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ESSAYS
ON
THE THEORY AND PRACTICE
OF THE
ART OF WAR:
INCLUDING THE
DUTIES OF OFFICERS ON ACTUAL SERVICE,
AND THE PRINCIPLES OF MODERN TACTICS.
Chiefly translated from the
BEST FRENCH AND GERMAN WRITERS,
BY THE EDITOR OF
THE MILITARY MENTOR.

"If the principles contained in these Essays were generally disseminated through the service, and so much practical knowledge were brought into union with the unequalled valour and patriotism of the Officers of our various military establishments, the British Army would be invincible both at home and abroad."
Letter of a General Officer to the Editor

IN THREE VOLUMES.
VOL. II.

LONDON:
PRINTED FOR RICHARD PHILLIPS,
BRIDGE-STREET, BLACKFRIARS.
1809.
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THE MILITARY INSTITUTES OF ONOSANDER, RELATIVE
TO THE DUTIES AND QUALIFICATIONS OF A GENERAL.
TRANSLATED FROM THE GREEK.

Of the Choice of a General.

THE office of a General should not be a heredi-
tary privilege, nor should it be bestowed in conse-
quence of wealth: it should be the reward only of
personal qualities. A good General ought to be
continent, sober, temperate, economical, laborious,
of a middle age, eloquent, generous, a father of a
family, descended from an illustrious house, and a
man of sound intellect.

Sobriety is necessary, lest, by yielding too much
to pleasure, he should neglect things of importance.
Continence is equally so, that he may subdue his
passions, which are so much the more dangerous in
proportion to his power.
Temperance guards him from excesses, which de-
stroy reason. He will be able to watch without
trouble: and, in the silence of the night, the mind
of the General left to itself, plans projects, and the
means of executing them.

He should be economical and frugal, that he may
employ that time to advantage which would be other-

* These Institutes have long been famous, as containing the
results of the military observations of the ancients, and many
profound maxims and principles, which are immutable.
MILITARY INSTITUTES

wise wasted in feasting, &c. Luxury will only ef-
feminate his heart and his mind.

He should be laborious, and support labour with- 
out repining, that his soldiers may not behold in him  
the first who complains of the fatigues of war.

A General should be disinterested, generous, and  
as above all corruption. Gold will sometimes corrupt 
that man who can behold, unappalled, a thousand  
bucklers raised against him. The enemy thus finds  
resources which he could not in his arms.

Youth is susceptible of levity; age of weakness.  
A General too young may fail from excess of bold- 
ness; one too old may experience the same from 
tardiness, which is the ordinary consequence of age.  
The General, who unites force of mind with strength  
of body, is the best able to form projects, and to exe- 
cute them.

The established reputation of a General is of great 
importance to the soldier, who, confident in the ef-
fect of his attention and his promises, loves and fol-
 lows him with ardour, knowing that he risks the 
same dangers as himself.

Eloquence is a quality from which a General may 
derive great advantages. In the hour of battle, it 
inspires the soldier with a contempt of danger and a 
thirst for glory. His voice has more power than 
the sound of all the instruments. It consoles and 
cheers the soldier in misfortune; like the medicines 
which cure the body, his eloquence acts with success 
on their minds and hearts.

It is of importance that the General should be 
nobly born: the troops hate to be commanded by a 
man of obscure birth. It is more natural to suppose 
that the qualities we have enumerated should result 
from education than otherwise.

Wealth should not be the means of obtaining the 
command of an army, nor should poverty withhold 
it. Merit and capacity should alone be the motives, 
and should alone be consulted.

If it were required to choose between riches and
poverty, with an equal degree of merit, the first should be preferred; the same as in choosing arms, those of gold and silver are preferable to iron, provided they are equally good in their use against the enemy: it is uniting splendor with utility.

The command is not made for bankers, merchants, usurers, &c. however rich they may be; for a man who thinks only of gain would hardly possess that elevation of soul, and that knowledge which is indispensably requisite; he would be merely occupied about money and commerce.

Nevertheless, nobleness is not absolutely requisite in a chief; persons of a very inferior condition may, at the same time, be gifted with qualities, extremely proper for the command of an army.

We should, in a man destined to the command, consider less the merits of his ancestors than his own personal ones. Happy, however, is he, who joins individual abilities to illustrious birth; the latter of which is, otherwise, an empty sound.

Vivacity and presence of mind will be an eternal source of expedients. Homer compares this quality to the flight of birds. In war, we are often compelled to decide on a particular course of conduct, without having time to deliberate.

It is to be presumed, that a General who is destitute of the honours of ancestry, will be the more anxious to perform his duties, than one who relies upon the triumphs of his family. Proud of the glory of his ancestors, he regards it as a claim which is given him to the gifts of fortune, and he neglects to merit them; the other, on the contrary, endeavours to repair the defect of his birth by the lustre of his actions. He strives to attain a glory, which will be the entire work of his own hands; like those who are born poor, he endeavours to obtain wealth by the dint of labour and industry.

It is to be wished that the General should join to these qualities those of politeness, affability, an easy access, and great coolness. He should avoid exces-
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sive liberality, which would be abused by the soldiers; and, likewise, a too great severity, which will procure him only the hatred of his troops. The one destroys discipline, and the other alienates the minds of the soldiery. When, in the case of promotions, he exercises his liberality, his choice should always fall on persons whose bravery, fidelity, and patriotism, are well known to him. Riches and birth may then form a subordinate consideration. The great number of officers who are employed in an army does not require that they should perform individually as much as the General. As far as possible, we should choose rich and noble persons to be officers: their wealth is a great resource in an army wanting money. Being thus enabled to sustain expenses, they may contribute greatly to the amelioration of the soldier, and may attach them by their bounties. It is even more feasible to entrust them with affairs of importance, because their wealth is a guarantee for their fidelity; but, it is always presupposed that they possess talents and capacity.

Of a Council of War.

A General cannot bestow too much attention in the choice of his officers destined to compose his council. Sometimes these counsellors are nominated by the state: they are also often selected from among the superior officers of the army. Every operation in war is of so much consequence, that it is impossible to examine the projects with too much attention previous to executing them. As a General should always distrust his own knowledge with regard to the adoption of the different means which may present themselves, when he consults only his own opinion, it is of the greatest importance that he should be able to avail himself of the knowledge of many other enlightened persons: their opinion consolidates and fixes his indecisive thoughts. It would be just as bad to despise these councils as it is not to be able sometimes to act without them. In the first
Instance it would be temerity, in the latter weakness. There are occasions when there is no time to consult, and which would escape if deliberation were used; there are also others, in which, for want of having convoked a council, the General finds himself awkwardly situated. He sees, too late, that his imprudence is attended with misfortune, and which is entirely owing to his presumption.

Of the March of an Army.

The army should always march in order, even when beyond the reach of the enemy, in their own country as well as elsewhere. We should compel the soldier to observe his divisions, his ranks, and file, even if it be only to accustom him to that precision. It is particularly necessary, when marching in an enemy's country, exposed to the attack of an enterprising general; the slightest one may occasion fear, and overthrow a troop of men who are in disorder.

The disposition of the march should be such, that the army is always in a state of readiness for battle. It is necessary to keep the distances, and likewise to instruct the soldier to be attentive to the concerted signals. The front should be extended as much as possible, in order to diminish the length of the column. We should always choose easy ground, little obstructed by defiles, which eternally occasion delay and confusion among the troops. The length of a column, marching with too small a front, gives great advantage to an enemy who may attack them in the van, and who will completely surround the column, if they happen to possess a more extensive front; having precisely the same advantage as an army has (when ranged in the order of battle) over the enemy, whose flanks he surrounds. If the enemy attack the column in flank, they may easily penetrate, and finally break it. In manoeuvring to form the front, the column can oppose only a very trifling depth, considering their length.
MILITARY INSTITUTES

It is, therefore, always advantageous to make an army march with as extensive a front as possible; the length of a column may occasion the utmost consternation. After having passed a mountain, the vanguard, who have already descended into the plain, beholds a number of troops on the hill, mistakes them for the enemy, and seeks security in flight.

The baggage and ammunition should be in the center, if it is feared that the enemy will attack in the rear. As the rear and vanguards are peculiarly exposed, it is, in general, prudent to compose them of the best men.

Detachments of cavalry should be sent in front of the column, in order to reconnoitre, particularly if the army be passing through forests, or a covered country. This precaution will prevent any ambuscade which the enemy may form.

It is much easier to reconnoitre the enemy in an open country. By day they are indicated by the dust; by night by the fires.

An army should always march during the day, except in cases of urgent necessity, or of a surprise, when night is more favourable.

A slow march is necessary, when approaching towards the enemy in the order of battle; for, otherwise, the soldier is fatigued, and unable to support the combat with vigour.

A General, who is passing through the country of an ally, cannot give too strict orders to prevent pil- lage and disorder. There is nothing more insolent than a troop of armed soldiers, to whom entire liberty has been given. The sight of wealth is a seducing spectacle to an avaricious man who will not reason. A very small provocation may render an ally indifferent, or even make him an enemy.

When an army is complete, and ready for marching, we should not retain them at home, nor in the country of an ally, for they are only useless and expensive expenditure. They should be conducted to
the enemy as quick as possible, for they will furnish, 
even the poor, the necessary support, which is a 
considerable saving.

According to the guarantee which is afforded to 
the merchants, either by land or sea, who provide 
the provisions, such will proportionally be the abun-
dance in the camp.

If they are marching in a close and hilly country, 
the General should send detachments before them, 
in order to secure the defiles and heights; for, other-
wise, the enemy may occupy them, when they will 
obstruct and contend the passage, and, perhaps, 
prevent the army from proceeding.

We should adopt the same precautions with re-
gard to our own country, as the enemy observe in 
theirs. It is not sufficient to attack, we should 
likewise be secure from invasion.

Of Camps.

Every camp in an enemy's country should be 
covered with a circle of intrenchments, and a fossé, 
even though it be but for a day. This precaution 
has always been found admirable, because it pre-
vents all surprise. Even when the enemy are at a 
distance, the guards should be posted with the same 
exactitude as if they were near.

When we are compelled to reside a certain time in 
a province, for the purpose of laying it under con-
tribution, or any other cause, we should pitch our 
camp on a dry and healthy soil. A contrary 
measure has often occasioned diseases, and the de-
struction of an army. It would be advisable to 
change it sometimes, in order to avoid injurious 
exhalations; except in winter, when the soldier 
constructs his barracks, and is the same as if he 
were in a city.

Of the Exercise.

In winter quarters the General should employ the 
time in teaching the troops all the necessary manœu-

A 5
vres which will be required in a campaign. The exercise occupies them, and renders them accustomed to what they will have to practise during the day of battle. Idleness enervates the heart, and weakens the body. We have seen the bravest troops degenerate from indolence. The man who is accustomed to fatigue, sustains, without trouble, the labours attendant upon a campaign; while, on the contrary, he repines at them, if he has been indulged in luxury and idleness, the pleasures of which he unceasingly regrets.

The General will avail himself of a cessation from arms, to discipline and instruct his soldiers, not only in the manoeuvres necessary for war, but also in the routine of parade exercises, in order to render them agile, prompt, and willing. The most laborious duties of the soldier may be considered as actual ease, compared to the fatigues of action.

The most essential parts of the exercise are as follow:

The soldier should be arranged according to the order of arms, in order to accustom him to know his department. He ought to know, by sight and by name, the man who is before, behind, and on his side, as that, at the first command, he may take his proper rank and file; he should know how to deploy, and close, perform the movements to the right and left, the changing of files, the distances, doubling, &c. He should know all the different divisions of the phalanx and their evolutions; whether it be to form simply the phalanx, to extend into a larger front, or to augment the depth. He should be instructed how to form in the order of battle with two fronts, and likewise to make a retreat, when the signal is given.

It will be impossible to obtain precision in these manoeuvres, except by dint of exercise. The beginning is clumsy and dull; but at length succeed celerity and propriety, with the exactitude (if I may so speak) of a machine. The musician, who
begins to learn an instrument, does not at first know
where to place his fingers, but, accustoming him-
self to know the chords, and touches, he is finally
able to run over them with rapidity and harmony;
the finger accords wonderfully with the breath, so
as to render an agreeable harmony, instead of which,
at the beginning, nothing is produced but disso-
nance and discord.

When the troops are instructed in all the neces-
sary manoeuvres, the General may divide them into
two bodies, and have a sham fight. But, to avoid
accidents, he should make them use sticks, or
leather strings, instead of cutting weapons, and clods
of earth in lieu of missive arms.

The attacks should be formed in the heights, so as
to accustom the soldiers to mount hills when running.
Emulation should be excited, by praising those who
conduct well either the attack or the defence. This
exercise will contribute to the health of the soldier,
render him invulnerable to the variations of the at-
mosphere, and giving him an appetite, make him
relish his victuals with a true zest.

The cavalry should likewise be instructed by simi-
lar combats; their exercises should be performed in
the plains; but as they are more difficult to be per-
formed in mountainous countries, it would be eligi-
gle to choose such sometimes in preference, in
order to accustom them to act in those situations.

Of Foraging.

