

## CHAPTER VI.

### LOGISTICS, OR THE PRACTICAL ART OF MOVING ARMIES.

#### ARTICLE XLI.

##### A FEW WORDS UPON LOGISTICS IN GENERAL.

Is logistics merely a science of detail, or is it on the contrary a general science, forming one of the most essential parts of the art of war? or finally might it be only an expression consecrated by use, to designate vaguely the different branches of the staff service, that is to say, the divers means of applying the speculative combinations of the art, to effective operations?

These questions will appear singular to those who are in the firm persuasion that there is nothing more to say upon war, and that it is wrong to seek new definitions when all seems to them so well defined. As for myself, who am persuaded that good definitions lead to clear conceptions, I own that I am almost embarrassed to resolve those questions in appearance so simple.

In the first editions of this work, I have, after the example of many

military men, ranged logistics in the class of details of execution of the staff service, which make the object of the regulations of the field service, and of a few special instructions upon the corps of quarter-masters. This opinion was the result of prejudices consecrated by time; the word logistics is derived, as we know, from that of *major general des logis*, (translated in German by that of *Quartiermeister*,) a kind of officers whose functions were formerly to lodge or encamp the troops, to direct the columns, and to place them upon the ground. This was the limit of logistics which, as we see, embraced nevertheless ordinary castrametation. But after the new manner of making war without camps, movements were more complicated, and the staff had also more extensive attributes. The chief of the staff was charged with transmitting the thoughts of the generalissimo upon the farthest removed points of the theatre of war, to procure him all the documents for basing his operations. Associated in his combinations, called upon to transmit them, to explain them, and even to watch over their execution as a whole, as well as of their least details, his functions extend necessarily to all the operations of a campaign.

From that time, the science of a chief of staff was to embrace also the different parts of the art of war, and if it be this which is designated under the name of logistics, the two works of the Arch-Duke Charles, the voluminous treatise of Guibert, of Laroche-Aymon, Bousmard, and of the Marquis de Ternay, would scarcely suffice to sketch the incomplete course of such a *logistique*, for it would be nothing less than the science of the application of all the military sciences.

From what precedes, it seems to result naturally that the ancient logistics could no longer suffice to designate the science of the staff, and that the present functions of this corps would still require to be reduced to form, partly into a body of doctrines, partly into regulating dispositions, if it were wished to give it any instruction which should fully respond to its object. It would be for governments to take the initiative, by publishing well considered regulations, which, after having traced all the duties and the attributes of the chiefs and officers of the staff, would be followed by clear and precise instructions for tracing for them also the methods most proper for fulfilling those duties.

The Austrian staff had formerly such regulating instructions; but somewhat superannated, it was found more appropriate to the old methods than to the new system.

This work is for the rest, the only one of that kind which has reached me; I do not doubt that there exist others, either published, or secret; but I frankly own my ignorance upon this subject. A few generals, like



Grimoard and Thieubaut, have brought to light staff manuals; the new royal corps of France has caused to be printed several partial instructions, but a satisfactory whole exists yet nowhere. I believe that General Bourtoulin has the project of publishing soon an instruction addressed to his officers when he was quarter-master general, and we can only wish that it be realized without delay, for it cannot fail to throw much light upon this interesting subject, upon which there yet remains much to say.

If it be acknowledged that the ancient logistics was only a science of details for regulating every thing material in regard to marches; if it be asserted that the functions of the staff embrace at this day the most elevated functions of strategy, it must be admitted also that logistics is no longer merely a part of the science of the staff, or rather that it is necessary to give it another development, and to make of it a new science, which will not only be that of the staff, but that of generals-in-chief.

In order to be convinced of this, let us enumerate the principal points that it ought to embrace, in order to comprehend all that which relates to the movements of armies, and to the enterprises which result from them.

1. To cause to be prepared beforehand all the material objects necessary for putting the army in motion, that is to say, for opening the campaign. To draw up the orders, instructions and routes, (*Marschroute*) for assembling it and putting it afterwards in action.

2. To draw up all the orders of the general-in-chief for the different enterprises, also the plans of attack for anticipated or premeditated combats.

3. To concert with the chiefs of engineers and artillery, the measures to be taken for putting in security the different posts necessary to the establishment of the depôts, as also those which it would be proper to fortify to the end of facilitating the operations of the army.

4. To order and direct the reconnoissances of every kind, and to procure as well by this means as by espionage, information as exact as possible of the positions and movements of the enemy.

