have said, to collect the greatest number possible of the vehicles of the country, taking care that the proprietors or conductors be well treated and protected by the troops; parks of them will be formed in echelons in order not to remove them too far from their homes, and to have successive resources husbanded. Finally, it will be necessary to habituate the soldier to carry for a few days biscuit, rice, or even flour, in default of other provisions.

7. The neighborhood of the sea offers very great facilities for the supplying of an army; that one which is master of the sea, it seems ought never to want for anything. However, this advantage is not without its inconvenience for a great continental army, for with the object of remaining in sure relations with its magazines, it will allow itself to be drawn into carrying its operations upon the shore, which would expose it to cruel disasters, if the enemy acted with the mass of his forces upon the extremity opposite to the sea.* If it remove too far from the shore, it may then be exposed to see its communications menaced or even intercepted, and the material means of every kind must of necessity be augmented in proportion as it shall so remove itself.

8. The continental army, which shall employ the sea to facilitate its arrivals, must not neglect to have its principal base of operations by land, with a reserve of supplies, independent of maritime means, and a line of retreat upon the extremity of its strategical front opposite the sea.

9. The rivers or navigable streams, whose course should be nearly parallel with the routes which should serve as a line of operations to an army, would furnish, as well as canals, great facilities for the transportation of provisions; and although these means are not comparable to those which great navigation procures, they would, notwithstanding, be very valuable. It is concluded thence with reason that lines of operations parallel to a river are the most favorable, especially in that they render arrivals more easy, and permit a great diminution of the embarrassment of carriages; but so far from the river being within itself the true line of operations, as has been pretended, it would be necessary always to have care that the greater part of the troops should be able to keep removed from it, to the end of preventing the enemy, coming to attack them in force on the extremity opposite to the river, from placing them in a position quite as fatal as if they were hemmed in upon the sea.

* It is seen that I mean to speak here only of wars between European nations which know how to manœuvre; one might deviate from these rules against Asiatic and Turkish hordes, little to be feared in the field; they have neither instruction nor troops capable of punishing the faults which should be committed before them

It must be observed, however, that in a hostile country it is very rare to be able to profit by a river for the arrival of provisions, either because of the destruction of its vessels, or because light corps might disturb its navigation. In order to render it sure it would be necessary to direct corps upon the two banks, which is not without danger, as Mortier experienced at Dirnstein. In a friendly or allied country the case is different, and the advantages of rivers are more real.

10. In default of bread or biscuit, flesh upon the foot has often sufficed for the immediate wants of an army; and in populous countries, beasts are always sufficiently abundant to provide it for some time. But these resources are soon exhausted, and they drive troops to maranding; it is important, then, to regulate by all means possible the requisitions for beasts, to pay for them if practicable, and especially to cause the columns to be followed by bullocks bought out of the sphere of the marches of the army.

I could not terminate this article without citing a saying of Napoleon, which will appear strange, but which, however, has its good side. I have heard him say that, in his first campaigns, the hostile army was always so well provided that, when he found himself embarrassed to feed his own, he had only to throw it upon the rear of the enemy, where he was certain to find every thing in abundance. A maxim which it would doubtless be absurd to lay down as a system, but which explains perhaps the success of more than one rash enterprise, and which demonstrates how much veritable war differs from too measured calculations.

ARTICLE XXVI.

FRONTIERS, AND THEIR DEFENSE BY FORTRESSES OR INTRENCHED LINES. WAR OF SIEGES.

Fortresses have two capital destinations to fulfill, the first, is to cover the frontiers; the second, to favor the operations of an army in the field.

The defense of the frontiers of a State by places is in general a somewhat vague thing; doubtless, as we have said in the article on lines of defense, there are some countries, the approaches of which, covered by great natural obstacles, offer very few accessible points which it would be possible still to cover by works of art; but in open countries the thing is more difficult. The chains of the Alps, of the Pyrannees, those less elevated of the Crapacks, of the Riesengebirg, of the Erz Gebirg, of the Rohmerwald, of the Black Forest, of the Vosges and of the Jura, are all more or less susceptible of being covered by a good system of places. (I do not speak of the Caucasus, as elevated as the great Alps, because it will never probably be the theatre of great strategical operations.)

Of all those frontiers, that between France and Piedmont was the best covered; the valleys of the Stura and Suza, the passes of the Argentaro, of Mount Genevre, of Mount Cenis, alone reputed practicable, were covered with forts in masonry, then considerable places were found in the outlets of the valleys into the plains of Piedmont; nothing appeared more difficult to overcome.

However, it must be owned, those fine defenses of art never wholly prevented an army from passing, first, because the little forts that may be constructed in the gorges are susceptible of being carried, then because some road, judged impracticable, is always found where an audacious enemy succeeds, by force of labor, in opening himself an issue. The passage of the Alps by Francis I., so well described by Gaillard, that of the St. Bernard by Napoleon; finally, the expedition by the Splugen, so well described by Mathiew Dumas, prove for the rest this truth; *an army*, said Napoleon, *passes wherever a man can plant his foot!* a maxim, perhaps, a little exaggerated, but which characterizes that great captain, and which he himself has applied with so much success! We shall say, farther on, a few words upon this mountain warfare.