A great regularity should be observed in foraging
for the army. The General should detach a corps
of infantry and cavalry, to cover the foragers.
While these last conduct the charge, the other will
remain posted in battle array, in order to protect
the foragers and their retreat. Were it not for this
precaution, the enemy might overcome the weak-
ness of those men, who, disordered and confused,
are prevented by their burdens from using the few
arms which they carry, and must yield to the most
inconsiderable regular attack. Very rigorous punishments should be inflicted on any person belonging to an army, who presumes to forage without an order being given.

Of Spies.

The customary mode is to put spies to death; but, if the army be in a good state, and superior to that of the enemy, we may pardon them and send them back, after having even made them view the order and discipline of the troops. This account will rather intimidate than be advantageous to the enemy.

Of Sentinels and Guards.

In the number of the guards consists the safety of the camp. The sentinels should often be relieved. The soldier cannot, without injury, watch all night; it would be bad to command it, and even to permit it, were he willing. The man who is fatigued cannot resist the power of sleep, which will surprise him in spite of every thing. Hence it is, that a soldier who is on duty, is not allowed either to sit or lie down. The guards should light a fire, at a considerable distance from the camp; by this means, the enemy may be perceived at a distance, without their being able to discover any thing. The General who is compelled to decamp during the night, unknown to the enemy, either from want of provisions, or to avoid a battle, should continue his fires in his camp; or otherwise the enemy seeing them extinguished, will suspect their march, and, by putting his whole force in motion, immediately impede or hinder it.

Of Conferences with the Enemy.

When a General is invited to an interview, he should select for his escort and suite the best looking men in the army; this exterior pomp sometimes deceives, and obtains more easily the demands. The enemy will perhaps be more influenced by this
appearance than by all the arguments which can be brought forward.

Of Deserters.

A prudent General will always despise all deserters from the enemy, who may offer to disclose to him any important secrets. If, however, any one should propose means of surprising the enemy, of conducting them by secret paths, or who indicates the proper hour for the attack, an able General may then consider on the circumstance of the proposed projects, and, if they appear probable, he should secure his person, conduct him with the army, bound hand and foot, and promise him his liberty, with a reward if he speak true, or torments if he has acted falsely. The man who sees himself in the hands of those whom he conducts will not venture to deceive them, as his death would be more certain than the success of his villainy.

Of the Forms of Camps.

A General who pitches his tents near the enemy, should examine his camp. If it forms a circle in the plain, he is the less able to judge of their strength, because its circumference is much greater than it appears. On the contrary, that which appears to cover a great quantity of ground in straight or angular lines, in fact contains less. Habit alone can secure the eye against these natural illusions.

A camp, situated on a mountain, always appears larger, in consequence of the inequalities of the ground, which will not permit the tents to be regularly pitched. These vacancies which are of no importance, may deceive in the appreciation which we may be desirous of making respecting the whole line. It is therefore difficult to judge, from the figure of a camp, of the number of troops which it contains.

The reasons just alluded prove, that a circle is the most preferable figure to be adopted, observing, at the same time to consolidate it as much as possible.
To be able to conceal one's strength, often proves a very useful ability in a General. In order to perform it, we must never quit the camp, either to attack, or to reconnoitre the enemy. They may think that this reserve proceeds from weakness or fear. As it is easy to judge from appearances, without remarking the effects of a stratagem in war, it is possible that the enemy may deceive themselves, and relapse into negligence, using less order and precaution in their operations. The troops being naturally apt to neglect themselves, when they consider the danger as trifling, and the victory easy; it is evident, that the enemy would march to attack a camp which they despised; but the General, issuing from several parts at once, and in good order, will reap the profit of his wise precautions, and likewise avail himself of the surprise of the enemy. An able and experienced General will never fall into such snares as these. As he is himself able to do the same as his enemy, his good sense will also dictate to him, the means of securing himself from his attempts.

Of the Necessity of Secrecy.

When a General intends to surprise some post, town, citadel, or passage, the measure will require equal diligence, skill, and secrecy, whether it be performed by day or by night; the object should be concealed from every one, except the Generals to whom the execution of it is intrusted. The order and detail of it should not be communicated until the moment of action. As the soldier is quickly informed as soon as the officer knows it, none but a madman would previously divulge his intentions, for that would be the means of occasioning a desertion. The hope of recompense, for communicating some important news, might induce a soldier to desert over to the enemy.

There is no army secure from desertion: war al-
ways furnishes pretexts, both to slaves and freemen, for palliating their crimes.

How far it is necessary to use Prudence in following a flying Enemy.

We should always suspect the retreat of the enemy. The precaution which should be taken in following them is, to observe with the greatest care, the nature of the country in which the pursuit takes place; for, it is possible, otherwise, that the pursuing General may himself be compelled to take to flight.

It is better not to pursue at all, than to hazard it upon uncertain grounds. To perform it with safety, we should in proportion as we advance, occupy the heights, the defiles, and the chain of mountains, and secure with troops the most essential posts, so as to be able to retire without the risk of being cut off. I observe this as much to avoid falling into a snare, as to instruct how to lay one.

Of the Advantage of procuring Information respecting the Enemy.

A General should always admit every person who comes to give him advice. He should be accessible at every hour of the day and night, whether at the table, at the bath, or in bed. Those who are difficult to be seen from their own refusal, or that of their servants, are liable to neglect such information as might have been of the greatest consequence, but which is rendered useless by the least delay.

Respecting the most proper Hour for the Repast of the Troops.

A General should always fix in the camp a precise hour for the refection of his army. If he be secure from the danger of an attack, it is of little importance what hour it is; but, if his position, or the weakness of his intrenchments, expose him to the hazard of being suddenly attacked, it is requisite that
the hour should be early in the morning, so that, in case of an attack, the soldiers may have fed themselves previous to engaging. As the battle may last till night, a hungry man is the less inclined to fight. Sobriety should be recommended, without, however, carrying it to that extent as to deprive the soldier of a sufficiency of nourishment, paucity being equally injurious as profusion. Experience abundantly proves this to be a very important object.

Equanimity of Mind is essential in a General, even when unfortunate.

Whatever may occasion discontent in the soldiers, whether it be that the enemy have received a reinforcement, or that they have gained some great advantage, the chief should never appear chagrined; on the contrary, his external conduct should be confident, and his manner approach to tranquillity and even gaiety. The behaviour of the General has a great influence on the mind of the soldier, and has even an effect upon his heart. The General, who exhibits confidence, imparts the same sentiment to his troops: they imagine that there is nothing to fear; but he who displays sorrow and inquietude inspires them with timidity, and, appalling their hearts, makes them sensible to nothing but danger. Harangues are sometimes less eloquent than contentment of countenance: the one may be suspected of art and cunning, but the other never is. Two great acquisitions are to know how to appear, and how to speak with propriety: nevertheless, though there are instances in which we should animate the soldier, yet there are others in which we should seek to intimidate him.

On what Occasions Soldiers should be inspired with Fear of the Enemy, and on what they should be encouraged.

When discipline relaxes, then we should exaggerate danger, and display all the enterprises which
it is possible for the enemy to make: without intimidating the troops, this information will incline them to precaution. Misfortune requires that their spirits should be raised; and negligence, which proceeds from a too confident security, that they should be abashed: the one heartens the timid, the other inspires the presumptuous with prudence. These two different minds are always to be found in an army. It is a great defect to fear the enemy, so as to undertake nothing against him, and, likewise, to despise him too much, and thus neglect to have proper precautions; the General should therefore employ appropriate means to avoid these two great defects.

Of the Order of Battle.

We shall lay down, in a few words, the general rules which are applicable to every order of battle, without, however, noticing the various exceptions that may occur. Every order of battle should be regulated according to the kind of arms that are used, the men, the places, and the enemy: an able General determines immediately on each situation that presents itself.

An army should be arranged according to the disposition of the adverse one, and the General is constrained to place his cavalry against that of the enemy; the usual order is to arrange the cavalry on the wings, to be ready to attack the enemy in front and in flank, and to have sufficient space to manoeuvre, according to the depth which they may be.

It is proper to possess the heights where there is an inequality in the ground in the field of battle; if the enemy are already possessed of them, the light troops are the best to be employed to dislodge them therefrom.

We should not, for fear of being surrounded, extend our front at the expense of the solidity of the phalanx; because, being weakened by our length, the enemy may attack us in the center, which they...
would easily succeed in breaking, and afterwards, turning to the right and left, they would even take the phalanx in the rear. The General should not only avoid this fault, but know how to profit by it, should it be committed by the enemy.

The opposite error, and which is equally to be dreaded, is to have too small a front, and too much depth, which enables the enemy easily to attack us in flank, which he will soon exceed, and surround the whole body.

It is equally as necessary to have good soldiers in the flank and in the rear, as in the front, because an expert General, who sees his adversary about to surround him, ought to oppose to this movement, that of deploying his rear ranks on the wings, and thus extend them. Should it so happen, that there is not time to avoid being enveloped, then the rear ranks should be commanded to make a demi-turn to the right, in order to face the enemy, who may have gained the rear, and thus give the phalanx a double front; and, in this case, the soldiers may sustain the attack, as well as those of the front ranks.

The General who feels himself to be inferior in numbers, and yet cannot avoid a battle, should carefully choose his situation, and support himself by a river, or a mountain, being cautious to secure the heights. Independent of the ability of the General, chance must greatly contribute to procuring a good position for the army; for he cannot chase any if the country possesses none. But, in that case, his skill is shewn in adopting the best, and having such a correct eye as to discern it immediately.

A very common disposition among the commanders of a numerous army is, to advance more with the wings than with the centre; in the hope, that the enemy, advancing to attack the centre, will form, in making the charge un saillant, and that then, surpassing them in number, they may surround them with their wings. The method of avoiding this is, to divide the army into three bodies, the two side
some of which attack the wings, while the centre remains immovable. This movement at least creates confusion.

An advance to the attack may also be made with an oblique phalanx. The energy of this disposition consists entirely in one or the other of the wings, which they attack with the flower of the army. As the enemy cannot use but one part of the troops, he is often forced to fall back, and the route of a wing almost always produces that of the whole army. Another method, also, which may be attended with success is, to feign a very precipitate retreat. The enemy, mistaking this manœuvre for a real flight, is animated, and eager to pursue; the ardour of the soldiery soon induces them to break their ranks. Then the retreating army, turning round, attacks with the greatest advantage the disordered pursuers, who are likewise surprised at the boldness of the step.

It is necessary to have a corps separate from the phalanx, composed of chosen men, to be ready to succour that part of the phalanx, who, being overwhelmed, stands in need of assistance. The effect of a reinforcement of fresh troops, is the encouragement of those whom they join, and the dismay of the enemy, already weakened by a long engagement.

A great advantage may be derived from stationing a corps at some distance from the army, with orders to join whenever the combat is commenced. The enemy, beholding the troops advance with precipitation, will be astonished, particularly if he is informed that the army expects succours, and he has hastened to give battle previous to the arrival of this reinforcement. He will immediately conclude, that these troops are the expected succours; and, not being able to ascertain their numbers, he will imagine them to be much more considerable than they really are; which alone would induce him to fly, without waiting the attack.

Every unexpected increase of troops, in the day of battle, always surprises the enemy. Man is for
ever inclined to deceive himself, and his imagination generally augments every thing which threatens him.

Of all surprises of this kind, the most striking is that which is occasioned by an unforeseen attack of troops in ambuscade. A General will do well to have recourse to this stratagem by detaching, during the night, a certain number of men to hide themselves somewhere. These troops should appear when the armies are engaged, and attack the enemy in the rear, who, finding themselves surrounded, will even vainly endeavour to escape by flight.

The General, while riding from the right to the left, during the action, should encourage his soldiers by crying out, that the wing which he has just quitted has the superiority, even though it be not so; or by telling them that the enemy's General is dead. Should it happen that the enemy hears this report, it produces an effect equally advantageous to the one, and injurious to the other. There is more than one example, in which similar things have decided the victory.

In the arrangement of the army, endeavours should likewise be made to place together all the men of one country. The soldier placed at the side of his brother, of his friend, or of his neighbour, fights with more intrepidity, than when near a stranger. The bonds of consanguinity, or of friendship, induces them mutually to sustain each other, and to dread, with the greatest poignancy, the shame which is attendant upon flight.

Of Orders, Watchwords, and Countersigns.

The General should command his officers to give the orders, watchwords, and countersigns, because he would lose his time were he to undertake it himself. He should give his orders to the first officer, who should communicate them to the one immediately under, that they may thus pass step by step down to the lowest. The orders will take place with
the same rapidity as the fire signals, by means of which the troops, scattered over an extensive space of country, are acquainted in an instant with any given information.

Independent of the parole, they may know each other by signs; such as putting their hands or weapon in a particular position. These signs may be multiplied in infinitum, by the noise of the arms, by concerted motions, so that, in any confusion, the soldier may be enabled to distinguish his friend from his foe. This custom is very important, when the army is composed of different nations, who, not understanding each other's language, have no other means of knowing one another than by signs. They should even be given to those who remain in the camp, in order that they may be safe from all surprise or stratagem.

Of the Exactitude which should be observed in the Ranks and Files.

The General should strictly command the men to preserve their ranks and files, either in retreating or in pursuing an enemy. It is even necessary, in order to be certain of victory, to pursue a flying enemy in good order. It should be a general maxim, on every occasion, carefully to observe the precision of the ranks and files; for, without this be attended to, nothing can be effectually performed.