5. To take all measures for combining the movements ordered by the general-in-chief. To concert the marches of the different columns, to the end that they be made with order and harmony, to be assured that all the means used for rendering these marches at the same time easy and certain, be prepared to that effect; to regulate the mode and time of halts.

6. To compose and direct well by good instructions the advanced and rear guards, as well as the corps detached, either as flankers or with other

destinations. To provide those different corps with all the objects necessary for accomplishing their mission.

7. To resolve upon the forms and instructions to the chief of corps or their staffs, for divers methods of distributing the troops of the columns within reach of the enemy, also for forming them the most suitably when it shall be necessary to get into line for combat, according to the nature of the ground and the kind of enemy to be encountered.\*

8. To indicate to the advanced guards, and other detached corps, points of assembling well chosen, for the case in which they should be attacked by superior forces, and to cause them to know what support they may expect to find at need.

9. To order and to watch over the march of the parks of equipage of munitions, of provisions and ambulances, as well in the columns as in the rear, in such a manner that they do not constrain the troops, at the same time remaining in proximity with them; to take measures of order and of security, either in march or in quarters and *wagenburg*, (barricades of wagons.)

10. To look to the successive arrival of convoys destined to replace the provisions or munitions consumed. To assure the assembling of all the means of transport, as well of the country as of the army, and to regulate their employment.

11. To direct the establishment of camps, and to regulate the service for their security, order and police.

12. To establish and to organize the lines of operations and staple lines of the army, as well as the communications of detached corps with those lines. To designate officers capable of organizing and commanding the rear of the army; to watch over the security of the detachments and convoys; to provide them with good instructions; to watch also over the maintenance of the means of communication between the army and its base.

13. To organize, upon this line, the depôts of convalescents, of disabled, of the feeble, the movable hospitals, the workshops; to provide for their safety.

14. To keep an exact note of all the detachments formed, either upon the flanks or upon the rear; to watch over their fate and their return, so soon as they shall be no longer necessary; to give them at need a centre of action, and to form of them strategic reserves.

15. To organize marching battalions, or companies for collecting together isolated men, or small detachments going from the army to the base of operations, or from this base to the army.

\* The question is here general instructions and forms, and not repeated for each daily movement. This would be impracticable.



16. In case of sieges, to order and watch over the service of the troops in the trenches, and to concert with the chiefs of engineers upon all the labors to be prescribed to those troops, and upon their conduct in sorties, as well as in assaults.

17. To take in retreats, the precautionary measures necessary for assuring their order; to place relay troops, whose duty it shall be to sustain and relieve those of the rear guard; to charge intelligent officers of the staff with the reconnaissance of all the points where the rear guards will be able to resist with success, in order to gain time; to provide in advance the movement of the *impedimenta*, to the end of abandoning nothing of the *materiel*; to maintain in them a strict order, and to take precautions for watching over their security.

18. For cantonments, to make the distribution of them between the different corps, to indicate to each of the army corps the place of general rendezvous in the event of an alarm, to prescribe measures of *surveillance*, and to see that the regulations are punctually executed.

Upon the examination of this vast nomenclature, which might still be increased by many minute articles, every one will exclaim that all these duties are as much those of the generalissimo as those of the staff; this is a truth which we have just this moment proclaimed, but it is incontestable also that it is precisely in order that the general-in-chief may be able to devote all his care to the supreme direction of operations, that he has been given a staff charged with the details of execution; hence all their attributes are necessarily in common, and woe to the army when those authorities cease to make but one; that happens meanwhile only too frequently, first, because generals are men, and have all their defects, and then because there is not wanting in the army, interests or pretensions in rivalry with the chiefs of the staff.\*

There could not be expected in our summary a complete treatise for regulating all the points of this almost universal science of the staff; for in the first place, every country assigns to this corps a more or less extended sphere of action, so that there would be necessary a different treatise for every army; then many of those details are found as much in the works above cited as in that of Colonel Lallemand, entitled *Treatise on the Secondary Operations of War*; in that of Marquis de Ternay; finally, in the first work of the Arch-Duke, entitled *Grundsätze der hohen Kriegskunst*.

\* The chiefs of the artillery, of the engineers and of the administration, all pretend to work with the general-in-chief, and not with the chief of the staff. Doubtless nothing should prevent the direct relations of those authorities with the general-in-chief; but he ought to labor with them in presence of the chief of the staff, and to send him all their correspondence; otherwise there would be confusion.