Other countries are covered by great rivers, if not immediately in first line, at least in second. It is astonishing, meanwhile, that those lines, which seem so well calculated to separate nations, without interrupting their commercial relations and neighborhood, form no part of the real line of frontiers; for it could not be said that the line of the Danube separated Bessarabia from the Ottoman Empire so long as the Turks had footing in Moldavia. In the same manner, the Rhine was never a real frontier between France and Germany, since the French had for a long time places on the right bank, whilst the Germans had Mayence, Luxembourg, and the *têtes de ponts* of Manheim and Wesel upon the left bank.

However, if the Danube, the Rhine, the Rhone, the Ebro, the Oder, the Vistula, the Pô and the Adige are no part of the lines of first frontier, that does not prevent fortifying them as permanent lines of defense, upon all the points where they can offer a satisfactory system of defense, for covering the front of operations.

One of the lines of this kind, which may be cited for an example, is that of the Inn, which separated Bavaria from Austria; flanked on the south by the Tyrolean Alps, on the north by the mountains of Bohemia and by the Danube, its front, which is not extensive, is found covered by the places of Passau, Braunau and Salsburg. Lloyd compares, somewhat poetically, this frontier to two impregnable bastions, the curtain of which, formed by three fine places, has for ditch one of the most impetuous of rivers; but he has exaggerated a little those material advantages, for the epithet impregnable, with which he decorates them, has received three cruel denials in the campaigns of 1800, 1805 and 1809.

The greater part of European States, far from having frontiers as formidable as those of the Alps and of the Inn, present countries with open plains, or mountains accessible upon a considerable number of points; our project not being to offer the military geography of Europe, we shall limit ourselves to presenting the general maxims which may be applied to all countries indiscriminately.

When a frontier is found in open country, it is necessary to renounce the idea of making of it a formal and complete line of defense by multiplying therein too many places, which require armies to garnish their ramparts, and never definitively prevent an entrance into the country. It will be wiser to content one's self with establishing a few good places, skilfully chosen, not merely for preventing the enemy from penetrating, but for augmenting the obstacles to his march, at the same time protecting and favoring, on the contrary, the movements of the active army charged with repulsing him.

Fortresses have then a manifest influence upon military operations, but the art of constructing them, of attacking and defending them, belonging to the special arm of the engineers, it would be foreign to our object to treat of those matters, and we will limit ourselves to examining the points in which they pertain to strategy.

The first is the choice of the site where it is suitable to construct one. The second is the determination of the cases in which we may neglect places to pass beyond, and those in which we are forced to besiege them. The third consists in the relations existing between the siege of the place and the active army which is to cover it.

As much as a well situated place favors operations, to the same degree those established out of important directions are fatal; they are a scourge for the army which must be enfeebled for guarding them, and a scourge for the State which expends soldiers and money in pure loss.

I venture to affirm that many places in Europe are in this category.

It is true that a place is rarely of itself an absolute obstacle to the march of a hostile army, it is incontestible that it constrains it, that it forces it to detachments, to detours in its march; on the other side, it favors the army which possesses it by giving to it all the opposite advantages; it will assure its marches, will favor the debouch of its columns, if it be on a river; will cover its magazines, its flanks and its movements; finally, it will give it a refuge at need.

The idea of girding all the frontiers of a State with strong places very near each other, is a calamity; this system has been falsely imputed to Vauban, who, far from approving it, disputed with Louvois upon the great number of useless points which that minister wished to fortify. The maxims of this part of the art may be reduced to the following principles:

1. A State ought to have places disposed in *echelon* upon three lines from the frontier towards the capitol.* Three places in the first line, as many in the second, and a grand place of arms in the third line, near the centre of the power, form a system nearly complete for each part of the frontiers of a State. If there be four such fronts, that will make from twenty-four to thirty places.

It will be objected, perhaps, that this number is already very considerable, and that Austria even has not so many. But it is necessary to consider that France has more than forty upon a third only of her frontier, (from Besançon to Dunkirk), without there yet being sufficient in third line, at the centre of its power. A committee assembled, some years since, to determine upon those fortresses, concluded that it was necessary to add still more. That does not prove that there are not already too many, but that rather there are some wanting upon important points, whilst that those of the first line, too much accumulated, ought to be maintained because they exist. Considering that France has two fronts, from Dunkirk to Basle, one from Basle to Savoy, one from Savoy to Nice, besides the altogether separate line of the Pyrannees, and the maritime line of the coasts, there results that it has six fronts to cover, which would require from forty to

* The memorable campaign of 1829 has still proved these truths. If the Porte had had good forts in masonry in the defiles of the Balkan, and a fine place near Faki, we should not have arrived at Adrianople, and events might have becn complicated.

fifty places. Every military man will agree that these are as many as are necessary; for the front of Switzerland and the coasts of the ocean require less than those of the north-east. The essential thing in order that they attain their object, is to establish them according to a well combined system. If Austria had a less considerable number of places, it is because she was surrounded by the small States of the Germanic Empire, which, far from menacing her, put their own fortresses at her disposition.

Moreover, the number indicated expresses only that which appears necessary for a power presenting four fronts nearly equal in development. The Prussian monarchy, forming an immense front from Konigsberg to the gates of Metz, could not be fortified upon the same system as France, Spain or Austria. Thus the geographical dispositions, or the extreme extent of certain States, may cause this number to be diminished or augmented, especially when there are maritime places to add thereto.