Reflections for a General, previous and subsequent to a Battle.

An expert commander of an army should arrange in his own mind the troops, the arms, and the Generals which he intends to use, the places where he purposes to place them, and likewise the disposition of the attacks which he intends to make. He should imitate an able doctor, who, knowing the disease with which he is threatened, reflects beforehand on the remedies proper to prevent its pernicious effects. The General should, in the same manner, combine
every possible case, so as to form the best disposition for the present, and be provided with expedients for any future emergencies.

If the enemy be superior, in point of cavalry, it will be prudent to choose a close country, mountainous and difficult, so as to avoid a general engagement before being properly prepared. It is necessary to have guards in the camp, as well to secure the baggage, as to prevent the insults of the enemy, who will infallibly make attempts, if they know it is left defenceless.

A General cannot always either be blamed or praised who deprives his army of all retreat, by destroying his intrenchments, &c. in order to induce the soldiers to fight better, from having no alternative but to conquer or die.

All enterprizes which are undertaken at a great risk, bespeak rather a madman than one of moderation. His success is more the consequence of chance than of prudence. The victory or the defeat, which proceeds from temerity, can never do its author honour. Endeavours should be made to cultivate that emulation which induces the soldiers to expose themselves in performing a brilliant action; because, if it succeeds, a great advantage may result from it, and even, should it fail, the consequences cannot be very important. But it never can be proper to expose the whole fate of the army, as upon the hazard of a die.

They are particularly blamable, who undertake an enterprize, the failure of which would be more injurious than the success would be advantageous; for we should never balance a trifling advantage against a total ruin. As there is no proportion between the two, the risk would be madness; but when the position of the army is such, that, without risking a battle, they are exposed to destruction, then it would be proper to hazard the only remaining resource, and to deprive the soldiers, (in order
to render it efficacious) of all means of retreat, and leaving them no hope but what must result from victory.

When destruction is inevitable, it is certainly more glorious to die in battle than to fall otherwise. In such a case, we should the more readily resolve upon an engagement, as it is possible that success may attend it.

Not only on this occasion, but on every other, the General cannot too forcibly impress upon the mind of the soldier the danger of taking to flight, inasmuch as being at the mercy of the enemy, he cannot avoid becoming his victim; while, on the contrary, if he stands his ground, there may be a hope of saving his life. Every man, who is thoroughly convinced of these truths, will infallibly be a good soldier. If it be possible to make a whole army feel these sentiments, every thing may then be hoped, for flight will never be their resource.

Independent of preconcerted dispositions, anterior to the day of action, a General should be able to determine upon the spot, according to the exigency of the moment. This quality in a General cannot be acquired either by study or by labour, it must be a gift.

The effect of such manoeuvres are the more certain, as they are quite unexpected. Those which are premeditated may be foreseen, and consequently frustrated; but those which are formed on the spur of the moment can only be admired.

A General, who lays down the plan of his campaign, may be compared to a pilot, who, before undertaking a voyage, traces out his course; but, should an unexpected tempest arise, he must yield to its violence, by changing his course and his manoeuvres, to save his vessel. Great dangers do not allow time for deliberation, they must be remedied on the spot, for a moment's delay may occasion destruction.

A General should preserve his life for the preserv-
vation of his army. Boldness belongs to the soldier and not to the commander. He should mingle in the battle with precaution, and not take an active part, unless it be absolutely necessary. It is his head and not his arms which should act; the advantages which he may gain from his personal prowess would ill compensate for the inconveniences which would result from his loss. The orders proceed from him, and he should not occupy himself with anything else. It is with him as with a pilot, who would quit the helm during a storm, in order to haul in a cable, or to perform any other simple duty of a sailor. He should be careful of his life, if the safety of his army be of importance to him. As it is incontestably important, so the unnecessary exposure of his person indicates even more imprudence than temerity. He owes himself to his army, and he is therefore deficient in his duty, if he occasions his own destruction unnecessarily. Success can be attributed only to the able dispositions of a General. If he possesses the merit of an architect, why should he also attempt that of the labourer? Intrepidity is a necessary quality in a General, but he should be guided by prudence: the one he should shew to his soldier, the other he should hide. He should nevertheless know how to perish with his army if it be inevitable. He should endeavour to live himself, to assist it in acting, and reaping laurels. The death of a General has more than once occasioned the defeat of an army, even when it was before victorious. Such news being spread has given confidence to the vanquished, and has inspired the conquerors with timidity. The duty of a General in traversing his lines is, to join those which are in danger, to applaud brilliant actions, to encourage the fearful, and to threaten and punish those who fail in their duty. He should reinforce such parts as are weak, and fill up vacancies, by conducting other troops, who, well posted at the commencement of the battle, have become ultimately useless, from change of circum-
stances. He should observe them carefully. It is for him to judge of the time, the occasion, and of every possible advantage.

After having retired from the combat, his first care should be to return thanks to God. Then he should seek those who have distinguished themselves, and those who have not, in order to distribute honours and recompenses to the one, and censure and punishments to the other. The marks of honour which a General bestows are different according to the various nations and customs of the army. Recompenses are also regulated according to the rank of those who claim them. The different orders of troops are also rewarded by their promotion to a step higher. These promotions, awarded to those who have deserved them, inspire emulation. Every army will be conspicuous where recompense and punishment are alone the reward of actions. Every individual endeavours to merit the one and to avoid the other. The benefits which may lawfully result from conquest should be justly distributed; all should enjoy the fruits of victory. The hope of gain animates the soldier, and urges him to act with greater vigour. The advantage of this has often been sensibly felt. But never let pillage be allowed.

As a General must be the best judge of the circumstances which may require it, he should always be well provided with money for the enterprizes, as well as for the subsistence of his army.

A good General will see that his prisoners shall not be ill-treated, that being the best means to prevent the enemy from ill treating those whom he may take.

After having endured fatigue, and gained a victory, we should indulge the soldiers in recreations. These indulgences, the consequence of success, enable them to bear new labours with more courage.

A conqueror should be particularly careful to bury the dead, neither haste nor danger should ever induce him to omit this. It is not only a pious duty.
towards those who are no more; but it should be performed, in order to satisfy those who yet remain. Every soldier would behold with indignation this neglect, with regard to his comrades, whom he has perhaps seen fight and die with valour; and he himself dreads the shame of being treated thus himself.

In case of a defeat, the General should endeavour to rally his troops, console them, and endeavour to repair their losses. Often after a victory the conqueror becomes careless; and the contempt of the enemy produces negligence. It is possible to derive advantage from this. Then a defeat may finally produce a victory.

Misfortune renders us prudent. A General who meets only with success is ignorant of the measures necessary to be adopted in cases of misfortune. Fear may sometimes occasion security. A contempt of the enemy proceeds from a foolish temerity, of which they may be victims.

Of the Humanity which should be shewn with regard to Conquests.

Great indulgence should particularly be shewn to every city that surrenders. These humane proceedings extend their effects to others, who, beholding the lenity with which conquered cities are treated, will flatter themselves with the hope of obtaining the same favours; while, on the contrary, if we exercise rigour, by depriving them of their privileges, permitting pillage, or oppressing the inhabitants, this method will only alienate, and aggravate their minds; so that the war will become difficult, and the victory consequently less easy. A people, who know that the General is an inflexible and hardened tyrant, will make every effort to defend themselves; the dread of suffering animates the heart, and even cowards become formidable, when actuated by despair. The expectation of enormous evils, which cannot be avoided, even by submission, will produce prodigies of courage to avoid them; and it is well
known how dangerous those men are, who are driven to extremities. Hence it is that sieges are generally so bloody and obstinate, and that a General is often indebted to his cruelty alone, for being compelled to abandon his enterprise.

Of Sieges.

The attack and defence of places require a great capacity and courage on the part of the General, as well as a considerable number of machines. He should take infinite precautions, and conceal his designs on the one hand, as well as his adversary on the other. The besieged, though constrained to undertake nothing, are perfectly aware of their danger, and they may perhaps find means to oppose it. The besiegers, free in their manoeuvres, are nevertheless exposed to every kind of danger. Though he secures his army by a good fosse, and by well guarded intrenchments, he has the disadvantage of being seen by the enemy from their walls; they judge of his operations, and may effect sorties to destroy his machines, and carry his weakest points.

A General who defends a place should make frequent sorties, in order to harass the besiegers. They are greatly to be feared, because it is uncertain from whence they proceed, or to where they are going. It is therefore necessary, in order to be prepared for them, that every outlet, &c. should be examined, and guards placed in ambuscade.

The besieger should prefer the night for performing his operations. The darkness concealing his preparations from the enemy, they will be ignorant of what place he intends to attack, and even of the number of implements and men which are employed. Consternation naturally takes place, and produces confusion in the orders, and in the execution of them. An unexpected attack, during the night, is always favourable to those who make it, and injurious and dreadful to those who have to sustain it.

Man believes, when in danger, with full confi-
dence, every thing which his fear inspires. Hence, night exaggerates the danger, and the smallest object appears gigantic. Darkness allows him no other means of judging than by what strikes his ear. If he is told that the enemy have mounted the rampart, though there be but one, he will imagine there are a thousand. He flies, and abandons it to the enemy, who do not fail to avail themselves of this panic.

As in a siege the soldier is compelled to endure every kind of fatigue, and the most painful labours; the example of the chief is the most certain means of encouraging him. The General, by being himself foremost, induces his men to follow him. This method has more effect than either menace or violence. The soldier then feels all the necessity of labour, and would be ashamed to refuse. His General, by performing the same as himself, flatters him with the idea that he treats him as a comrade, and not as a slave.

HISTORY OF THE INTRODUCTION OF HORSE, OR FLYING-ARTILLERY, INTO THE ARMIES OF EUROPE.

The principle of this new artillery is, that it is organized in such a manner as to perform movements the most rapid and the most unexpected; thus it can proceed with celerity either to a point threatened by the enemy, or a post which by a decisive attack it is intended to carry, follow the horse every where, if needful, and crush the enemy by the combined effect of all the means of attack and defence which the theory of the military art, judgment, and experience, can suggest.

In the campaigns of 1757, 1758, and 1739, against the Russians, it often happened that the Prussian light horse, at the very moment when they imagined themselves to be sure of success, met with a battery of cannon, though no infantry were present,
which led them to suppose that the Russians had horse-artillery, able to follow all the movements of the horse. The fact being ascertained, Frederick the Great introduced this artillery in his army in the spring of 1759, when the writer of this sketch, at the head-quarters of Reichenberg, near Landshut, saw him nearly every morning exercise this new corps himself, and direct its manoeuvres. The King made also a successful trial with his horse-artillery before he left that camp, by covering with it a reconnoitring party beyond Liechau, on the retreat of his dragoons, in a manner so effectual that all the attacks of the enemy's horse, though far superior in numbers, completely failed. The Austrians were the first who imitated this new military establishment: in 1783 they manoeuvred with horse-artillery near Prague, and since that time it has been introduced into the British, Swedish, Saxon, and Hanoverian armies, yet with considerable difference as to the calibre of the ordnance, and the way of mounting the artillerymen. The Prussian horse-artillery consists of 6-pounders, the Austrian of light 3-pounders, the Hanoverian of heavy 3-pounders, the Danish of one-pounders, &c. The Prussian artillerymen are on horseback; the Austrian ride on the carriages of the guns; the Hanoverian ride partly on horseback, partly on the gun-carriages and wurts, &c. &c.

But no European power has hitherto derived such important advantages from this new artillery as France, where it was introduced in the year 1792, and soon carried to great perfection. In order to give it the advantage of a superior fire, the French flying or horse-artillery consists of 8-pounders, and 6-inch howitzers; the ammunition is carried in light caissons, and most of the artillerymen are mounted, while others ride on the wurts. By this arrangement, in addition to the known abilities of the French cannoniers, the republican horse-artillery soon acquired a decided superiority over that of the Austrians, and maintained it during the whole war.
Since the formation of the horse-artillery, it has been found possible, without clogging or retarding the movements of advanced guards of cavalry, to make a more numerous artillery march and manœuvres with them, as well as reserves of pieces of a caliber sufficient for every enterprize with which the corps of advanced guard might be charged. This observation recals to mind the advantage and importance of the horse-artillery, and induces us to present to our readers a few interesting particulars concerning the institution, and the improvement of this sort of artillery.

It is well known that the Prussians were the first who employed it: the great Frederick had invented it at the time when, in order to resist the league formed against him, his genius multiplied his resources; where the same army, conveyed with a celerity and precision till then unknown, triumphed over superior forces, and during the same campaign, upon opposite frontiers, to the east and west of his dominions. No doubt he first tried to accelerate, and likewise to simplify, the marches of columns of artillery when on a route, then made use of the same method for the marches when manœuvring in the presence of an enemy, and at length applied it to the movements and engagements of advanced guards.

The horse-artillery was introduced into the Austrian armies during the reign of Joseph II. but it was by no means made a principal object. It remained in a state of imperfection that did not admit of the acquisition of all its advantages. The artillery-men were conveyed upon caissons, or covered wagons, which were made in the form of an old hunting carriage, called wurst-wagen. These caissons differ from the common ones only by having the cover stuffed, which affords the facility of placing the gunners upon it in the attitude of a man on horseback.