I will limit myself then to presenting a few ideas on the first articles of the nomenclature which precedes.

1. The measures which the staff should take to prepare for the entrance into the field, embrace all those which are of a nature to facilitate the success of the first plan of operations. We ought naturally to be assured by inspection of the different services, that all the *materiel* is in good condition; the horses, the carriages or caissons, the teams, the harness, the shoeing ought to be examined and completed. The pontoon train, the chests of engineer implements, the *materiel* of the artillery, the siege train, if it is to be moved, that of the field hospital, in a word, all that constitutes the *materiel* ought to be verified and put in good condition.

If the campaign be opened in the neighborhood of great rivers, it will be necessary to prepare beforehand gun boats and flying bridges, to cause to be collected all the means of embarkations on the points and at the bank where it is desired to use them. Intelligent officers will reconnoitre the points the most favorable, as well for the embarkation as for the debarkation, preferring the localities which offer the most certain chances of success, for a first establishment upon the opposite bank.

The staff will indicate all the routes which will be necessary to lead the different corps of the army upon the points of assembling, applying themselves especially to directing the marches in such a manner as to do nothing to warn the enemy relative to the enterprises that it should be designed to form.

If the war is offensive, one will confer with the chiefs of engineers upon the labors to be executed in proximity with the base of operations, in the case where têtes-de-ponts or intrenched camps should there be constructed.

If the war is defensive, those labors will be ordered between the first line of defense and the second base.

2. An essential part of logistics is, without contradiction, that which concerns the drawing up of dispositions for marches or attacks, resolved upon by the general-in-chief, and transmitted by the staff. The first quality of a general, after that of knowing how to form good plans, will, unquestionably be to facilitate the execution of his orders by the lucid manner in which they shall be written. Although this is in reality the business of his chief of staff, it will ever be from the commander-in-chief that will emanate the merit of his dispositions if he be a great captain; in the contrary case the chief of staff will supply this as much as possible, by concerting well with the responsible chief.



I myself have seen employed two quite opposite systems for this important branch of the service; the first, which may be called the old school, consists in giving every day, for the movements of the army, general dispositions filled with minute and, in some instances, scholastic details, all the more misplaced, as they are ordinarily addressed to chiefs of corps sufficiently experienced not to be conducted in leading strings, like sub-lieutenants just from school.

The other system is that of the isolated orders given by Napoleon to his marshals, prescribing to each what concerned him particularly, and limiting himself at most to giving them a knowledge of the corps destined to operate in common with them, either to the right or to the left, but never tracing for them the *ensemble* of the operations of the whole army.\* I have had reason to be convinced that he acted thus systematically, either for covering the *ensemble* of his combinations by a mysterious veil, or from the fear that orders more general happening to fall into the hands of the enemy would aid the latter to defeat his projects.

Doubtless it is very advantageous to keep one's enterprises secret, and Frederick the Great said with reason that if his night-cap knew what he had in his head, he would throw it into the fire. This secrecy might be practicable in times when Frederick encamped with all his army lying around him; but upon the scale on which Napoleon manoeuvred, and with the present mode of making war, what harmony could be expected on the part of generals who should be absolutely ignorant of what passes around them.

Of these two systems, the last appears to me preferable; however, a medium might be adopted between the laconism often carried to excess by Napoleon, and the minute verbiage which prescribed to experienced generals such as Barclay, Kleist and Wittgenstein, the manner in which they should break by platoons, and reform on arriving at their positions; a puerility all the more lamentable that it became impracticable in the face of the enemy.† It will suffice, in my opinion, to give to the generals

\* I think that at the passage of the Danube before Wagram, and at the beginning of the second campaign of 1813, Napoleon deviated from his custom by sketching a general order.

† I shall be reproached, perhaps, for interdicting here to chiefs of the general staff, those same details which I place above in the number of their important duties; which would be unjust. Those details are, in fact, within the range of the staff, which is not saying that the Major General cannot confide them to the delegates in each of the army corps marching separately. He will have sufficient to do to direct the whole, and to watch particularly over the marches of the main body which ordinarily accompany the general headquarters of the army. We see then that there is no contradiction.

special orders for what concerns their army corps, and to join to them a few lines in cipher to indicate to them, in a few words, the *ensemble* of the operation, and the part which is reserved to them. In default of this cypher, a verbal order will be confided to an officer capable of rightly conceiving it, and of rendering it exactly. Indiscretion would no longer be feared, and the *ensemble* of the operations would be assured. *x mity*

Be this as it may, the draughting of those dispositions is in itself a very important thing, although it does not always accomplish what might be expected from it; every one writes his instructions according to his views, his character, his capacity, and nothing could better indicate the degree of merit of the chiefs of an army, than the attentive perusal of the instructions which they have given to their lieutenants—it is the best biography that could be desired.