2. Fortresses ought always to be constructed upon the important strategical points designated in Article XIX. Under the tactical relation, we ought to endeavor to place them in preference on a site which is not commanded, and which, facilitating the debouch, would render its blockade more difficult.

3. Places which unite the greatest advantages, either for their own defense, or favoring the operations of the active armies, are incontestibly those which are found so placed on great rivers as to command both banks; Mayence, Coblentz, Strasbourg, comprehending Kehl, are true models of this kind.

This truth admitted, it must be acknowledged also, that places established at the confluence of two great rivers have the advantage of commanding three different fronts of operations, which augments their importance; (the place of Modlin is a case in point.) Mayence, when it yet had the fort of Gustavsburg on the left bank of the Maine, and Cassel on the right, was the most formidable place of arms in Europe; but as it would require a garrison of twenty-five thousand men, a State could not have many of that extent.

4. The great places surrounding commercial and populous cities, offer resources for an army; they are much preferable to the small, especially when the aid of the citizens can yet be counted upon to second the garrison: Metz arrested all the power of Charles V.; Lisle suspended for a whole year the operations of Eugene and Marlborough; Strasbourg was many times the bulwark of the French armies. In the late wars those places were passed by because all the masses of Europe precipitated

themselves in arms upon France; but could an army of one hundred and fifty thousand Germans, which should have before it a hundred thousand French, penetrate with impunity to the Seine, neglecting such well furnished places? This is what I should be careful not to affirm.

5. Formerly war was made by places, camps and positions; in latter times, on the contrary, it has been made only with organized forces, without being troubled either by material obstacles or those of art. To follow exclusively the one or the other of those systems would equally be an abuse. The true science of war consists in taking a *juste milieu* between these two extremes.

Doubtless the most important thing will be always to aim first at completely defeating and dissolving the organized masses of the enemy which should hold the field; to attain this decisive end fortresses may be passed by; but if only a partial success were obtained, then it would become imprudent to pursue an excessive invasion. For the rest, all depends upon the situation and the respective strength of the armies, as well as the spirit of the populations.

Austria, warring alone against France, could not repeat the operations of the grand alliance of 1814. Moreover, it is probable that we shall not soon see fifty thousand French risking themselves beyond the Noric Alps, in the heart of the Austrian monarchy, as Napoleon did in 1797.* Such events depend upon a concurrence of circumstances which form an exception to common rules.

6. It will be concluded from what precedes, that places are an essential support, but that the abuse of them would be injurious, since instead of adding to the forces of the active army, it weakens by dividing them; that an army, seeking with reason to destroy the hostile forces in the field, may without danger glide between several places in order to attain this end, having care however to cause them to be observed; that it could not in the meanwhile invade a hostile country by crossing a great river, like the Danube, the Rhine and the Elbe, without reducing, at least one of the places situated upon that river, to the end of having an assured line of retreat; master of one such place, the army can then continue the offensive, at the same time employing its siege material to the successive reduction of the other fortresses; for the farther the acting army shall

* I do not blame Napoleon for having taken the offensive in the Friant; he had before him thirty-five thousand Austrians, which were awaiting twenty thousand more coming from the Rhine; the French general attacked the Arch-Duke before the arrival of those reinforcements, and pushed his successes briskly because there was nothing before him which could compromise his point. He operated within the rules, on account of the antecedents and the respective positions of the two parties.

advance, the more able will the siege corps be to flatter itself with terminating the enterprise without being obstructed.

7. If great places are much more advantageous than small, when the population is friendly, it must be admitted also, that the latter may have meanwhile their degree of importance, not for arresting the enemy, who might easily mask them, but for favoring the operations of an army in the field: the fort of Koenigstein was as useful to the French in 1813, as the vast place of Dresden, because it procured the *tête de pont* upon the Elbe. In mountainous countries, small forts well situated are worth as much as places, for the question is only to close passages, and not to serve as a refuge to an army; the small fort of Bard came near arresting the army of Bonaparte in the valley of Aosta in 1800.

8. It must be deduced hence that each part of the frontiers of a State ought to be interspersed with one or two great places of refuge, with secondary places, and even with small posts proper for facilitating the operations of the acting armies. Cities surrounded by walls with a shallow ditch, may even be very useful in the interior of the country, for placing therein depôts, storehouses, magazines, hospitals, &c., secure from the light corps which should scour the country; especially if the care of them were confided to the moveable militia, in order not to weaken the army.

9. Great places situated out of strategical directions are a real misfortune for the State and the army.

10. Those which are on the banks of the sea can have importance only in the maritime combinations of war, or for magazines; they may become disastrous for a continental army, in offering to it the deceitful prospect of a support. Benningsen came near compromising the Russian armies in basing himself in 1807, upon Konigsberg, because of the facility which that city gave for supplying himself. If the Russian army, instead of concentrating, in 1812, upon Smolensk, had chosen to support itself upon Dunabourg and Riga, it would have run the risk of being thrown back upon the sea, cut off from all its bases of power, and annihilated.

With regard to the relations which exist between sieges and the operations of active armies, they are of two kinds.

If the army of invasion can dispense with attacking the places which it passes by, it cannot dispense with blockading them, or at least with observing them; in the case in which it should have several of them upon a small space, it will be necessary to leave a whole corps under the same chief who shall invest or observe them according to circumstances

When the army of invasion decides to attack a place, a sufficient corps is charged specially with laying siege to it according to rules; the remainder of the army may either continue its offensive march or take position for covering the siege.