In France it was for a long time proposed in vain to form a flying-artillery. In 1791, M. Duportail,
minister of war, authorized the commanding-officer of the division of Metz to form two companies of horse-artillery. The success of this experiment, the extraordinary skill in the choice of officers and men who were employed, and who were in a few weeks able to manoeuvre with the light troops, dispelled every doubt upon the subject, and shewed how fit the French were for this service.

In the year 1792, a short time before the declaration of war, M. de Narbonne, who had succeeded M. Duportail, and formed, at his office, a committee, composed of very intelligent officers, summoned thither the generals of the three grand divisions of the armies, and the principal field-officers of the artillery and engineers, in order that they might inquire into and decide upon the means of perfectioning and extending in the French army the use of the horse-artillery.

A more correct idea of the organization of this new artillery cannot be given, than by here relating the result of this conference.

It was unanimously resolved, as leading points:

1. That a numerous horse-artillery, well served, and always kept complete in men and horses, is the surest method of protecting the evolutions of a corps tolerably trained, by supporting its attack by the bayonet, and rendering almost nugatory, by positions taken opportune and with celerity, the advantage that troops better disciplined might promise themselves from their superiority in manœuvring.

2. That for the employment of horse-artillery, and the regulation of the service, training, &c. it is to differ from the field-artillery only in the cannon being provided with better horses, and transported with the greatest swiftness, wherever it can be used with more effect; so that the artillerymen, being always able to follow their pieces, can begin to fire as soon as they are placed.

3. That to accomplish this object, it is better that the artillerymen should be all on horseback,
than if they even partly rode upon wursts or stuffed caissons, because accidents are less frequent, movements more easy, retreats more certain, and horses more readily replaced.

4. That, without excluding pieces of any caliber, it appears most advantageous to make use of 8 and 12 pounders and howitzers.

5. That it is useless to train the horse artilleryman like a dragoon intended for cavalry manoeuvres; that this would be diverting him to no purpose from the principal object; that it is difficult, if he be well seated on horseback, accustomed to mount and dismount nimbly, to guide his horse freely, without confining him to any particular rank in following the pieces, and leaving to his judgment the task of learning to know and to execute, if required, the cavalry manoeuvres, in which he may happen to be engaged.

6. That harness with long traces should be employed, whenever the impossibility of making use of it does not force the artillerymen to renounce it, because the horse remaining harnessed while the pieces are firing, all the time that is necessary for taking off, or putting to the limbers, is gained for profiting by the position taken, and because ditches and rivers can, in this manner, be crossed with the greatest celerity.

7. That in order at once to form a sufficient number of companies of horse-artillery, without weakening the regiments of artillery, it will be sufficient at first to attach to each piece two intelligent artillerymen, and to take the remainder from other corps, and chiefly from the light troops.

Upon these principles this establishment was organized in the French armies, which have reaped so considerable an advantage from it in all their campaigns.

General Dumourier demonstrated all the importance of this artillery in an invasive war, at the end of the campaign of 1792, in Belgium; and there
have since occurred other very remarkable instances of success owing to the horse-artillery, both in offensive and defensive operations. At the affair of Waterloo, while General Pichegru commanded the army of Flanders, 4000 men manoeuvring with horse-artillery (and this testimony is adduced by officers of the combined army) sustained the attack of an army of 30,000 men, supported by a train of artillery at least treble that of the French.

Bonaparte, at the battle of Castiglione, after the raising of the siege of Mantua, having ordered General Dumartin to collect and place to advantage several divisions of flying-artillery, broke the line of the Austrians, and decided the fate of Italy.

The horse-artillery did not a little contribute to the gaining of the battle of Ettlingen, in which General Moreau, although inferior in cavalry, supported his left wing against all the cavalry of the Archduke. A similar manœuvre procured General Hoche similar success upon the Rhine in the last affair of Newvied; General de Belle, who commanded all the artillery, rapidly carried in front, and firing openly to silence the fire of an entrenched line flanked by strong redoubts, is one of the officers who formed the first companies at Mentz.

The Archduke, availing himself of these experiments, had greatly augmented and perfected this artillery in the Austrian army. He attached some divisions of horse-artillery to different corps of light troops, and he thence derived the greatest advantages in the recounters and engagements of advanced posts, which preceded the decisive battle of Stockach.

This artillery is now become indispensable in all armies; it can follow the cavalry almost everywhere; it crosses rivers and morasses, the passage of which is impracticable by foot artillery; it rapidly proceeds in a body upon an unforeseen point of attack, turns an enemy's corps, cannonades it in flank or in rear, can do the duty of advanced posts, that of stationary artillery, that of the rear-guard, and
lastly, that of the corps de reserve, from which it may be detached, according to circumstances. It has not the inconvenience which has been generally imputed to foot-artillery, of retarding and clogging the manoeuvres of the troops; accordingly the French have already restricted the use of the latter almost to the sole service of sieges, with the exception of 4-pounders, which remain attached to battalions.

During the time Field-Marshal the Duke of Richmond was Master-general of the British Ordnance, a corps of horse-artillery was formed, and it is, in point of discipline and appointments, superior to that of any other nation.

**Description of Flying, or Horse-Artillery.**

The establishment of flying or horse-artillery came to us originally from foreigners; it formed a part of the military force of the Prussians, and its introduction into France took place during the ministry of Narbonne.

The principal object of this artillery is, to possess such a peculiar organization, that it may execute with facility not only the most rapid, but, at the same time, the most unexpected movements; that it may be enabled quickly to bear either upon a point that is attacked, or on a post which it is required to carry by a decisive attempt; to be constantly attendant upon the cavalry; to confound and embarrass the enemy by every mode of attack and defence, which the theory and practice of the military art and of artillery can possibly suggest; and, lastly, to effect these various operations, by the knowledge of positions, &c. &c.

From its celerity, this artillery is enabled to connect itself with troops of cavalry; to cover with its fire their manoeuvres, and to assist in rendering them superior to those of the enemy; it can either remain united in a body, or separate itself into detachments, according to the influence of local circumstances,
and the appearance and position of the manoeuvres, and troops of the adversary; the former of which should, however, be cautiously foreseen, by an able and expert officer.

A commander well grounded in his art will always so dispose of his men, as to direct their fire, in an oblique direction, advantageously on the lines and main body of the enemy; he will also vary his motions, according to the different movements of his adversary, so as to produce disorder and confusion among them, which may be effected by a variety of customary manoeuvres used in the art of war; but, above all, he will not neglect the most important and decisive point, that of covering and crossing with fire the ground occupied by the enemy, as well as that by which he is anxious to advance.

It will readily be imagined, that the execution of all this requires a certain degree of talent and information, which must, at least, be the result of a well-digested theory. It is therefore of importance to the public advantage and utility, that this part of an army should be guided and directed by able and well-instructed commanders, officers, and cannoniers; for what can with any certainty be expected from men, even in defiance of the utmost zeal and bravery, if they have not previously studied their art? The organization of this corps should therefore be similar to that of the artillery; and it appears indispensable that individuals should be drawn from all classes, and that, united together as a part of one whole, their instruction, and the examination which is exacted by the ancient artillery, may be common to both. Lastly, it would be possible, in organizing the flying-artillery, to render it a more unique body; for the cannonier, necessarily diverted from his particular avocation, by the attention which he is compelled to bestow on his horse, &c. is generally considered as being at once an indifferent horseman, and but little versed in the various manoeuvres which belong to his art.

In order to give the flying-artillery the advantage
of a superior fire, they use cannon of eight inches, and bowitzers of six. These two calibers appear to have hitherto completely answered every object proposed. Hence, the ammunition required for this dimension did not occasion an excess of conveyances, or an embarrassing weight, which, in bad soils, would follow very tardily the rapid movements which this artillery is constantly compelled to make. An eight-inch piece, pointed to six degrees, carries a ball more than 600 toises, and 480, with an elevation of twenty lines. This projectile is more than sufficient to overthrow entire lines; to create confusion, and open the ranks of the soldiery; and its effects may be considerably prolonged by other means. If they use large ball-cartridges, it is certain, that, at a distance of 300 or 350 toises, a fourth of them, at least, would be effectual; and those with small balls, if thrown at a distance of between 2 and 300 toises, more than one-third would reach the enemy.

An howitzer of six inches will, well directed, accomplish more than one object; when pointed to six degrees, it expels the charge about 600 toises; in its fall it crushes every thing which it meets with, and, after having broken the lines and spread dismay among the troops who were exposed to its irregular and vibratory progress, it bursts, and occasions the greatest confusion, particularly among the cavalry; and, lastly, an howitzer, when more approximate to the adversary, will send a cartridge, containing sixty-one balls, of seventeen lines each in diameter, the effects of which are prompt, and uncommonly destructive.

The course of the bomb depends, in some instances, on the howitzer, by giving it such an inclination as will tend to augment the degrees; that is, the angle of projection, which is presumed to be applicable to the object proposed. An artificial or natural declivity of the earth is one of the means which may be employed, if peculiar circumstances should require a large elevation in the amplitude of the projectile.
FLYING, OR HORSE-ARTILLERY.

The advocates for large calibers wish also to have howitzers of eight inches; but notwithstanding that their effect in the field, &c. differs very little from those of six inches, their weight is nearly double, their diameter is much larger, and, in using them for battle, they would require an abundance of supernumerary carriages and horses, and increase the expenses of ammunition in every point of view, without producing any real advantage.

Besides these observations, it may also be remarked, that the increase of weight, which is attendant upon a howitzer of eight inches, produces a very considerable difference in the celerity of the manoeuvres; but, it may be replied, that an advantage may yet be gained in this respect, by piercing a six-inch howitzer for eight inches. This method, however, employed in the seven years war for cannon, and which succeeded so badly, only tends to increase the embarrassment and trouble attendant upon transporting the ammunition, which is prodigiously augmented by this procedure.

The field-carriages employed in the flying-artillery are the same as those used by the foot; the only change, which has been introduced in certain companies, is in the formation of the butt-end of the sides or cheeks, which are elongated, and more elevated, in order to obviate better, in the recoiling of the machine, those obstacles which often present themselves, and likewise to prevent the end from sinking into the earth when it is soft. We have already had occasion to speak of the superiority of our carriages, the simplicity and solidity of which render them far preferable to any complicated ones whatsoever. In fact, on every occasion, the weight of the cannon or howitzer being equally applied on each of the four wheels, so effectually facilitates its progress, that it overcomes every thing, and the use which has been made of it in the present war (1794), as well as in North America, fully evinces the truth of the above remark; though false reasonings have, in spite
of experience itself, been urged against it, by such as would maintain the private interest of individuals, so manifestly injurious to the public wealth. *

When it is intended to engage the enemy, even by way of surprise, the preparations for action are the same as those for artillery in general. The fore-wheels are taken off; the cords are applied, and, during the whole action, whether it is intended to advance, to retreat, to ascend an eminence, to cross even a ravine, or lastly, to contend with all the inequalities of the soil, the manoeuvres are constantly performed by means of these cords: and, in case of necessity, a few applications of the hand, by the cannonier, will increase the means of rapidly surmounting any obstacles which may occur in the route. Hence it appears, so far from the fore-wheels being a superfluous and embarrassing part of the carriage, they are essential in this very case. They enable the piece to vary its fire, either circularly, horizontally inclined, when advancing, retreating, or in suddenly changing its position; and the cannonier is relieved from all fatiguing service relative

* All two-wheeled carriages, laden with a heavy weight, incontestably sink more into the earth than four-wheeled ones, because the whole pressure lies on the felloe, which bears upon the earth, according to the radius of the wheels, proceeding from the center of the axletree, to the point of contact of the circumference on the ground; and in a soil newly dug, softened by rains, &c. they produce ruts, which become so excessively deep, that the progress of columns is often intercepted. The German war, of 1756, fully demonstrated the thorough inconvenience of two-wheeled carriages in bad roads, for how were the artillery then embarrassed and obstructed? Doubtless their progress might be continued, comparatively speaking, if they take the precaution of driving them only on dry and level ground, or on the pavement; and, likewise, if every thing is previously arranged for their advantage. Practice has therefore demonstrated the utility of fore-wheels, and, as they have been adopted from a conviction of their excellence, by the most able generals, and experienced military men, insidious remarks against them, and the motives which have urged their use, however severe, must remain without effect.
to the ordnance. This method of manœuvring possesses also the advantage of keeping the horses at a sufficient distance, to secure the men, who are serving the cannon or howitzer, from those accidents which may be occasioned from their being frighten ed or restive, when too near the explosion, and general disorder, which they are otherwise exposed to.

The ammunition, for the use of the flying-artillery, follows the pieces in the usual machine, and in waggons called wursts.* This last conveyance is

* The waggons, called wursts, being suspended, are peculiarly advantageous, as they do not shake the ammunition contained in them, and hence preserve it from being deteriorated. These waggons are attached to the flying-artillery, which, by this means, can be promptly conveyed to any part where it may be required; and this is the principal use of the light-artillery, which is intended for the van-guard, or to follow the cavalry, and perform the most rapid movements.