But it is time to quit this digression, in order to come to the article upon marches.

3. The army being assembled, and wishing to set about any enterprise whatever, the question will be to put it in motion with all the harmony and precision possible, taking all the measures in use for keeping it well informed, and covering it in its movements.

There are two kinds of marches, those which are made out of view of the enemy, and those which have place in his presence when the question is to retire, or attack him. These marches, especially, have undergone great changes in the late campaigns. Formerly, armies seldom attacked each other until after having been several days in presence; then the attacking party caused to be opened by the pioneers parallel roads for the different columns. Now they attack more promptly, and are contented with existing roads. It is essential, however, when an army is in march, that pioneers and sappers follow the advanced guards to multiply the issues to overcome difficulties, to throw at need small bridges over the streams, and to assure frequent communication between the various army corps.

In the present manner of marching, the calculation of time and of distances has become more complicated; the columns of an army all having different spaces to pass over, it is necessary to know how to combine the moment of their departure and their instructions:—1st, with the distances which they have to traverse; 2d, with the more or less considerable *materiel* that each will drag in its train; 3d, with the more or less difficult nature of the country; 4th, with the reports as to the obstacles which the enemy may oppose to them; 5th, with the degree of importance there should be as to their march being concealed or open.



In this condition of things, the means which appear the most sure and the most simple for ordering the movements, either of great corps forming the wings of the army, or of all those which should not march with the column where the general headquarters are found, will be to trust for their details to the experience of the generals commanding these corps, having care to habituate them to a great punctuality. Then it will suffice to indicate to them the point and the object which they seek to attain, the route which they are to take, and the hour at which it is expected that they will arrive in position. Well understood that they are to be made acquainted with the corps which should march either with them or upon the lateral routes to the right and to the left, in order that they may be able to regulate themselves accordingly; finally they will be informed of what is known as to the presence of the enemy, and will have indicated to them a direction of retreat, if they should be constrained to one.\*

All the details which should here tend to prescribe daily to the chiefs of those corps the manner of forming their columns and of putting them in position, are pedantries more injurious than useful. To require that they march habitually according to all the rules or usages adopted, is a necessary thing; but they must be left the latitude of organizing their movements so as to arrive at the hour and the point indicated, under pain of sending them from the army if they fail in it by their fault or their ill will. In retreats, nevertheless, which should be made in echelons upon a single route, it would be necessary to take precise measures for departures and halts.

As a matter of course, each column should have its small advanced guard and its flankers, in order to march according to the requisite precautions, and it is proper, even when they should march as a second line, that at their head there be found always a few pioneers and sappers of the divisions, with implements for opening the necessary marches, or to repair the accidents which might happen; some of these workmen should be assigned to each column of the park. For the same reason a light equipage of trestles, for throwing small bridges, will always be of great utility.

4. An army often marches preceded by a general advanced guard, or what is more frequent in the modern system, the main body and each of the wings have their particular advanced guard. It is rather common

\* Napoleon never did it, because he pretended that one ought never to believe beforehand in the possibility of being beaten. In many marches it is, in fact, a useless precaution, but in very many cases it is indispensable.

for the reserves and the centre to march together with the general headquarters, and according to every probability the general advanced guard, where there shall be one, will follow the same direction, so that half of the army will be thus agglomerated upon the central route. It is in those circumstances especially that it is necessary to know well how to take measures for avoiding encumbrance. It also happens, at times, that great blows, requiring to be directed upon a wing, the reserves and the general headquarters, even sometimes the general advanced guard are transported to the same side; in this case, all that which is indicated for the movements of the centre will be equally practicable and advisable.