Formerly the false system prevailed of investing a place by a whole army, which buried itself in lines of circumvallation and countervallation, requiring as much expense and trouble as the siege itself. The famous affair of the lines of Turin, 1706, where the Prince Eugene of Savoy forced, with forty thousand men, a French army of seventy-eight thousand, well intrenched, but which, having six leagues of fortifications to guard, found itself everywhere inferior, suffices to destroy this ridiculous system.

Therefore, notwithstanding the just admonition which is experienced at the recital of the marvellous works executed by Cæsar for investing Alisum, and in spite of all that Guichard has said of it, no general of our day would take it into his head to imitate that example.* However, whilst censuring lines of circumvallation, it is necessary to acknowledge the necessity for an investing corps, to double the force of its positions by detached works, which should command the issues by which the garrison or succoring troops could disturb it, as Napoleon did at Mantua, and the Russians at Varna. Be that as it may, experience has demonstrated that the best means of covering a siege is to defeat and pursue as far as possible the corps of hostile troops which should cover it. It is that which should be adopted, unless the numerical inferiority of the forces be opposed to it. In this case it is necessary to take a strategic position which covers the avenues by which the succoring army could arrive, and as soon as it approaches, it is proper to unite as much as possible of the siege corps with the army of observation, in order to fall upon the first, and to decide, by a vigorous blow, whether the siege can be continued or not. Bonaparte, before Mantua, in 1796, has given the model of the wisest and most skilful operations which an army of observation may undertake; we refer our readers then to what we have said of it in the history of the wars of the Revolution.

* Continuous lines are referred to here; we should not neglect to fortify a position of investment by detached works.

INTRENCHED LINES.

Besides lines of circumvallation and countervallation, of which we have spoken above, there exists another kind, which, more vast and extensive still, belong in some sort to permanent fortification, since they are to cover a part of the portion of a State

The system of such intrenched lines is as absurd, as a fortress or intrenched camp constructed to serve as a momentary refuge to an army, is advantageous.

It is conceived that the question here is not of a line of intrenchments of little extent, which would close a narrow gorge; this enters into the system of forts, like that of Fussen or of Charnitz, of which we have spoken; but the question is of lines extended over several leagues and destined to close the whole of a section of frontier, as for example those of Wisesmburg; covered by the Lautern which runs before the front, supported on the Rhine at the right and the Vosges at the left, those lines seemed to fulfill all the conditions necessary for being secure from attack, and yet they were forced as often as they were assailed.

The lines of Stollhofen, which played upon the right of the Rhine the same part as those of Wissemburg upon the left, was not more fortunate. Those of the Queich and of the Kinzig had the same fate.

The lines of Turin, (1706) and those of Mayence (1795), though destined to serve for circumvallation, offer a complete analogy, to all possible lines, if not by their strength, at least by their extent, and by the fate which they experienced.

However well supported these lines may be by natural obstacles, it is certain that independently of their great extent, which paralyses their defenders, they will almost always be susceptible of being turned. To be buried thus in intrenchments where we could be outflanked, enveloped and compromised, and where we are always forced in front even though we should be secure against being turned, is then a manifest folly, which it is to be hoped will never occur again.

Be that as it may, we shall give, in the chapter on tactics (Art. 36), some notions upon the manner of attacking or defending them.

Meanwhile it will not be useless to add here, that as ridiculous as it would seem at this day to bury ourselves in continuous lines, equally absurd would it be to neglect the use of detached works for augmenting the strength of a siege corps, the security of a position, or the defense of a defile which enters, for the rest, into the categories of which we shall treat further on.

ARTICLE XXVII.

RELATIONS OF INTRENCHED CAMPS AND TETES DE PONTS WITH STRATEGY.

It would be misplaced to give here details upon the situation of ordinary camps, upon the disposition and formation of advanced guards, as well as upon the resources which field fortifications offers for the defending of posts. Intrenched camps alone belong to the combinations of grand tactics, and even of strategy, by the support which they lend momentarily to an army.

It will be seen, by the example of the camp of Buntzelwitz, which saved Frederick in 1761, by those of Kehl and of Dusseldorf in 1796, that such a refuge may have a great importance. In 1800, the intrenched camp of Ulm gave Kray the means of arresting for a whole month the army of Moreau upon the Danube. It is known how many advantages Wellington derived from that of Torres-Vedras, and those which Shoomla procured the Turks, for defending the country between the Danube and the Balkan.

The regulating principle to be given upon this matter, is that camps be established upon a point at once strategical and tactical; if that of Drissa was useless to the Russians in 1812, it is because it was placed out of the true direction of their defensive system, which was to pivot upon Smoleusk and Moscow; it was therefore necessary to abandon it at the end of a few days.

The maxims which we have given for determining great decisive points in strategy, may be applied to all intrenched camps, for it is upon such points merely that it is proper to place them. The destination of these camps varies; they may serve equally as points of departure for an offensive operation, as *têtes de ponts* for debouching beyond a great river, as supports for winter cantonments, finally as places of refuge for a beaten army.