From a consideration of the principles on which this artillery is founded, it is evident of what importance it is, that those to whom the direction of it is intrusted, should be well acquainted with military tactics, and have a thorough knowledge of artillery; not the common-place knowledge of a few particular motions, but a general and extensive information in the art of war, in order to reap the greatest possible advantage, by a nice and skilful placing of it, so as to annoy the enemy in every direction, and protect the movement of the troops, which are, either attacked or attacking, and by the different positions which circumstances may require to be assumed, avoid becoming a sacrifice to the enemy's fire; or, at least, to afford them few means of succeeding, but, on the contrary, to throw in their way endless obstacles to overcome. Finally, as these waggons contain less ammunition than the others greater economy should be observed, and consequently it should be employed only on the most efficient occasions.

Hence, to attain completely the desired utility of the artillery in question, it is indispensable that the persons commanding it should possess true military knowledge, and be likewise officers of artillery; it is also requisite that the subaltern officers and cannoniers should be acquainted with manœuvring; they should likewise know, that the science does not merely consist in firing rapidly a numerous succession of balls, but, on the contrary, to fire only with success at proper distances, and from their own knowledge judge of those distances, so as not to consume all their ammunition in absolute usefulness, and by such faulty
suspended, and, from the flexibility of its motions, possesses the double advantage of perfectly preserving the cartridges, &c. and, at the same time, carrying the men whose business it is to serve the ordnance.

At the period of the institution of horse-artillery, in 1792, which is likewise denominated flying-artillery, wurts alone were permitted to be employed; each of them were made so as to hold eight, or, at least, six men. The construction of these carriages has

conduct find themselves destitute at the moment when the action is in its hottest part, and most perilous. The cannoniers should also be well instructed, know the use of their ordnance, how to manœuvre it well, and be thoroughly instructed, from practice, in its true and best uses.

But this end can never be completely attained by the formation of separate companies; not but that every praise should be given to the distinguished services of this artillery during the last campaign, in which it proved, on every occasion, its superiority over that of the enemy; and how much Frenchmen, animated by patriotism, redouble their exertions, their bravery, and their talents, when the point at issue is self-defence; yet, in order to derive every possible advantage in future, it has been thought requisite to form regiments of horse-artillery, which, during peace, will be united in the same schools as the foot. By this means, they can follow the same routine of instructions, as these cannoniers to whom they are in a manner relative; their organization not permitting their instruction to exceed this, on account of the attention which must indisputably be bestowed on the horses, &c. Still, however, it is to be wished, that the commanders were artillery-officers, in whom theoretical principles should be the foundation of practice, and that this artillery, in order to afford every advantage, should be guided, in war, by experienced men.

We are well convinced of the inutility of those artillery corps which were organized in the legions of the new levy, &c. &c. who persuaded themselves, and wished to persuade others, that they were really ingénieurs, because they assumed that name, and could make a noise. In fact, this great abundance of artillery, vested without distinction in every hand, and directed by ignorance, too often produces only an excessive consumption of ammunition, and there confines its dreadful havoc. It was therefore to remedy such a serious inconvenience, that regiments of horse-artillery have been formed, from which a real benefit and advantage must result in the moment of action.
FLYING, OR HORSE-ARTILLERY.

been established in consequence, and the experiments made to ascertain the possibility, and subsequently the practice in war have proved, that these waggons completely answer the proposed end; and that the cannoniers, placed on the top, are seated both safely and commodiously. We have had a number of them constructed at the arsenal of Dowai, which are always proved previous to being admitted into the equipment of a company; but the hurry and precipitation with which they were obliged to provide for the arming of these companies, would not allow more than two for each of them; and we sent, two years ago, a memoir, to the then minister at war, to request that none other but wursts might be given to the flying-artillery, who, by this means, might do without being mounted, at least in toto. In fact, every eight-inch piece of ordnance ought to have two waggons or two wursts, which might transport a greater number of men than are necessary for working a piece of that size. For the howitzers, three wursts would be necessary; which would furnish more; and hence, for four pieces of ordnance, the whole of the conveyances requisite for their ammunition would, at the same time, contain twenty-four men; and as these wursts carry less ammunition than the usual waggons, there might likewise be added one of each kind, which would allow more room for

* The thirteen men who are employed in serving it are by no means too many, if it be considered that, during the action, the enemy's fire may kill or disable some of them, and that others are necessary to watch the drivers, &c. whilst they are engaged, thus to prevent the flight of any of the carriages or horses. Thus, it is another disadvantage which those persons labour under, who ground the benevolence of their invention on a faulty and injurious paucity of men, particularly with regard to the flying artillery, which, according to their calculations, would often be without cannoniers to replace such as accident might remove, and likewise the possibility of getting any; hence the firing would cease, inasmuch as the rapid movements, which form the very essence of this artillery, will not permit men on foot to follow them.
the conveyance of the cannoniers, and of course, lighten considerably the weight of each wurst.

Every single wurst, the top and ammunition included, does not quite weigh nine hundred pounds; if a thousand or twelve hundred pounds be added for the weight of six men, the total amount will then be about two thousand pounds; and, as the load of common waggons is always estimated at two thousand, or two thousand four hundred pounds, drawn by four horses, it is impossible not to acknowledge the superior advantage of these wursts, which, harnessed with six, and sometimes eight horses, are susceptible of all the various rapid movements required of them; but a few words more respecting them:—the cannoniers are pleasantly and safely seated on these carriages, and need not apprehend any danger; their feet are firmly supported, and, on every occasion, they can descend, without any difficulty, either singly or together, and yet not incommode or confuse each other.

From what has been already stated, it may be concluded, that the cannoniers of the flying-artillery need not be mounted; and, in that case, they might be taken indiscriminately, or alternately, from the artillery regiments. Indeed, it is the only certain means of rendering this service in every respect truly useful, because it may then be commanded by real artillery-officers, and by expert and instructed cannoniers.

It is unnecessary to enter into economical calculations relative to this flying-artillery, organized as proposed, and as it was originally intended; they are too evident in the advantages which will accrue from the horses and harness, and this object is no trifling consideration.

The objections which have been advanced, with regard to the accidents which may happen to the wursts, and by their privation dismount a certain number of cannoniers, are equally applicable to horses, many of which may be disabled or destroyed.
by the enemy. Thus, whatever modifications may be brought forward under this head, it will always be possible to advance others equally valid.

But that which principally militates against the ideas here hazarded, is the experience of the last campaign, which has demonstrated the advantage of mounted cannoniers, whence they are enabled to keep pace with the cannon, and need only remount their horses when any new position is about to be adopted; instead of which, the waggons filing off with rapidity, as soon as the change is decided upon, it is difficult for the cannonier to keep up with them; or, on the other hand, if they are compelled to wait until all the men are mounted on them, the delay which would thus be occasioned might prove injurious to the manœuvre itself, and entirely defeat its object, independent of the difficulties which the ground to be traversed may present, and the accidents of overturning, which may happen.

The advantage of our horse-artillery would be doubtless still more conspicuous, if the troops of cavalry, &c. with whom they perform their manœuvres, knew how to cover the batteries, and to display them only at the proper time; for, if the enemy be aware of the approach of a division of flying-artillery, they immediately prepare, at a distance, to avoid their fire.

Though the bore of eight inches be the more preferable caliber for the general service of the flying-artillery, still they may employ very advantageously the cannon of twelve, for it is equally susceptible of celerity in its motions; the weight of this size is only eighteen hundred pounds, whence six, or at most, eight horses, should the ground be difficult, would be more than sufficient to execute, in conjunction with the cavalry, or chasseurs, the most prompt and decisive manœuvres. This caliber is particularly useful when it is intended to attack an entrenched camp, to destroy pailsades, abattis, or the walls of small inclosed towns; and, lastly, when it is requisite to
reach and annoy troops at a distance, to disturb the progress of columns, which are advancing towards a certain part of their line, in order to reinforce it, and the junction of which it is of importance either to intercept or retard.

The ammunition for these pieces would likewise be conveyed in wurts; those intended for the howitzers might be appropriated, as it would only be necessary to alter the interior divisions, and in the construction of these, the same as in all other wagons, they are so arranged, as to be capable of receiving, if necessary, an entirely new conformation. There should likewise be, in each division of artillery, placed along the line a reserve of ordnance of this caliber, in order to be employed ultimately in this service, and consequently ready accoutred, harnessed, &c.

With regard to the cannoniers, they will be drawn from the regiments attached to the divisions; and as these wurts are covered with leather, stuffed with horse-hair, and suspended, there is no necessity that the cannonier should be previously initiated, in order to keep himself on this elastic seat, the motion of which is as soft as any other carriage similarly hung.

The preceding observations naturally introduce the following. We therefore venture to propose, that only one piece of ordnance of four inches should be given to the battalions; the ill-extended custom, or rather perhaps the abuse of that prodigious number of small cannon, has proved how much they are injurious, in general, to the end proposed. And, in fact, it is but two well known, that the ammunition of these is often consumed without the least advantage whatsoever resulting, all their effect being confined merely to making a noise; that the baggage, &c. is uselessly destroyed; and that the retention of so many men, horses, and wagons, and of so much harness, cannon, ammunition, and baggage, would constitute a very considerable saving, and enable the
government to augment the standing artillery, the only one from which any thing can reasonably be expected; both from the power and energy of their pieces, and from their commanders, who have properly studied how to employ them with the greatest advantage.

AN ACCOUNT OF THE BATTLE OF PRAGUE; BY TEMPELHOFF.

[Illustrated by an Engraving.]

As soon as Prince Charles had taken the command, he crossed the Moldau, and posted himself by Prague, so that his left wing was upon the Ziskaberg, his right upon the village of Kyge, and Malebachtz was in the rear of the right wing of his infantry. The army was formed in different lines, according to custom, with the infantry in the center, and cavalry upon both flanks; the head quarters were at Rusl. The Prince’s object was, to draw in the corps of Count Konigseg, which had been driven back by Field-marshal Schwerin’s army; and to wait the arrival of a considerable force, which was on its march from Moravia, under the command of Marshal Daun, with orders to rendezvous at Prague. The Prince’s position was on a chain of hills which extend from Herlotzes to Prague; these hills are rocky, very high, and in many places excessively steep. In front, towards the Moldau, are other hills not so high, and planted with vineyards. The roads here are so narrow and inconvenient, that an army cannot march by them in column. At the village of Kyge, the mountains begin to decrease, and continue to do so till totally lost near the out-works at Sterboholi, so that from thence by the village of Dubetch, Unter Micholup, and Hortivortz, the ground is fit for cavalry to act upon. On the right of the position is a chain of ponds, connected with each other by a rivulet which rises above Unter Micholup,
and runs with many turns, by Unter-Potcher-nitz, Kyge, Hortlortze, Klupetin, and Wirzogau, until it joins the Moldau, at Luben. On the other side are also hills, which begin at the river side, and extend beyond Obel, and are by Prosik, very high and steep. The borders of the rivulet are very difficult for an army to pass over, independent of the obstruction which the heights afford. There are, it is true, some passages, and the hills are more accessible about Kyge, and between that and Kerlogs, but still there are many difficulties opposed to the march of an army. Above Kostawitz were some water-cuts, or ponds, which were overgrown with grass, and appeared to be meadow ground from a distance, and to the eye were not distinguishable from the real meadows, which lie by the side of the rivulet. Between these are several dams, for the purpose of communicating between the adjacent grounds. There are also in other places foot-paths, which are at the utmost barely capable of admitting two men abreast. Between Kostavitz and Kyge, are two considerable lakes, and to reach the latter village, it is necessary to pass a narrow dam which separates two pieces of water; the lake also, by Klupetin, is not inconsiderable. This description of the ground, will convince the intelligent reader, that the left wing and centre of the Austrians, were secure against any attack, and that a few battalions, well disposed, were fully sufficient to have defended that position against any enemy; the right wing, particularly the flank, was very advantageously posted, but it could be turned on that side, and for this reason there was every thing to be apprehended from an enterprising adversary.

A general so experienced as Prince Charles, should have seen this. When Count Konigseg’s corps had joined him, and he found M. Schwerin’s army still approaching, he altered his position in such a manner, that while the left occupied the Ziskaberg, and the center the heights, the right wing was thrown
back, and made an angle, the points of which were placed on the heights between Kyge and Maleschutz. But still he would not venture to quit the old order, and chuse a better position for his cavalry: at any rate he ought to have drawn the cavalry from his left wing, and brought it over to his right, as it was perfectly useless in the situation it was left in. After the above change, the army was posted as in FF, (plan) so that the right wing was on a height behind Sterboholy, but at a good distance from it, and the salient angle of the position was covered by some battalions pushed forward to the hills between Kyge and Klupetin, and an entrenchment was also thrown up there QQ, and a strong battery erected. The heavy and field-artillery was distributed along the front, and advantageously posted along the heights, so that each battery flanked the other, and fully commanded the ground in their front. As an additional defence, the Austrians also began to throw up entrenchments, but they were on the day of battle incomplete, and what was done was of no use. It is doing the Austrians but common justice to say, that their positions were well chosen. In a fixed camp they always dispose their batteries to the greatest advantage; they never miss an opportunity of entrenching themselves, and when they are allowed time to do it, they derive from art, every benefit the knowledge of it affords. M. Daun was a truly original genius in this way; although always stronger than the king, he so cramped himself up in his lines, that his soldiers must have thought he could place no confidence whatever in them. In his camp by Dresden, in 1759, his caution was truly ridiculous. It is well known that his position at Plauen was on a rocky mountain, as perpendicular and inaccessible as a wall, and in front was a river, which, though neither broad nor deep, would have been very difficult for an army to pass in face of an enemy. Had there been ground for the army to form on (which there
was not), the Austrian army was here posted as in a fortress, yet the Marshal would not think himself safe without entrenchments! They were constructed on so durable a plan, that they are yet, after twenty years, in good order! not a foot-path but what was defended by a battery or an abatis! What idea must the private soldier entertain of that General, who after his defeat at Kunnersdorf and Maxen, was yet so formidable, though at the head of an army not half so strong as M. Daun's.