It is essential that the advanced guards be accompanied by good officers of the staff, capable of judging well of the movements of the enemy, and of rendering an account of them to the general-in-chief in order to enlighten his resolutions, which the commandant of the advanced guard will also do on his part. Of course, a general advanced guard ought to be composed of light troops of all arms; some choice troops as a main body, a few dragoons equipped for fighting on foot, horse artillery, pontoniers, sappers, &c., with light trestles and pontoons for passing small rivers, a few carbiniers, good marksmen, will not be misplaced; and a topographical officer should equally follow to take a rough sketch of the country to a half league or more, from each side of the route. Finally, it is indispensable to add to it the irregular cavalry as scouts, as much for sparing the good cavalry, as because the irregular troops are the most apt at this service.

5. In proportion as the army advances and is removed from its base, the laws of a good *logistique* indicate the necessity of organizing the line of operations and staple lines, which should serve as a bond between the army and this base. The staff will divide these storehouses into districts, of which the chief place shall be in the city the most important for its resources in lodgings and in supplies of every kind; if there be a military post, the principal place will be established there in preference.

The storehouses placed at the distance of from five to ten leagues, according to existing cities; but, on an average of seven or eight leagues, would thus be to the number of fifteen upon a line of one hundred leagues, and would form from three to four magazine brigades. Each one of them would have a commander with a detachment of troops or of convalescent soldiers, for regulating the quarters, and to serve at the same time as a protection to the authorities of the country, (when they remain;) they will furnish safeguards to the post relays, and the necessary escorts; the commandant will see to the good condition of the routes and bridges.



As much as possible there ought to be made small magazines, and a park of a few wagons, in each of the dépôts, or at least at the principal places of the brigades.

The command of the territorial divisions will be confided to provident and capable general officers, for upon their operations often depend the security of the communications of the army.\* Those divisions can even, according to circumstances, be transformed into strategic reserves, as we have said in Article 24; some good battalions, aided by detachments unceasingly going from the army to its base, and from the base to the army, will almost always suffice for keeping up the communications.

6. With regard to measures half logistical, half tactical, by means of which the staff should bring the troops from the order of march to the different orders of battle, it is a study as important as it is minute. The three works which we have cited, have sufficiently sifted this matter to dispense with our following them on grounds so arduous; those questions could only be treated by taking up those details which make the merit of these works, and which are altogether beyond the limits of this. Besides, what would remain to us to say after the two volumes which M. de Ternay and Colonel Koch, his commentator, have devoted to the demonstration of all the logistical combinations of the movements of troops, and of the different processes of formation? And if many of those processes are very difficult to put in practice before an enemy, their utility will be acknowledged, at least, for the preparatory movements executed out of his reach; thanks to that excellent manual, to the treatise of Guibert, and to the first work of the Arch-Duke (*Gransatze der hoheren Kriegskunst*) we may easily instruct ourselves in all those logistical operations which are not permitted to us to pass over in silence, but which it suffices for our plan to point out.

Before quitting this interesting subject, I think it my duty to refer to some remarkable events in order to cause to be appreciated all the importance of good logistics: the one is the miraculous assembling of the French army in the plains of Gera in 1806; the second is the opening of the campaign in 1815.

In both of these events Napoleon knew how to collect together, with

\* It will be objected that in national wars these magazines are impracticable. I shall say, on the contrary, that in such they will often be hazardous; but that it is in such precisely that they should be established upon a greater scale, and that they are the most necessary. The line from Bayonne to Madrid had a similar staple line, which resisted four years all the attacks of the guerrillas, although some convoys were taken; it was even extended for a time to Cadiz.

an admirable precision, upon the decisive point of the zone of operations, his columns which had departed from the most divergent points.

The choice of this decisive point was a skillful strategic combination, the calculation of the movements was a logistical operation which emanated from his closet. For a long time it was pretended that Berthier was the author of those instructions conceived with so much precision, and communicated generally with so much lucidity. I have had a hundred occasions to be assured of the falsity of this assertion. The Emperor was himself the true chief of his staff, furnished with a compass opened at a scale of from seven to eight leagues in a right line, (which supposes always nine or ten leagues, at least, by the sinuosities of the routes,) leaning over and sometimes lying down upon his map, where the positions of his army corps and the presumed positions of the enemy were marked with pins of different colors, he ordered his movements with an assurance of which it would be difficult to form a just idea. Moving his compass with vivacity upon this map, he judged in the twinkling of an eye of the number of marches necessary to each of his corps for arriving at the point where he wished to have it at a given day; then placing his pins in those new positions, and combining the rapidity of the march which it would be necessary to assign to each of the columns with the possible epoch of their departure, he dictated those instructions which of themselves alone would be a title to glory.