Meanwhile, however good may be the site of an intrenched camp, we may be assured, unless it be, like that of Torres-Vedras, on a peninsula, backed, against the sea, and destined to protect the re-embarkation of an insular army, it is very difficult to find a strategical point secure from

being turned by the enemy. So soon as such a point can be turned either by the right or by the left, the army which occupies it will be forced to abandon it, or run the risk of being invested therein; the intrenched camp of Dresden offered in 1813 an important support to Napoleon for two months; as soon as he was outflanked by the Allies, it had not even the advantages which an ordinary place would have procured, for its extent caused to be sacrificed to it two *corps d'armée* which were lost in a few days, for want of provisions.

In spite of these truths, it must be owned that intrenched camps, being seldom destined but to procure a temporary point of support for a defensive army, they may always accomplish their object, though even the enemy might be able to pass beyond them strategically; the essential thing is that they be not liable to be assailed in reverse, that is to say that all its faces be equally secure from a sudden attack, and besides that they be in proximity with a fortress, either for securing the magazines therein, or for covering the front of the camp most adjacent to the line of retreat.

In general such a camp, situated upon a river, with a vast *tête de pont* on the other side to command the two banks, and placed near a great fortified city offering resources, like Mayence or Strasburg, will assure to an army incontestable advantages; but it will never be more than a temporary refuge, a means of gaining time and of assembling reinforcements; when it shall be the question to drive away the enemy, it will ever be necessary to have recourse to open field operations.

The second maxim which may be given upon these camps, is that they are especially favorable for an army at home, or near its base of operations. If a French army threw itself in an intrenched camp on the Elbe, it would none the less be ruined for it, so soon as the space between the Rhine and the Elbe should be occupied by the enemy. But if it were found even momentarily invested in an intrenched camp under Strassburg, it could with the least succor retake its superiority and hold the field: the hostile army which should be invested, itself placed in the middle of France, between the succoring corps and that of the intrenched camp, would have much to do to repass the Rhine.

Thus far we have considered these camps under the exclusively strategical point of view. Meanwhile several German generals have pretended that intrenched camps were calculated to cover places and to prevent their siege, which appears to me a little sophistical. Doubtless a place will be less easy to besiege so long as the army shall remain encamped upon its glacis, and it may be said that those camps and places lend each other a mutual support. But in my opinion the true and principal design of in-

trenched camps will always be to give at need a temporary refuge to an army, or will be an offensive means for debouching upon a decisive point and beyond a great river. To bury an army under a place, to expose it to be outflanked and cut off, merely to retard a siege, appears to me an act of folly. They will cite the example of Wurmser who, they say, prolonged for several months the resistance of Mantua: but did not his army perish therein? Was this sacrifice in reality useful? I do not think so, for the place having been once delivered and re-victualed, and the siege park having fallen into the power of the Austrians, the attack was obliged to be changed to a blockade: now, as the place could only be taken by famine, Wurmser ought rather to have hastened its surrender than retarded it.

The intrenched camps which the Austrians had established before Mayence in 1795 would have prevented, it is true, the siege of that city if the French had had the means of making it, at least as long as the Rhine should not have been crossed. But so soon as Jourdan, in contempt of that camp, showed himself on the Lahn, and Moreau in the Black Forest, it was necessary to raise it and to abandon the place to its own defense. There would be then only the case where a fortress were found situated upon a point so extraordinary that it became impossible to pass beyond without taking it, that we could construct an intrenched camp with the special destination of preventing its attack. What place in Europe can flatter itself with occupying such a site?

Far then from sharing the idea of those German authors, it appears to me on the contrary that a question of considerable importance in regard to the establishment of those intrenched camps in transient fortification, under places in reach of a river, would be to decide, whether it were better that the camp be situated upon the same bank as the place, or rather if the latter should not be found on the opposite bank. In the case where it should be indispensable to choose between these two propositions, in default of being able to situate the place in a manner to embrace the two banks at the same time, I should not hesitate to pronounce for the latter course.

In fact, in order to serve as a refuge or to favor a debouch, it is very necessary that the camp be beyond the river on the side of the enemy: in this case the principal danger to be feared would be that the enemy should take the camp in reverse by passing the river some leagues farther off: now if the place were found on the same side as the camp, it would be of no use to him, whereas if it were found constructed on the opposite bank in front of the camp, it would be almost impossible to take it in reverse.

Thus the Russian army, which could not hold the camp of Drissa twenty-four hours (in 1812), would have been able to brave the enemy therein for a long time, if a place had existed on the right bank of the Dvina in order to put the rear of the camp under shelter. Thus Moreau braved for three whole months all the efforts of the Arch-Duke Charles at Kehl, whereas if Strassburg had not been on the opposite bank, the camp could easily have been turned by a passage of the Rhine.

In truth it would be desirable that the camp should have also its protection upon the same bank, and under this aspect a place holding both banks would well fulfill the double destination. That of Coblentz, recently constructed seems to mark the epoch of a new system: that which the Prussians have adopted at this place, and which participates at the same time of intrenched camps and permanent places, would merit a profound examination; but if this vast establishment offers some defects, it may be affirmed nevertheless that it would also offer immense advantages to an army destined to operate on the Rhine.