There are certain things, certain appearances, which excite very shrewd conjectures in the minds of private soldiers about their General. Many of them reflect as much as the philosopher does, and while they confine themselves to their natural intellects, as justly. As attack is the ground-work of the Prussian tactics, it gives energy and courage to the soldier; in such a system also, the art of entrenchment is not much attended to. This has given our enemies, and some writers, cause of merriment at our expense: in fact, our lines serve sometimes for little more than to rest a musket on; but, this is not owing to our ignorance, but our negligence of the art; we do not choose to have the freedom of our movements, or the ardour of our courage, cramped within lines; we trust to our brave soldiers, and not to a paltry defence of earth and sods, they had rather take entrenchments than build them! It is, therefore, to our honour, and not to our discredit, to be negligent on this point.

I cannot believe that the persons I allude to, think that Prussians cannot make entrenchments. There is no such difficulty in the art, it is all done by rule and measure, and the pupil can do it as well as the master! I know very well the utility of a good entrenchment, on proper occasions, and also that a General should never omit any advantage he can take; but, to use a lantern in broad day, is truly ridiculous!

Prince Charles, thought, that in this position he
should be able to defeat the views of M. Schwerin, and the King, who was on the other side of the Moldau, or able to receive them, if they effected a junction. His position seemed to promise as much. The ground in front of the salient angle, was very much intersected; an army which attempted to form on it, found endless obstructions from the nature of the ground. While struggling through these, it must be exposed to the execution of the artillery, which apprehension exaggerates much beyond what it really is, but which, however, is always very destructive when well served: but, if the army struggles and cuts through all these difficulties, there is still a fresh and unfatigued body of infantry ready to receive the assailants, when weary and exhausted, and weakened by their fire. There was one fault, however, in this position, the right flank of the angle was not well posted; the formation was undoubtedly a good one against an assailant, who could not have out-flanked it, without extending his line too much, but it should always be considered, whether in forming a potence to cover a flank, the remedy is not worse than the disease. The receding flank of the angle must be as well covered as the rest of the line, nor will that do altogether, the enemy must not be able to turn it, otherwise it is of no use. It has also another fault, the troops near the angle cannot make a retrograde movement without pressing on each other, which brings them into confusion; on the other hand, if they advance, an opening ensues, and to close this, the troops from one side or the other must close inwards, which commonly brings on a waving in the line, and, when it happens in the presence of an attacking enemy, is the first step to total disorder; finally, it gives a clear-sighted enemy, full opportunity of bringing an artillery cross-fire to bear upon the line, and rake the battalions near the angle, in front and rear. The Austrian General gained no more by this alteration, than compel-
ling the enemy to march a little further to attack him. His arrangement of his cavalry shewed no knowledge whatever, for he adhered strictly to the letter of old regulations, neither considering situation, nor the character of his opponent. Had he remained in his first position till the Prussians had closed with him, it would have saved them much toil and blood; they would have been upon his flank and rear, without being obliged to turn by his potence. It does not appear that any idea was formed of the possibility of falling on the attacking army, during their manœuvre; in fact, the Generals of modern days have not as yet advanced beyond the parallel attack, not even Eugene and Marlborough, great as they both were.

When Schwerin's army crossed the Elbe, by Brandiers, on the 4th, and took its position by Prassin and Missibitz, the King determined to cross the Moldau with twenty battalions, and thirty eight squadrons, and joining M. Schwerin's army, to attack the enemy in their position. In this intention, the troops which were ordered for the purpose, broke up camp on the 4th, in the afternoon, and marched behind the left wing of the army, which was at Wesselawin, and remained that night upon their arms. On the 5th, at the break of day, the King came from head quarters at Wesselawin, and marched with the corps into the neighbourhood of Podaba, where there are some heights which command the river and opposite bank. The pontoons followed the columns, and preparations were made for throwing the bridges across the river. To cover this, the grenadier battalions of Fink and Wedel, with some foot chasseurs, were sent across in the pontoons; the grenadiers to occupy the heights, and the rangers to throw themselves into the bushes, in order to drive off any reconnoitring parties of the enemy's hussars, who might happen to come that way. As soon as the bridge was ready, the King ordered three cannon to be fired, as a signal to the Marshal that he was ready to cross the river, which the army immediately
and in the evening took its camp in C C, by Czimnitz. While our troops were passing, some hussars of Seidlitz were seen, whereby we knew that Schwerin's force could not be far off. On the 6th, at five in the morning, the King broke up his camp in silence, and marched towards M. Schwerin's army, which had also broken up camp at midnight, and advanced towards us in four columns. When the head of the King's corps reached the neighbourhood of Stritzikow, M. Schwerin's army appeared at D, and the junction took place. The King then marched the whole into E E, so that the right was in Stritzikow, and the left in front of Ehwalla, the village of Prosej was in front of the right; the army afterwards took a position more forward on the heights, and driving back some of the enemy's advanced posts with a few cannon shot, reconnoitred their position in person; but, as he immediately saw that it was perfectly unattackable in front, the Marshal galloped off to the left wing, to see if the right of the enemy could be turned. Here he clearly perceived that the Austrian right did not extend to the advanced work at Sterbaholy, and had no point of appui, being merely posted on some little eminences near Potschernitz, and which thereabouts were lost in the plain, so that so far as related to the infantry, there was little to be apprehended in making the attack there; and also that to the right of the enemy's flank there was a plain where the cavalry could act with effect; in front of the Austrian right was a green meadow, as appeared to him, and it was likewise judged, that if the waters were still in parts, yet others were passable for infantry, so that the artillery might cross the sum and the cavalry find proper passes more to its taste while the infantry passed in column after column. On inspecting the map, it will appear, that the Marshal judged rightly. His error in confounding the ponds and water-cuts, which were concealed with grass, with the green appearance of...
the meadows in general, was merely a deception of
the eye, for let this faculty be ever so much exer-
cised, still it must remain in some degree liable to
deception.

As soon as the Marshal had informed the King of
the result of his observations, the army received or-
ders to march by its left. This was done with a
promptitude, which it is necessary to have seen the
Prussian army in manœuvre to form any idea of.
The Austrians had no idea of what we were doing,
until the heads of the columns appeared near Lower
Potchernitz. This might be partly owing to the in-
equalities of the ground; possibly, also, their opi-
nions were founded on the supposition that the King
would not attack on that day; for they had sent
their cavalry out to forage, and the infantry were
quiet in camp. But they soon began to see the busi-
ness in a more serious light. The cavalry foragers
were ordered in as fast as possible, and the whole to
mount, and form to the right in the plain behind Lower
Micholup; Prince Charles also sent his cavalry of the
left wing in the greatest haste to strengthen his right.
These movements were executed in full time. The
Austrian cavalry formed in three lines, to prevent the
advance of the Prussians; General Haddock made
with his corps, an angle in advance, the right flank
being near the ford of Lower Micholup, and his line
in oblique to the rest of the cavalry. The infantry
also received orders to march by their right; which,
although executed with their utmost speed, they did
not arrive at the heights behind Sterbaholy until
the Prussian infantry had arrived there. During this
period, the King's army continued its march; the
infantry struck to the left below Potchernitz, the
heavy artillery and a considerable part of the cavalry
through the village. As soon as the left wing ar-
ived in front of Sterbaholy, the Marshal ordered it
to form and attack; a part of the infantry passed
upon the dams, some battalions defiled through
paths, and others endeavoured, as well as they could,
to get over the meadows. This did not, nor could not take place in the best order; the dams were very narrow; some of the battalions were even obliged to file off to pass them; those who crossed the meadows found the ground more boggy than was expected; the ponds, also, which had been let off, caused great obstruction; the battalions which came upon them could hardly get out again; the regiments of Meyrink and Treskow were up to the knees in the marsh, and required their utmost exertions to extricate themselves; several battalions were obliged to leave their guns behind, and others saw themselves deprived of this assistance at the very moment when they wanted them most, and could use them to most effect; while the enemy gained time to line their front with a very numerous and well-served artillery. Nevertheless, this invincible infantry surmounted all their difficulties, and succeeded in forming their line. This took place about one o'clock. It would have been better, could they have halted and taken breath for a moment, for they were terribly fatigued; but their ardour was such, that they immediately advanced against the enemy. The Austrians waited their attack with coolness, but began a most dreadful fire of artillery. The King had given orders for the infantry not to fire, but to fall upon the enemy with fixed bayonets. This order was punctually obeyed. In spite of the terrible cannonade, the infantry came on in better order than could be expected; at the distance of 400 paces they came to the charge, in order to bear down the enemy by the violence of their charge. The fire of the enemy was at this time so desperate, so destructive, that it became impossible to close up the spaces in the battalions; the hitherto never to be withstood grenadier battalions were forced to fall back, and their example was followed by the regiments next to them. Fouquet's regiment lost their guns and colours; some guns were also lost by other regiments. When the Austrian grenadiers saw this, they came down from the
heights, and fell upon the Prussians with their sabres. This they have frequently attempted during this war, but generally with bad result; it is usually done when the enemy turn their backs, and in the first view it seems eligible enough; but the superiority of the other weapon in the present day, when duly considered, will insure it the preference. The foot soldier, when he takes his sabre in hand, must either fling or throw away his firelock; in the first case, it is inconvenient to him in his march; in the second, he is without defence; in either case, he must fall back if the enemy rallies, or their second line advances upon him.

The Austrians have observed this custom among the Turks, when the janizaries, after the vollies, fall on with their sabres; but they do not recollect, that to the Turks the use of the bayonet is unknown, and that this is for the infantrymen the first of all weapons. But it seems that the Imperial grenadiers are very much flattered with themselves on this head, and consider it as a proof of valour wherever they make use of the sabre. But the truly brave soldier will use the bayonet to much more effect than the sabre, either in attack or pursuit; and to him, an attack of his antagonist with sabre in hand is a mere ridicule. Nor did one single Austrian grenadier in reality give a blow with a sabre; the battalions of the Prussians which were forced, fell back with a very quick pace, it is true, and considerable confusion, behind Ster-baholy, as far as the pond of Dubetsch.

During this time, the cavalry of the left of M. Schwerin's army had passed over the Danube at Ster-baholy, and formed in the plain on the left of that place; so that the left flank was posted on the fish-pond by Lower Micholup. This pond is about 200 paces long, and the Austrians waited their approach behind it, without attempting to obstruct it in any way whatever. This, considering the confusion into which the Prussians had been thrown, must have been owing to a want of the coup-d'œil on the part
of the Austrians, or an uncertainty in their plans. However, they were soon driven from this ground; for as soon as the Prussian cavalry had marched up, the Prince of Schönuch, who commanded it, fell on the enemy, threw their first line into disorder; but thereby exposing both his own flanks, was turned on each of them; and being attacked by the second line of the enemy, which immediately advanced, was driven back. But the Prince rallying his troops, came on again to the attack, and broke their line in some parts, but failed in others. However, Colonel Warnery, who was posted behind the left wing of the infantry with five squadrons of Putkammer's hussars, advanced, leaving the pond of Lower Micholup on the right, and manœuvred so skilfully as to fall on the flank of the hussars commanded by General Haddick, and not only dispersed several regiments of the enemy, but also prevented their following up the blow they had given to our cavalry. There is this difference between the actions of cavalry and those of infantry, when the latter have forced their enemy they can advance in the best order and follow up their blow. But the cavalry must sound the signal to form, and must alight again. This gives an opportunity to the enemy to do the same, which happened in this case. The Prussian cavalry formed itself anew; and as other regiments were come from the right of the army, as a reinforcement, namely, the hussars of Zieten and Werner, they fell upon the enemy again; and this charge was conclusive. The whole body of the Austrian cavalry were completely broken, as a part was thrown upon their infantry, and the rest obliged to fall back towards Sabelitz and Michle.

