible.* In this case, the infantry charged with protecting batteries ought to be formed in squares in proximity, in order to give refuge to the horses, and afterwards to the cannoniers; long squares, proportioned to the extent of the front of the battery, seem the most proper for accomplishing this object, when the infantry is in rear of the pieces. If it be found at the side, perfect

* The newly invented shell, giving the means of carrying these projectiles two thousand yards, with an insensible parabola, will be a terrible arm against cavalry.

squares will be preferable. We are assured that rocket batteries can be employed against cavalry, the horses of which they frighten; but I repeat, this is still an experiment to make, and we could base no maxim upon data so uncertain.

11. In the attacks of infantry against artillery, the maxim to fire as long as possible, without, nevertheless, commencing at too great a distance, is yet more rigorous than in the case above mentioned. The cannoniers will always have the means of securing themselves from infantry, if they are properly sustained. Here is one of the cases for engaging the three arms at the same time, for if the hostile infantry be shaken by the artillery, a combined attack of the infantry and cavalry will cause its destruction.

12. The proportions of the artillery have considerably varied in the late wars. Napoleon went to the conquest of Italy in 1800, with forty or fifty pieces, and succeeded completely; whilst in 1812 he invaded Russia with twelve hundred pieces, and did not succeed. This sufficiently proves that no absolute rule could fix those proportions. It is generally admitted that three pieces to a thousand combattants are sufficient, and even in Turkey, as well as in the mountains, this is a great deal too much.

The proportions of heavy artillery, the reserve, so called, with those of lighter artillery, equally vary. It is a great fault to have too much heavy artillery, for in battles six or eight pounder guns produce nearly the same effect as twelve pounders, and there is meanwhile a great difference in the mobility and the accessory embarrassments of these calibres. For the rest, one of the most notable proofs which can be cited for appreciating the influence of the proportions of the armament upon the success of armies, was given by Napoleon after the battle of Eylau; the cruel losses which his troops sustained by the fire of the numerous artillery of the Russians, made him feel the necessity of increasing his own. With an activity difficult to conceive, he set all the arsenals at work in Prussia, on the line of the Rhine, and even at Metz, to increase the number of his pieces, and to cast new ones, for turning to account the munitions which he had captured in the campaign. In three months he doubled, at four hundred leagues from his frontiers, the *personel* and the *materiel* of his artillery, a thing unheard-of in the annals of war.

13. One of the most suitable means for obtaining the best possible employment of the artillery, would be always to give the superior command of this arm to a general of artillery who is at the same time a good tactician and strategician; this chief would have the faculty of

disposing not only of the artillery reserve, but even of half of the pieces attached to the different corps or divisions.

He could thus concert with the generalissimo as to the moment and the place where considerable masses of artillery could best contribute to the victory; but he will never make such a union of masses without having taken previously the orders of the commander-in-chief.

At the moment when I was about to publish this article for the second time, I received a pamphlet from General Okounieff upon the importance of the artillery. However interesting it may be, it could not decide me to change what I have said upon this arm.

The author avows, with a laudable frankness, that he had not sufficiently appreciated that importance in his work upon the employment of the three arms; and as if to make reparation to the artillery, he sustains now that it is henceforth to decide battles, and to become for that purpose even the principal arm of European armies.

As I have recognized at all times the part that a well employed artillery may have in victories, I am very much disposed to admit with the author, that its influence would be greater if it were known always how to realize from it the part of which it is susceptible. I acknowledge, also, that several quite recent inventions, which will augment its effect whether for ricochet firing, or for grape at long range, are of a nature to call the attention of generals who shall be at liberty to make use of them, and who have at command the means of trying their effects, as also finding the means of securing themselves against them.

The pamphlet of General Okounieff would then have already attained an important end in in opening this vast quarry; but after having rendered him justice, I shall be permitted to say that the author has rather overstepped the mark, for if it were necessary to believe all he advances, there would no longer be required in an army anything but cuirassiers, artillerists, and the infantry necessary for holding enclosed posts, for the rest would be but food for projectiles. Setting out with this dominant idea, M. Okounieff concludes from it by a very natural consequence, that the means of gaining battles will be reduced to breaking the centre of an army by dint of cannon shots, and in having masses prepared to fall upon this breach; a means which he finds very preferable to those he calls *movements of conversion*, and which to this day, according to his own confession, have gained very many battles.

Here, I own, I am obliged to contend that there is something too absolute in these assertions. In the first place, I do not perfectly compre-

hend those movements of conversion ; they are doubtless attacks for outflanking a wing at the same time that a part of the front is assailed. If I am not deceived, these kinds of manœuvres are not always movements of conversion ; at best it is but a quarrel of definition, which is really of little importance ; that which I do not consider well founded, is the idea that an exclusive manœuvre can be adopted as an universal panacea, and that it is necessary to renounce all other tactics than that of immense batteries and heavy masses piercing centres. For my part, if I had to combat an enemy professing such exclusive ideas, I should be no wise embarrassed in opposing to him means which would defeat his favorite attacks. At first I should employ that which M. Okounieff himself cites on page 35, as having been adopted with success by the Prince de Lichtenstein at the battle of Wagram, against the famous column of Macdonald ; the system employed at Cannae by Hannibal, could all the better find here its application, as such a mass battered by the concentric fires of an artillery equal in number, and disposed in a concave line, like that of the Arch-Duke Charles at Essling, would be much compromised. Finally, in order to avoid cutting the army in two parts, who knows if one of those movements of conversion which the author would repudiate, would not be an excellent means to oppose to his system, since it would transport the decisive effort of the combat on quite another point than the centre ?