In fact, the inconvenience of temporary intrenched camps established on great rivers, is that they are scarcely useful except when they are found beyond the river, as we have said. Now in this case, they are exposed to all the dangers resulting from a capture of the bridges, which might place the army in the same position as that of Napoleon at Essling, and would leave it exposed to a total want of provisions or munitions, as well as to the perils of an attack by storm from which field works would not always be secure. The system of detached forts in permanent fortifications, such as has been applied at Coblentz, offers the advantage of averting these dangers, by putting the magazines under shelter of the city—situated upon the same bank as the army, and by guaranteeing the latter against an attack, at least until the establishment of the bridges. If the city were on the right bank of the Rhine, and there existed only an intrenched camp of field works on the left of the river, there would be on the contrary no positive security, either for the magazines or for the army.

In the same manner if Coblintz were a good ordinary fortress, without detached forts, a considerable army would not find therein an asylum so easily, and especially would it have much less facility for debouching therefrom in presence of an enemy. However if Coblentz is a formidable establishment the fortress of Ehrenbreitstein, which is to protect the right bank, is defective in being of so difficult access that the blockade of it would be all the more easy as the debouch for a considerable army could be effectively disputed.

The new system employed by the Arch-Duke Maximiliun for fortifying the intrenched camp of Linz by means of towers in masonry has been much spoken of for some time past. As I am only acquainted with it by hearsay I could not reason upon it particularly. I only know that the system of towers which I have seen employed at Genoa by the skillful Colonel Andreas, has appeared to me susceptible of being turned to account and improved. I have been assured that the towers constructed at Linz sunk in the ditches and covered by the glacis, had the advantage of giving a razant and cross fire, and of being concealed from the direct shots of the enemy's cannon. Such towers well flanked and connected by a parapet, may make a very advantageous camp but always subject nevertheless to the inconvenience of closed lines. If the towers are isolated and covered with care in the intervals by field works which could be thrown up in time of war, they will be better doubtless than a camp covered merely by *flèches* and ordinary redoubts, but they do not seem to offer as many advantages as the great detached forts of Coblentz. These towers are forty in number, armed each with six pieces which can be concentrated on whichever side may be desired; their fire may be crossed; they are connected by a palisaded covered way, and by a broad ditch. There are besides a fort or cidatel and three great towers on the left bank of the Danube. Whatever defect may be found in such an establishment, there is no doubt that it would have exercised a great influence upon the events of 1805 and 1809 if it had existed at that epoch, for the strategic point is the best chosen, as well as all those of the other establishments which Austria has made since 1814.*

For the rest localities enter for much in the choice of the different systems, and the essential problem to resolve, for such establishments "is to give with the least possible expense a temporary shelter to an army, with every security for one's depôts and every facility for debouching offensively, when the opportune moment shall have arrived." Now a system may fulfill this object whatever otherwise may be its defects against a regular attack.

TÊTES DE PONTS.

Of all the works of field fortification there are none as important as *têtes-de-ponts*. The difficulties which the passage of rivers and especially

* See note at the end of the volume.

of great rivers offer when they have place in front of an enemy, suffice to demonstrate the immense utility of têtes-de-ponts; we can indeed do much better without intrenched camps than without these works, for in putting your bridges secure from insult you secure yourself against all the disastrous chances which could result from the forced retreat upon the banks of a river.

When those têtes-de-ponts serve as a redoubt to a large intrenched camp they are then doubly advantageous; they will be triply so if they embrace likewise the bank opposite to that where the camp should be seated, since then these two establishments will lend each other a mutual support, and will equally assure the two banks. It would be useless to add that those works are especially important in a hostile country, and upon all fronts where there should not exist a permanent place which could dispense with them. I shall observe still that the principal difference between the system of intrenched camps and that of têtes-de-ponts, is that the first are preferable when they are composed of detached and closed works, whilst that têtes-de-ponts will oftener be contiguous enclosed works: but if they are composed of detached works a feeble corps would suffice to secure them from insult.

As for the rest those intrenchments enter into the same class as those of camps, and as their attack or defense belongs more particularly to tactics, we shall speak of them in Chapter IV, Article 36; it suffices to have pointed out here their strategical importance.

ARTICLE XXVIII.

DIVERSIONS AND GREAT DETACHMENTS.*

The detachments which an army may be called upon to make in the

* Colonel Wagner, in his translation already cited, has been pleased to make upon this article observations, the justness of which I have appreciated, and which have decided me to re-write it entirely. If we still differ in the manner of looking at some points, I am pleased to think that they will be of little importance

I have hesitated whether to place this article in the chapter of strategy or in that of mixed operations (Chap. 8) but it appears to me to belong definitively more particularly to strategic operatieus.

course of a campaign, are so closely connected with the success of all its enterprises, that they should be regarded as one of the most important, but also one of the most delicate branches of war.

In fact if nothing is more useful than a great detachment when it is seasonably made and well combined, nothing is more dangerous when it is made in an inconsiderate manner. Frederick the Great even counted in the number of the most essential qualities of a General that of knowing how to induce his adversary to detachments, either in order to carry them off, or to attack the army during their absence.

The mania of detachments has been so much abused that, by a contrary excess, many have believed in the possibility of doing without them. Doubtless it would be much more sure and agreeable to keep an army united in a single mass; but as it is a thing entirely impracticable, it is very necessary to be resigned to make detachments when it becomes indispensable to the success of the enterprise which it should be wished to form. The essential thing is to make as few of them as possible.