Some of their regiments endeavoured to rally; but the dragoons of Stechow, joined with the hussars of Puthammer, now rallied by Colonel Warneri, attacked them again, overthrew them, and took the standards of the regiment of the Archduke Joseph, by which the right of the Austrian infantry began
to waver, which was increased by some squadrons of the Prussians, who found the way to fall in upon them. During this engagement of the cavalry, M. Schwerin was active in getting the infantry again into order; he ordered some battalions from the second line into the first, in order to drive the enemy back. This was done in an instant. It was, however, very painful to him, that his own regiment, following the example of the one next to it, should have been induced to give ground. The Marshal dismounted from his horse, seized the colours of the regiment, and, advancing at the head of it, like a true hero, died for his country! History affords few instances of such a noble, such a patriotic action. His death pointed out the road to victory. As he was giving up his breath, he saw that his regiment, and the rest of the line which had formed, was advancing to attack the enemy again. Several other Generals also followed the example of their Field-marshal, dismounted, and led on their brigades on foot. This example, and their encouraging harangues, gave the wavering soldier new courage. The enemy, who was before following, could not now resist them, but fell into disorder, which soon turned into a flight, which, according to the account of a Russian officer, then a volunteer with the Austrians, whose papers were taken in the baggage at Leuthen, was so precipitate, that it appeared like the running of a flock of sheep out of a field; and 200 Prussian Hussars were sufficient to drive before them five Austrian regiments. The loss of the cavalry on the part of the enemy was one cause of this precipitate retreat. Several inconveniences resulted from the movement which the Austrians made in the face of the King's army, to form the potence, and extend their flank to the right, in order to secure their flank and rear: first, the march began and was conducted in great hurry; the road by villages, hills, and defiles, was very inconvenient; of course, the columns lengthened, and had to close up again; all which
was attended with great loss of time: 2dly, As the troops in G G, aliitted by the right, which was on the heights behind Sterbaholy, the left of the angle G G, must naturally press forward, to take the alig-
gament, whereby the distance between the angle and
the rest of the army, which made the left flank, and
whose right was on the village Hortorzes, was still
more increased. This appears to have been the true
cause of the opening which appeared in the enemy’s
line, and not the pressing forward of the right wing;
for if the whole line had followed, 200 paces could have
been of no great consequence; and certainly the right
did not advance more than 300 or 400 at the very
utmost. I rather believe that the enemy trusted too
much to the difficulty of the ground between Kyge
and Hortorzes, and relied on the advanced posts
which were sent on to Q Q, to cover this disad-
vantage. The King saw the consequence of this
manoeuvre in an instant, of course not a moment was
lost in turning it to profit; as soon as the army had
marched so far to the left that the grenadiers of the
right wing had come where the road from Sattalitsz
goes toward Kyge, his Majesty ordered the attack
upon the post by Q Q. General Manstein, who com-
manded the brigade composed of the grenadier re-
giments of Konitz, Fink, and Wedel, with four
companies of the regiments of Winterfeldt and Fer-
cade, marched up against it, supported by the ca-
alry S S, and the infantry regiments of Kyenplitz
and Manteufre. The grenadiers, according to their
orders, marched up with fixed bayonets, but did
not begin to fire until they could distinguish the
whites of the enemies’ eyes; nor would they have
done it then, but from the loss they sustained from
the enemy’s grape-shot. After our infantry had
poured in two volleys, the enemy drew back their
artillery from the entrenchments and retreated, our
line still advancing upon them.

The gaining this point was of the greatest effect;
for as the Prussian army, from left to right, one after

C 5
the other, fell in with the enemy, the battery P, severely flanked those battalions which attacked beyond Kyge and Hostawitz. The infantry now not only flanked the potence G G, on the left, but also the troops upon the Ziskabeg in the right flank; and their artillery could be used with the greatest effect in both lines of the enemy through their whole length. The battle could not but be now decided soon, and it accordingly was. The King, with the right wing, passed through and by the village of Kyge, and pressed with impetuosity through the opening; but this was not effected without surmounting a succession of difficulties, in which the regiments performed prodigies of valour.

The loss of some regiments was astonishing. That of Winterfeld, in the attack of the battery, lost above 1000; the first battalion suffered most; it advanced under the heaviest discharges of grape, as if it had been at a review. The grenadiers of Meritz and Master, who were ordered up to support it, cried out, "Comrades! give us our turn, you have had honour enough!" These regiments escaped no better; but at length the enemy was overthrown, and driven from his first position between Kyge and Sterbaholy. After the Prussians had aligned themselves in M M, as well as can be done after such a desperate engagement, they continued to advance, and drive the Austrians before them. The latter formed in R R, so that when driven down from one hill, they occupied another in line, and letting the retreating troops pass through them, defended their position with the most obstinate valour. During this, the Prussians kept in continual advance W W, inclining still to the left, towards the Moldau; and the right of the enemy was now completely broken, and fell back in total disorder behind Michle and Sabielitz; the retreat of their center and left was entirely cut off, and they were obliged to throw themselves into the city of Prague. The King had advanced so far, that by the conclusion of the action the right of the army
was not far from the Hospital of the Invalids; and
the left, which passed Michle, was at a short distance
from Wischerad. After the battle, the enemy at-
tempts to quit Prague, and retreat by Schmichow
and Konigsaal; but Marshal Keith forced them to
fall again back into the city. Another column at-
tempts to get by the Moldau, behind Wischerad,
but was checked by the left wing of the King's
army. During the battle, Prince Maurice was to
have thrown a bridge over the Moldau, by Brunick,
above Prague, to pass over a body of troops, and
take the Austrians in the rear; but finding that he
had not pontoons enough, he was compelled to give
up his plan, and content himself with cannonading
the enemy in their retreat. Had the Prince been
able to execute his intention, the whole army would
have been cut off. Thus ended the battle of Prague,
fought on both sides with extraordinary bravery.
There are persons, who, in their admiration of the
ancients, consider the Greeks and Romans, in their
military achievements, as giants, and our moderns
but as dwarfs in comparison with them. Had these
been eye-witnesses of the battles fought during this
war, or could they, in reading the histories of the
military actions of both ages, divest themselves from
prejudice, they would see that we not only equalled
the most celebrated actions of the ancients in cou-
rage, firmness, and patriotism, but in many instances
exceeded them. The Prussians did all that was to
be expected from brave experienced soldiers, who
loved their country. I will give one instance: after
the regiment of Ilgenplatz had broken the enemy's
line, it came upon a very broad ditch, that seemed
full of mud; some planks for foot passengers lay across
it in different places; the soldiers defiled over these.
Prince Henry, who led them on, as soon as he per-
ceived this, threw himself from his horse, which he
let go, sprung into the ditch, and cried, "Boys, fol-
low me." In an instant the whole regiment leaped
into the ditch, almost up to their knees, and having
waded through, fell upon the enemy, and soon forced
them to give way. M. Schwerin's army marched in the night; for about a mile (German) the ground was of the most broken and difficult kind; when at length they came on to attack, they found in their front every obstacle that art or nature could have thrown in their way to damp their courage; morasses to wade through, precipices to climb, and the enemy posted on these, and covered in front by a formidable line of artillery, which hurled death against them! But all this had no effect to terrify them, and they marched on to the attack; it was not to be wondered if some battalions were disordered, and fell back: this, however, could not be called a flight; nature was not able to bear up against such continual fatigue; they fell back no further than out of the reach of the enemy's guns, and remained there no longer than to take breath, and form again, in order to renew the attack. Whenever a battalion of the first line was driven back, one from the second came to take its place; as soon as the former had put itself in order, it immediately marched up to its original position; no battalion was driven back a second time, and some not at all, as for instance, the regiments of Alt, March, and Pomerania. Some may approve of Lloyd's observations on this battle; I for my part am of a quite different way of thinking: to judge of Frederick's battles, a man must take a very particular point of view; they are so throughout original; and so different from any others in ancient or modern times; nor can any rules be applied to them, even if one has Puységur, Quincy, and Fouquieres by heart. Without following the beaten path of precedent, the King struck out for himself a system, the principles of which are yet known to few. His genius seems to have brought military knowledge to that pinnacle of elevation, at which it must either stay, or descend: his troops were so exercised to all movements, that the manoeuvring of the whole army was done with as much facility as the movements of one battalion. The King had a talent of masking
his plans, which is unequalled by the greatest of the ancient generals; nor indeed had they, or the moderns, any idea of it. In addition to this, he created for himself Sparta: out of the Macedonians left him by his father. It is for these reasons that he was able to resist the formidable combinations against him: and never did he appear greater than when most depressed by fortune. Among the many reasons whereby a General may be induced to give battle, one of the strongest is, when he may by victory be able to destroy the whole enemy's force irretrievably, at the same time that the loss of it shall no further effect him, than the usual influence. such an event has upon the remainder of a campaign. This seems to have been the case in the present instance. It was always possible that the King, with the wisest measures, might be beaten; this he knew very well: but would such an event have had any very extraordinary influence on the rest of the campaign? He six weeks after lost a battle under much more unfavourable circumstances, being 30,000 men weaker; and yet what did the enemy gain by it at the end of the campaign? Nothing. As the King had so many enemies to contend with, it was necessary to strike a speedy and decisive blow: in this case not a moment must be lost; accident or fortune frequently in such a case favours the enterprising more than whole lines of batteries. The King undoubtedly knew what his situation required; he for every reason saw further into it than any other could, either at the time or since. Whatever critics may say of the rashness or imprudence of the attack, we must suppose he had fully sufficient reasons for what he did; nor can his motive be judged by the scale of ordinary human capacities.

**Strength of the two Armies.**

It is a point of consideration to many, to be informed of the forces of the contending armies in a
battle; they expect thereby to acquire an elucidation of many material points. The defeated consider it as an exculpation to be overpowered by superior force. It is rare to meet with a candid avowal of a fault; but in war it is no disgrace to be defeated by an able General. If Montecuculi and Turenne met, one of them must have been beaten, yet it is difficult to say which was the greatest man. The true criterion of talent is, the comparison of the conduct of both after the battle.

The whole force of the Prussian army, which was to act against the Austrians, consisted, at the opening of the campaign, in 105 battalions and 161 squadrons, in three corps.

<table>
<thead>
<tr>
<th>Battalions</th>
<th>Squadrons</th>
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<tr>
<td>One under the King</td>
<td>52</td>
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<tr>
<td>Under the Duke of Bevern</td>
<td>20</td>
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<tr>
<td>Under M. Schwerin</td>
<td>36</td>
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The whole of these were not, however, at the battle; six squadrons remained to keep the King's communication open with Saxony. M. Schwerin left two grenadier battalions in Rosel and Nieyse, together with several more, which were left for other purposes. The army of the Duke of Bevern also left some battalions behind it. So that on the day of battle the whole united Prussian army consisted of 64 battalions and 123 squadrons. Marshal Keith was on the other side of the Moldau with 26 battalions and 38 squadrons. Having been at considerable pains upon the subject, I can answer for the correctness of this statement.

13 Grenadier battalions, 753 (firelocks) — — — 9,789
25 Musqueteer battalions, with full augmentation of 40 to each company — — — 22,500
26 Ditto ditto, without the augmentation — — — 18,200

64 Total infantry — — — 50,489
Artillery ........................................ 1,200
40 Squadrons of cuirassiers (200 if complete) .... 6,712
3 Squadrons garde de corps ...................... 600
30 Squadrons dragoons ......................... 5,082
50 Squadrons of hussars (152 without officers, if complete) 8,445

123 Total cavalry ................................ 20,839

Grand total of the Prussian army on the day of the battle of Prague, exclusive of M. Keith's army ........................................ 72,438

Regiments, however, do not go so strong into the field as they appear upon paper. I shall venture to deduct 7,570 men, at a very moderate computation, from the above total, under the following heads: The loss at Reichenberg, and other small skirmishes, 1000 men; baggage, sick, and deserters, 15 to each company; and the cavalry recruits not fit for the ranks. This scale, applied through the whole, makes a deduction of the above number, and leaves of men actually in their shoes in the field, 64,868.

Of men fit for duty in the Austrian army, according to an accurate list, and exclusive of the Croats, and other light infantry, and the garrison of Prague, with the sick, &c. the following is the number:

64 Battalions, 72 grenadier companies ....................... 51,621

Add 4 battalions 4 grenadier companies of Karlstadt 6,000
2 battalions 2 grenadier companies of Warasdin
2 battalions 2 grenadier companies of Bennaalists

127 Squadrons of cuirassiers, dra-
goons, and hussars, exclusive of the town-guard of Prague 18,000
Artillery 2,000

Grand total 76,621

The two armies, it appears by this statement, were nearly of equal strength. But the difference of numbers, if not out of all proportion, has no great effect; 50,000 men are able to encounter 60,000, or even 70 or 80,000, if they are well commanded. It has frequently happened that numbers were injurious, and the Generals of the first class have preferred small armies. The advantage of numbers is, that it enables detachments to be sent on the flanks and rear of the enemy.

DESCRIPTION OF THE BATTLE OF LEUTHEN,
BY A PRUSSIAN OFFICER.

[Illustrated by an Engraving.]

AFTER the defeat of the combined armies at Rosbach, and that the King had nothing to apprehend on the side of Saxony, he determined to stop the progress of the Austrians in Silesia. For this purpose he took with him,

3 battalions of grenadiers,
15 battalions of infantry,
18 squadrons of cuirassiers,
5 squadrons of dragoons,
5 of hussars.

Total—18 battalions, 28 squadrons.

With this force he marched from Leipsic on the 12th of November, and came on the 28th to Pachwitz, where he halted till the 3d of December; and where the troops then retreating from Breslaw, under the command of General Zieten, joined him. At this place, the army was cantoned on the march, and supplied at the charge of the country; circum-
stances made this *unavoidable*; for, as the army took nothing with it but what was absolutely necessary, and there were no magazines formed, bread was of course very sparingly delivered, and what fell short of that article was made up by the places where the troops were cantoned. Where the soldier is well provided in his quarters, the longest marches are endured cheerfully, and the troops advance against their enemy with alacrity and good will.