It was thus that Ney, coming from the borders of Lake Constance, Lannes from Upper Suabia, Soult and Davoust from Bavaria and the Palatinat, Bernadotte and Angereau from Franconia, and the imperial guard arriving from Paris, were found in line upon three parallel routes debouching at the same time between Saalfeld, Gera and Plauen, when no person in the army, nor in Germany, conceived anything of those movements in appearance so complicated.\*

In the same manner, in 1815, when Blucher cantoned peaceably between the Sambre and the Rhine, and Wellington gave or received *fêtes* at Brussels, both awaiting the signal to invade France, Napoleon, whom they believed at Paris quite occupied with ostentatious political ceremonies, accompanied by his guard, which had just scarcely been reformed at the capital, burst like lightning upon Charleroi and upon the quarters of Blucher, with columns converging from all points of the horizon, to arrive, with rare punctuality, the 14th June in the plains of Beaumont

\* I except, however, a small number of officers capable of penetrating them by analogy with precedents.



upon the borders of the Sambre, (Napoleon had not departed until the 12th from Paris.)

The combinations of those two operations reposed upon a skillful strategic calculation; but their execution was undeniably a *chef d'œuvre* of logistics. In order to appreciate the merit of similar measures, I would refer, in opposition to them, to two circumstances where faults of logistics came near becoming fatal. Napoleon recalled from Spain in 1809, by the preparations of Austria, and certain of having war with that power, despatched Berthier to Bavaria with the delicate mission of assembling the army, all dispersed from Strasburg to Erfurt.

Davoust returned from this city, Oudinot from Frankfort, Masséna *en route* for Spain, retrograded by Strasburg upon Ulm; the Saxons, the Bavarians and Wurtembergers quitted their respective countries. Immense distances separated thus those corps, and the Austrians, united a long time since, were able easily to pierce this web and to destroy or disperse the parts of it. Napoleon, justly uneasy, ordered Berthier to collect the army at Ratisbon, if the war had not commenced at his arrival, but in the contrary case to unite it farther in rear near Ulm.

The cause of this double alternative was not difficult to penetrate; if the war had commenced, Ratisbon was found too near the frontier of Austria to be designated as the place of rendezvous, for the corps might arrive and throw themselves separately in the midst of two hundred thousand enemies; by fixing the union at Ulm, the army would be sooner concentrated, or at least the enemy would have five or six marches more to make in order to reach it, which was a capital point in the respective situation of the two parties.

It did not require to be a genius to comprehend the thing. Meanwhile, hostilities having commenced only a few days after the arrival of Berthier at Munich, this too celebrated major general had the simplicity to adhere literally to the order received, without perceiving its manifest meaning; he not only persisted in endeavoring to unite the army at Ratisbon, but he even caused Davoust to return to that city, who had the good sense to fall back from Amberg in the direction of Ingolstadt.

Happily, Napoleon, advised in twenty-four hours of the passage of the Inn, by telegraph, arrived like lightning at Abensberg, at the moment when Davoust was about to find himself invested, and the army cut in two or scattered by a mass of a hundred and eighty thousand enemies. It is known by what prodigies he rallied it, and triumphed in the five glorious days of Abensberg, of Siegenburg, of Landshut, of Eckmühl,

and of Ratisbon, which repaired the faults of the miserable logistics of his chief of the staff.

We shall terminate these citations by the events which preceded and accompanied the passage of the Danube, before Wagram; the measures for causing to arrive at a given point on the island of Lobau, the corps of the Viceroy of Italy coming from Hungary, that of Marmont coming from Styria, and that of Bernadotte coming from Linz, are less astonishing still than the famous resolution or imperial decree of thirty-one articles which regulated the details of the passage and of the formation in the plains of Enzersdorf, in the presence of a hundred and forty thousand Austrians, and of five hundred pieces of artillery, as though it had been a military fête. All those masses were found united on the island the evening of the 4th of July, three bridges were thrown in the twinkling of an eye upon an arm of the Danube a hundred and forty yards wide, in the darkest of nights and in the midst of torrents of rain; a hundred and fifty thousand men there defiled in presence of a formidable enemy, and are formed before noon in the plain, at a league in advance of the bridges, which they covered by a change of front; the whole in less time than would have been necessary for doing it in a manœuvre of instruction several times repeated. In truth, the enemy had resolved to dispute the passage but feebly; but this was not known, and the merit of the dispositions made was none the less manifest.