There are several kinds of them:

1. The great corps thrown outside of the zone of operations, in order to effect divisions upon points more or less essential;

2. The great detachments made in the zone of operations to cover the important points of that zone, to form a siege, to guard a secondary base, and to protect the line of operations if it be menaced;

3. The great detachments made upon fronts of operations, in face of the enemy, to concur directly in a concerted enterprise;

4. The small detachments thrown at a distance to attempt *coups-de-main* upon posts the taking of which might act favorably.

I understand by diversions, those secondary enterprises formed far from the principal zone of operations, at the extremities of a theatre of war, and upon the concurrence of which the success of a campaign should be foolishly calculated. Such diversions are only useful in two cases, that where the corps employed in making it should be out of condition, from its distance, to be put in action elsewhere; or else when it should be thrown upon a point where it would find a great support among the population, which enters in the domain of political combinations more than in those of the military art. A few examples will not be out of place to illustrate this.

The fatal results which the expedition to Holland by the Anglo-Russians, and that of the Arch-Duke Charles, had had upon the affairs of the Allies

at the end of 1799, and which we have pointed out in Article 19, are yet present to the memory of every body.

In 1805, Napoleon occupied Naples and Hanover; the Allies thought to send the Anglo-Russian corps to drive him out of Italy, and the Anglo-Russian and Sweedish corps to repel him from Hanover; nearly sixty thousand men are destined for these two centrifugal expeditions. But whilst their troops were assembling at the two extremities of Europe, Napoleon has ordered the evacuation of Naples and Hanover; St. Cyr comes to join Massena in the Frioul, and Bernadotte, quitting Hanover, comes to take an active part in the events of Ulm and Austerlitz: after those astonishing successes, Naples and Hanover were easily retaken. These are proofs against diversions: let us cite an example of the circumstances where they would be suitable.

In the civil wars of 1793, if the Allies had detached from their armies twenty thousand veteran troops to disembark them in Vendée, they would have produced a much greater effect than by augmenting the masses which warred without success at Toulon, on the Rhine and in Belgium. Here is a case where a diversion might have been not only very useful, but decisive

We have said that independently of remote diversions and of light corps, great detachments were frequently employed within the zone of the operations of an army.

If the abuse of these great detached corps for objects more or less secondary, presents still, more dangers than the abuse of diversions, it is nevertheless but just to acknowledge that they are often advantageous, at times even indispensable.

Those detachments are of two principal kinds: the first consists in the permanent corps which we are obliged sometimes to establish in a direction opposed to that on which we are operating, and which are to manœuvre thereon during the whole campaign; the others are corps detached temporarily to exercise a salutary influence upon any enterprise whatever.

In the number of the first ought to be placed, before all, the fractions detached armies, whether for forming the strategic reserve of which we have spoken, or for covering lines of operations and of retreat, when the configuration of the theatre of war may leave them exposed to the blows of the enemy. For example, a Russian army, wishing to cross the Balkan, is forced to leave a part of its forces to observe Shoomla, Ruschuk and the valley of the Danube, the direction of which is such that it chances to fall perpendicularly upon the line of operations: whatever success be ob-

tained, it will always be necessary to leave a respectable force either near Giurgewo, or near Craiova and even to the right of the river near Ruschuk.

This single example suffices to prove that there are cases where a double front of operations could not be dispensed with, which from that time will require considerable corps to be detached to show front to a portion of the hostile army which might be left in rear. We could cite other localities and other circumstances where this measure would not be less necessary; the one is the double front of operations of the Tyrol and the Frioul for a French army which passes the Adige; on whatever side it wishes to direct its principal effort, it could not do it without leaving upon the other front, a corps proportioned to the hostile forces which might there be found, otherwise it would abandon all its communications. The third example is the frontier of Spain, which presents also to the Spaniards the facility of presenting a double front of operations, the one covering the direct road to Madrid, the other being based either upon Saragossa, or upon Galicia; on whatever side it is wished to act, a detachment proportioned to the enemy must be left near the other.

All that can be said upon this matter, is that it is advantageous to enlarge as much as possible the field of operations, and to render moveable those forces left in observation, whenever it can be done, and that it will be the object to strike decisive blows. One of the most remarkable proofs of this truth was given by Napoleon in the campaign of 1797. Obliged to leave a corps of fifteen thousand men in the valley of the Adige, to hold the Tyrol whilst directing himself on the Noric Alps, he preferred to draw in this corps at the risk of compromising for a moment his line of retreat, rather than leave the two fractions of his army disunited and exposed to be overthrown in detail. Persuaded that he should conquer with his army if he united it, he judged that the momentary presence of a few hostile detachments upon his communications would not then be dangerous.

Great moveable and temporary detachments are made for the following motives:

1. To constrain the enemy to a retreat by menacing his line of operations, or to cover your own;

2. To march to meet a hostile corps, and to prevent its junction, or to facilitate the junction of an expected reinforcement;

3. To observe and to hold in check a great fraction of the hostile army, whilst you project striking a blow at the other portion of that army;

4. To seize a considerable convoy of provisions or of munitions upon which would depend the continuation of a siege, or the success of a strategical enterprise; to protect the arrival of a convoy which you yourself may expect;

5. To operate a demonstration with a view to drawing the enemy in a direction where you desire him to march, in order to facilitate an operation undertaken on another side;

6. To mask and even to invest one or several great places for a given time, whether you may wish to attack them, or whether you desire merely to shut up the garrison in its ramparts;

7. To carry an important point upon the communications of an enemy already in retreat.

However seductive it may appear to obtain the divers objects indicated in this nomenclature, it must be owned, nevertheless, that these are always objects more or less secondary, and that the essential thing being to triumph on decisive points, you must guard against yielding to the attractions of multiplied detachments, for many armies have been seen to succumb for not having known how to remain concentrated.