Far be the thought from me of contesting all merit in a strong attack upon the centre ; I have often recommended it, but especially when it should be combined with an attack upon the extremity of the line (agreeably to figure 12 of plate 1, page 210,) or where it should be made on a rather too extended line.

Be that as it may, it appears to me that the author has rather lost sight of the fact that the moral of the troops, the character and genius of the chiefs have also a great influence upon the issue of battles. These are batteries less murderous, but not less efficacious. It must not be forgotten either that all fields of battle and all countries do not offer the same advantages to artillery ; in Italy, in Switzerland, in Vendée, in many parts of Germany, in every very broken country, in a word, we do not find fields of battle like Wagram and Leipsic.

As for the rest, there are useful lessons in his pamphlet, to which no other reproach could be made than that of having drawn him from one extreme to the other. The author has without doubt wished to imitate those advocates who, after a fine defense, draw exaggerated conclusions, certain that the judges will always abate the half of them ; wise men will be able to take what they find in them true and useful, and give him credit for them.

The first result of this treatise should be to awaken the attention of men who have the mission of influencing the destinies of armies, that is to say, of governments and generals. The second will be, perhaps, the doubling of the *materiel* and *personel* of the artillery, and the adoption of all improvements capable of augmenting its destructive effect. And as artillerists will be in the number of the first victims, it will be very necessary to engage in instructing in the infantry, men chosen to serve the pieces at need, and to fill even the vacancies which battles would leave in the ranks of the artillery. Finally, it will be necessary to endeavor to find the means of neutralizing the effects of this carnage, and the first which occur seem to be the modification in the armament and the equipment of troops, then the adoption of a new tactics which will render results as prompt as possible. This task will be for the rising generation, when we shall have tested by experience all the inventions with which we are occupied in the schools of artillery, whilst awaiting better. Happy will be those who, in the first rencounters, shall have a plenty of schrapnel howitzers, many guns charged at the breech, and firing thirty shots a minute ; many pieces richocheting at the height of a man, and never failing their mark upon one or another part of the field of combat ; finally, the most improved rockets—without counting even the famous steam guns of Perkins, reserved to the defense of ramparts, but which, if the written statement of Lord Wellington is to be believed, will yet be able here to make cruel ravages. * * * What a beautiful text for preaching universal peace and the exclusive reign of railroads !

I shall be pardoned if I terminate a discussion so grave, by a phrase bordering upon pleasantry. But we must take a less sombre view of the future with which so many brave men menace us, who by a cruel foresight combine the means of rendering war still more bloody than it is, and that, too, in the hope of assuring the triumph of their banners. A terrible but indispensable emulation, if we would remain on an equality with our neighbors so long as the law of nations shall not have placed limits to those inventions.

ARTICLE XLVII.

OF THE COMBINED EMPLOYMENT OF THE THREE ARMS.

In order to terminate entirely this summary, it would remain to speak of the combined employment of the three arms: but how many minute variations would not this subject present if one pretended to penetrate into all the details which the application of the general maxims indicated for each of those arms in particular, require?

Several works, and the German particularly, have sounded this bottomless abyss, and have obtained passable results, but by multiplying to infinity examples taken in the small partial combats of the late wars. Those examples in effect supply maxims, when experience demonstrates that it would be impossible to give fixed ones. To say that the commander of a corps composed of the three arms, ought to employ them in such a manner that they naturally support and second each other, would seem a truism; and it is, nevertheless, the only fundamental dogma which it is possible to establish, for to wish to prescribe to that chief the manner in which he ought to go to work in every circumstance, would be to engage in an inextricable labyrinth. Now, as the objects and the limits of this sketch do not allow me to touch such questions, I can do no better than to refer officers to the special works which have treated them with the most success.

To place the different arms according to the ground, according to the object which is proposed, and that which may be supposed of the enemy, to combine their simultaneous action according to the characteristic qualities of each—this is all that the art can advise. It is in the study of wars, and especially in the practice, that a superior officer will be able to acquire these notions, as well as the *coup d'œil* which inspires their seasonable application. I think I have fulfilled the task which I have imposed upon myself, and I am going to pass successively to the narration of the memorable wars, in which my readers will find at each step occasion to be assured that military history, accompanied by sound criticism, is indeed the true school of war.

CONCLUSION

We have endeavored to retrace the principal points which have appeared to us susceptible of being presented as fundamental maxims of war. War, however, in its ensemble, is not a science, but an art. If strategy, especially, can be subjected to dogmatic maxims which approach the axioms of positive sciences, it is not the same as a whole with the operations of a war, and combats among others will often escape all scientific combinations, to offer us acts essentially dramatic, in which personal qualities, moral inspirations, and a thousand other causes, will play at times the first part. The passions which shall agitate masses, called to hurl themselves against each other—the warlike qualities of those masses—the character, energy and the talents of their chiefs—the greater or less martial spirit, not only of nations, but even of epochs*—in a word, all that which may be called the poetry and the metaphysics of war, will ever have an influence upon its results.

Is it saying, for all that, that there are no tactical rules, and that no tactical theory could be useful? What reasonable military man would dare pronounce such a blasphemy? Will it be believed that Eugene and Marlborough have triumphed only by inspiration, or by the moral superiority of their battalions? Will there not be found, on the contrary, in the victories of Turin, of Hochstaedt, of Ramillies, manœuvres which resemble those of Talavera, of Waterloo, of Jena, or of Austerlitz, and which were the causes of victory? Now, when the application of a maxim, and the manœuvre which has been its result, have a hundred times given the victory to skillful captains, and offer in their favor all the

* The famous Spanish proverb. *he was brave on such a day*, may be applied to nations as well as to individuals. One could not compare the French at Rosback with those at Jena nor the Prussians at Prenzlow with those at Dennewitz.