Meanwhile, by an oversight the most extraordinary, the major general had not perceived, in dispatching ten copies of the famous decree, that by mistake the bridge of the centre had been assigned to Davoust, although he should have formed the right wing, whilst the bridge of the right had been assigned to Oudinot, who was to form the centre. These two corps thus crossed each other during the night, and but for the intelligence of the regiments and their chiefs, the most horrible disorder might have prevailed. Thanks to the inaction of the enemy, they were allowed to pass for a few detachments which followed corps to which they did not belong; what was more astonishing, is that after such a blunder, Berthier should have been decorated with the title of Prince of Wagram—this was the most cruel of epigrams.

Doubtless the error had escaped Napoleon in the dictation of his decree; but a chief of staff dispatching twenty copies of this order, and charged with the office of superintending the formation of the troops—should he not have perceived such a mistake?

Another example not less extraordinary, of the importance of good logistical measures was given at the battle of Leipzig. In receiving this



battle, backed against a defile like that of Leipzig, and wooded prairies cut up by small streams and gardens, it would have been important to throw a great number of small bridges, to open roads for arriving at them, and to mark out those roads; that would not have prevented the loss of a decisive battle, but a considerable number of men, cannon and caissons would have been saved which were abandoned for the want of order and issues for retiring. The inconceivable explosion of the bridge of Lindenau was equally the result of an unpardonable neglect on the part of the staff, which, for the rest, no longer existed in the army except in name, thanks to the manner in which Berthier composed it and treated it. Besides, it must be acknowledged that Napoleon, who perfectly understood logistics for organizing an irruption, had never thought of a measure of precaution in case of defeat, and when he was present, everybody reposed upon the Emperor as though he himself had ordered everything and foreseen everything.

Here is sufficient for causing to be appreciated all the influence which good logistics can have upon military operations.

In order to complete what I had proposed to say in writing this article, I should have to speak also of reconnoissances. They are of two kinds. The first are purely topographical and statistical; they have for object the acquiring of ideas upon the country, its accidents of ground, its routes, defiles, bridges, &c., of ascertaining its resources and its means of every kind. At this day, geography, topography and statistics have made so much progress that these reconnoissances are less necessary than formerly; meanwhile they will always be of great utility, so long as Europe shall not be registered: now it is probable she will never be so. There exist many good instructions upon these kinds of reconnoissances, to which I must refer my readers.

The others are those which are ordered for assuring ourselves of the movements of the enemy. They are made by detachments more or less strong; if the enemy is formed in presence, it is the generals or chiefs of the staff who should go in person and reconnoiter him. If he be in march, whole divisions of cavalry may be pushed for piercing the curtain of posts with which he is surrounded.

These operations are sufficiently well pointed out in a host of elementary works, especially that of Colonel Lallemand, and in the regulations for field service; besides, we believe it our duty to reserve for the article following all that we have to say on the various means of penetrating what the enemy is doing.

## ARTICLE XLII.

### RECONNOISSANCES, AND OTHER MEANS OF ASCERTAINING CORRECTLY THE MOVEMENTS OF THE ENEMY.

One of the most important means of well combining skillful manœuvres of war, would unquestionably be never to order them except upon an exact knowledge of what the enemy might be doing. Indeed, how are we to know what we ourselves ought to do, if we be ignorant of what the adversary is doing? But, as decisive as this knowledge might be, to the same degree it is difficult, not to say impossible, to acquire; and this is precisely one of the causes which render the theory of war so different from the practice.

It is from this that come all the miscalculations of generals, who are educated men only, without having the natural genius for war, or without supplying it by the practical *coup d'œil* which a long experience and a great habit of directing military operations can give. It is always easy in leaving the walls of an academy, to make a project for outflanking a wing, for menacing the communication of the enemy, where you act for both parties at the same time, and where you dispose of them to your liking, either upon a geographical map or upon a fictitious plan of ground, but when you have to do with a skillful, active and enterprising adversary, all of whose movements are an enigma, then the embarrassment commences, and it is here that all the mediocrity of an ordinary general shows itself.

I have acquired so many proofs of this truth in my long career, that if I had to test a general, I should esteem much more him who should make just suppositions upon the movements of the enemy, than him who should make a display of theories so difficult to make well, but so easy to apprehend when one finds them all made.

There are four means of attaining a judgment as to the operations of a hostile army; the first is that of an *espionage* well organized and lib-