We shall recall here several of those enterprises to prove that their success or their loss depends, sometimes upon seasonableness, sometimes upon the genius of him who directs them; oftener still upon faults of execution. Every one knows how Peter the Great preceded the destruction of Charles XII, by causing to be captured, by a considerable corps, the famous convoy which Lowenhaupt conducted. It is generally recollected how Villars completely defeated at Denain the great detachment which Prince Eugene had made under Albemarle.

The destruction of the great convoy which Laudon took from Frederick during the siege of Olmutz, obliged the king to evacuate Moravia. The fate of the two detachments of Fouquet at Landshut, in 1760, and of Fink at Maxen, in 1795, equally attests how difficult it is to avoid the necessity of making detachments and the danger which results therefrom.

Later still, the disaster of Vandamme at Culm, was a cruel lesson for corps advanced too audaciously; however, it must be admitted that in this last occasion the manœuvre was skillfully meditated, and that the fault was less having pushed the detachment than in not having sustained it as could easily have been done. That of Fink was destroyed at Maxen almost upon the same ground and for the same reason.

With regard to demonstrative divisions made in the same sphere with the army, they have a positive advantage, when they are combined with

the object of making the enemy arrive upon a point where it is convenient to fix his attention, whilst the weight of the forces are assembled upon a quite opposite point where it is desired to strike an important blow. It is necessary then not only to avoid engaging the corps which is employed in this demonstration, but to recall it promptly upon the main body; we shall cite two examples, which will prove the opportuneness of this precaution.

In 1800, Moreau, wishing to deceive Kray upon the true direction of his march, caused his left wing to be carried from Kehl towards Rastadt, whilst he filed with his army upon Stockach; his left, after simply showing itself, fell back then towards his centre by Friburg in Brisgau.

In 1805, Napoleon, master of Vienna, threw the corps of Bernadotte upon Iglau, to scatter terror in Bohemia, and to paralyse the Arch-Duke Ferdinand, who was assembling a corps; he launches on the other side Davoust upon Presburg to impose upon Hungary; but he changed them immediately upon Brunn, in order that they should come and take part in the events which were to decide the whole campaign, and a signal victory became the result of these wise manœuvres. Those kinds of operations, far from being contrary to principles, are necessary to favor their application.

It will easily be conceived, from all that precedes, that absolute maxims could not be given upon operations so varied, and the success of which depends upon so many particulars thus difficult to seize. It will be for the talents and the *coup d'œil* of generals to judge when they should risk those detachments; the only admissable precepts we have already presented; they are to make as few of them as possible, and to draw them in as soon as they have accomplished their mission.

For the rest their inconvenience can be remedied in part, by giving good instructions to those who command them; it is in this that consists the greatest talent of a general of the staff.

Since we have cited the small detachments destined for *coups de main*, in the number of those which may be useful, we shall indicate a few of this nature, which will enable us to form a judgment thereon. We recollect the one which the Russians executed at the end of 1828, for seizing Sizepoli, on the Gulf of Burgas. The taking of this feebly intrenched post, which was hastily put under cover, procured, in case of success, an essential point of support beyond the Balkan, for establishing therein beforehand the depôts of the army which was to cross those mountains; in case of non-success it would compromise nothing, not even the little corps which had an assured retreat upon its vessels.

In the same manner, in the campaign in 1796, the *coup de main* attempted by the Austrians upon Kehl, and for destroying its bridge whilst Moreau was returning from Bavaria, could have had important results if it had not failed.

In these kinds of enterprises we risk little for gaining a great deal, and as they could not compromise in any manner the mass of the army, they cannot but be approved.

Light corps thrown in the midst of the hostile zone of operations, are to be classed in the same category; some hundreds of horsemen thus hazarded are never a grave loss, and may often cause considerable detriment to the enemy. The light detachments made by the Russians in 1807, 1812 and 1813, seriously disturbed the operations of Napoleon, and at times caused them to fail by intercepting his orders and all his communications.

We employ in preferencc for those kinds of expeditions, officers at once dexterous and bold, known under the name of partisans; veritable *enfants perdu*, they are to do all the evil they can to the enemy without too much compromising themselves; doubtless, when the occasion presents itself for striking an important blow, they ought also to know how to dash headlong upon the enemy; but in general, address and presence of mind in avoiding all useless danger, are, still more than systematic audacity, the true qualities necessary to a partisan. I refer for the rest to what I have said of them in Chapter XXXV, of the treatise on grand operations, and to Article 45 farther on, upon light cavalry.

ARTICLE XXIX.

STRATEGICAL OPERATIONS IN MOUNTAINS.

We should not have presented strategy under all of its aspects, had we not traced a sketch of the part it may have in the operations of a mountain warfare. We do not pretend to analyse those local intricacies of posts reputed almost impregnable, which form the romantic part of the tactics of combats; we shall seek to indicate merely the relations of a moun-