As the King knew that there was a small Austrian corps in Oberlausitz, under the command of the Generals Marschall and Haddick, that might disturb his march, he detached Marshal Keith with a body of troops through the mountains, over Marienberg and Pasberg, towards Bohemia, to draw the attention of the Austrians that way. This General fully effected the purpose for which he was sent; he marched against Leutmeritz, by Kommotau and Laun, levied heavy contributions, and destroyed the magazines and bridges at Leutmeritz; and then, on the approach of General Marschall's corps, retreated by Pasberg into Saxony, and took up his winter quarters there.

While the King was upon his march, the news of one misfortune followed close upon another; hardly had the intelligence of the surrender of Schweidnitz arrived, before the account came that the army of the Duke of Bevern had been defeated at Breslaw, that town taken, and the Duke made prisoner, together with the garrison, which was entirely ruined; for the eleven Silesian battalions which marched out, hardly made up 400 men each; and the desertions among the Silesian regiments of cavalry had come to such a pitch, that many of them had hardly a third of their complement. By these causes the Duke of Bevern's army was very much reduced indeed; for, reckoning their loss only at 6,000 men, and the loss in the battle by killed, wounded, and prisoners, at 4,000; this, deducted from 25,000, reduced General Zieten's force, to so low a number as only 15,000 effective men; and, reckoning each
battalion of the King's army at 600 effectives, and each squadron at 100, this makes a force of no more than 13,600; making in all, after the full junction, an army not exceeding in number twenty-eight thousand six hundred men, to march against the Austrian army, of at least eighty thousand!! The latter was, indeed, so triumphant from its late successes, and despised the Prussians so much, as to call the King's army the town-guard of Potsdam.

A succession of the favours of fortune, seem to take from great minds all their energy, and reduce them to a level with the rest of mankind; but to such, misfortune on the other hand, restores their proper tone, and gives them all their former powers. The King summoned all his general and staff-officers to head-quarters, and, without reserve, detailed to them every particular that had occurred, related to them that it had fallen to the fortune of the Austrians to obtain possession of Schweidnitz, to defeat and take prisoner the Duke of Bevern, and capture Bres-lau, but that in all these unfortunate circumstances he had such a confidence in their courage and firmness, their zeal and love for their country, that he was satisfied he should, by the first opportunity that offered of attacking the enemy, wrest from him all these hitherto acquired advantages. He desired this to be made known through the whole army, and especially to the private soldiers, to explain what his intentions and expectations were. They were told that they were to attack the enemy in his post, that his numbers were not now a subject of consideration, that the King trusted his troops would attack, and do their utmost to defeat their enemies; were they even entrenched up to their teeth, this was the time for them to shew that they were true Prussians, and that they would then have a second day as glorious as that they had lately seen at Rosbach.

Who could hear this from his King and remain unmoved? Who, of all the soldiers did not wish to be that moment led against the enemy, and to have an opportunity to shew by deeds, not words, that he
was worthy of the confidence that was placed in him? The courage of every one was wrought up to a pitch of enthusiasm, all ideas of danger vanished, and each felt in his own mind a presage of victory.

Any one who knew the state of the Prussian army at that time, would have been convinced that, as it turned out, victory would be with the King; it consisted almost entirely of natives of the Prussian dominions, the foreigners had mostly deserted, and the few who remained had acquired the character of the natives: A strong love for their king and country was the universal sentiment, and if ever a modern people could be compared to the ancient Spartans and Romans, it was the Prussians of that day.

On the junction of General Zieten's corps with the King's, it was determined to advance against the enemy, the army being formed according to the annexed plan.

On the 4th of December, at day-break, the army marched from Pauschwitz in the following order to Neumark: the advanced guard consisted of 800 volunteers, the foot chasseurs and free battalions, the hussars (all except Werner) and the dragoons of Treitsitz, Moorman, and Kroloff, with ten twelves-pounders.

The army followed in four columns, marching off by the right flank; the first column consisted of the cavalry of the right wing of both lines; the second column consisted of the infantry of the right wing of both lines; the third of the infantry of the left wing of both lines; and the fourth of the cavalry of the left wing of both lines: the hussars of Werner formed the rear-guard; the heavy artillery was formed in two brigades, and marched in the rear of the second and third columns.

In Neumark, and in the rear of it, was a corps of Croats and Austrian hussars, amounting to about 4,000 men, to cover the batteries; the hussars, supported by the volunteers and free battalions, broke and dispersed these troops, killing about 200, and making 600 prisoners; the batteries of the enemy
fall into our hands, and the head-quarters were taken for that night in Neumark, where ten battalions were posted, the infantry of the advanced guard was cantoned in Kemmendorf, and the cavalry encamped in front of it; the principal part of the cavalry of the line encamped beyond the town of Neumark, the infantry behind it, the heavy artillery marched through the town, and posted itself on the other side of it. This evening the King received intelligence, that Prince Charles of Lorraine, with his army, had passed the Loke and Schweinditz, and was encamped in a position in front of them.

Dec. 5.—The army was in motion before day-break, one battalion of grenadiers was left to occupy the castle in Neumark, and two battalions of infantry were left with the baggage and heavy artillery; the order of march was the same as on the preceding day. The advanced guard was formed before Kemmendorf, the cavalry in front of the infantry, which occupied the heights in that neighbourhood. In this position it remained until day-break, when the army advanced, the ten heavy twelve-pounder batteries were brought forward, and notice was given to the whole army, that the Austrians were in their front, and that there would probably be an action in the course of that day. This intelligence gave universal joy, and it could be read in the eyes of our brave and determined troops, that they waited with impatience for the moment of coming to action with the enemy; every thing on this occasion combined to assure us of victory. The thick and foggy weather was of service to us, by concealing our march from the enemy. The corps commanded by the Saxon General Hostitz, which was posted on the heights near Berna, and which consisted of three Saxon regiments of dragoons, and two Austrian regiments of hussars, was defeated by our hussars and dragoons; eleven officers, and 540 men taken prisoners, and the rest killed or driven in upon their own army. The infantry of the advanced guard took advantage of this skirmish to throw themselves into the copse woods,
in front of the villages, Polkendorf, Lampeydorf, and Katlau, in order to cover the attack.

During this time the columns pursued their march in the very best order. A finer sight can hardly be imagined; the heads of the columns were posted exactly at their proper line and distance, the divisions had their ground as precisely as if they were at review, ready to form up with the greatest rapidity.

After the enemy's advanced posts by Berna were driven in, the King had an opportunity of reconnoitring their position; their right wing was formed in rear of the wood by Nissern, that flank covered by the village, and several large ponds and water-courses; their front extended along in rear of Fobbelsitz and Leuthen, and their left wing between this last village and Sagskutry; this left wing was closed in by Nadasti's corps, which formed an angle with their line, his running towards the ponds and marsh of Gohlau. Between their left wing of their grand army, and the right of Nadasti's corps, with the village of Leuthen in their right flank.

The King had a perfect previous knowledge of the ground which the Austrians had chosen for their position; that part of it in front, and on the flank of their right wing, was by far too much intersected to be attackable. His Majesty, therefore, resolved to attack them on the left, and gave orders that, in so doing, the left of the Prussians should not advance, but remain entirely out of musket-fire. As soon as the heads of the columns had passed the village of Berna, so as that village was between the heads of the second and third; the four columns formed themselves into two lines, which, by the heads all wheeling to the right, was executed with extraordinary celerity; the advanced guard remained on the left of the army, and was appointed to make the first attack. A little after twelve, the army marching in two lines, the cavalry on the flanks, the infantry to the center, the advanced guard on the left of the head of the line of march, arrived
on the small heights between Lobetintz and Kartschutz. We were here pretty near the enemy, so that the King, from the windmill of Lobetintz, could overlook their whole position; I could, from where I was clearly distinguish them. The advanced guard having received orders to attack them, formed according to the plan. As soon as it had the villages Kurkschitz and Streigwitz to its right, six battalions formed at an angle to the line, covered the flank of the cavalry, the other four attacked the village, which was protected by the fire of a battery of ten twelve-pounders.

General Nadasti had placed himself on the left wing, to be better able to fall on the flank of our army, which had hardly formed (in G and H) when his corps appeared from behind the wood, and attacked our cavalry, which had also advanced, making some impression upon it; but the battalions of the advance, which had been formed in a right angle with the front line, to cover the flank, gave such a heavy fire of small arms as completely drove back the Austrian cavalry with considerable loss. About one o'clock the firing of cannon and small arms was general, the six battalions attacked the Wirtemberg grenadiers, which were posted behind an abattis, and drove them from it. General Wedel attacked the Austrian grand battery, which was planted on the height, in front of Sagschutz, with two regiments, and took it after a short resistance; whereon the whole corps commanded by Nadasti, fell into disorder; and, although several battalions which had posted themselves behind a ditch, made some opposition, they were very shortly thrown into confusion.

During this attack of the advanced guard, the army was still moving to its right, and the advanced guard doing the same, the enemy were instantly overflanked, at the same time that the six battalions before-mentioned were upon their backs, advancing in such a manner, that they always formed a certain
angle with the line of the army; by which it happened that all the troops which were sent to support the enemy's left, were thrown into confusion the moment they attempted to form. As the enemy was thus brought to waver on the left, the King gave orders that in the army's advancing, the heavy battery of twelve-pounders should bear upon that flank, whereby the enemy, when they attempted to form a line, en potence, behind Gohlau, and secure that flank of their army, were constantly enfiladed, while the remainder of their line was attacked in front.

The cavalry of the right wing (in N) which had hitherto been prevented from acting, by the obstacles of underwood, hedges, and ditches, at length found an opportunity behind Gohlau; Zieten's hussars fell here upon the retreating Bavarian infantry, cut down a number, and made above 2000 prisoners.

The enemy's Generals during this time were engaged in forming, of that part of their army which had not yet come into action, a salient angle, whose point was at Leuthen; and also in bringing as much artillery as they could collect, and placing it on the height behind the village. This place was not only at the beginning strongly occupied, but, in addition, a vast strength had been collected, partly by the reserve which came there from the right of the Austrians, and partly by a number of fugitives from their left, who had thrown themselves into the houses and church-yard, and who all seemed determined to maintain the post to the last. The Prussians on the other hand advancing (at L) were determined to carry the post, cost what it would; three battalions attacked the village, and commenced the most bloody action that ever was seen. The Austrians defended the village with the most surprising obstinacy; one battalion of ours, after another, came on to the attack, so that at last the left wing, which, according to the King's order, had hitherto kept back, now closed with the enemy: after a desperate action of half an hour, the Prussian guards, led by
General Mollendorf, then a captain, forced the Austrians from their post.

The reduction of this village was a step toward victory, but the Austrians had no inclination to quit the field of battle; they attempted again to form behind Leuthen, taking advantage of some ditches and enclosures, which they lined with grenadiers, and other infantry, but all was in the greatest confusion amongst them, and I do not exaggerate when I say, that near the windmill they were full a hundred deep, of course the artillery made dreadful havoc, and they were soon compelled to betake themselves to flight.

During the attack of the village, General Driesen, with the cavalry of the right wing (N) attacked the Austrians (O) of the left wing in front; the dragoons of Barcuth, inclining to the right, also fell upon their left flank. Notwithstanding a heavy fire of musketry, our cavalry at length bore down the enemy, and drove them from the field so completely, that they could never attempt afterwards to make any stand. Our cavalry then fell upon the flank of the Austrian infantry, and made whole battalions prisoners. Their right wing had not a better fortune: while the resistance was making at Leuthen, the right quitted their former position, and made a movement to the left (P); our cavalry of the left, which had hitherto remained behind Lobetinz, advanced as soon as this movement of theirs was perceived, and attacked the cavalry of the enemy's right (Q), defeated and put it to flight, and then fell upon the flank of the infantry.

The success of the cavalry on both flanks, gave conviction of the necessity the enemy was under, of giving up Leuthen. Their army, however, made another attempt to rally, and form in (R): but our army advanced regularly, and accompanied a point (SS) whereby they perceived that they were completely out-flanked; and also having no cavalry to protect their line of infantry, the Prussians fell in
THE BATTLE OF LEUTHEN.

Upon them, and made a multitude of prisoners. There then remained nothing else for the defeated army, but to make their escape as well as they could, by the bridges in Lissa (T) and by Rathen, and over the bridge of boats (U) across the river Schweidnitz, but which the close pursuit of the Prussians rendered it very difficult for them to effect. After the action, the Prussian army took a position at night fall between Gutterwitz and Lissa (V V).

After the army had received orders to halt, the King, riding along the front, asked if any of the battalions would follow him to Lissa? Two battalions of grenadiers, and one of fusileers, stood to their arms immediately, and advanced, the King leading them. The houses in the town were filled with Austrians, partly wounded, partly unhurt. The King rode toward the castle, attended only by one officer of his suite, and going through a crowd of Austrian officers, entered an apartment, which he ordered to be prepared for himself. But, as the grenadiers were advancing through the town, they received a heavy fire from the houses on both sides; in consequence they were immediately forced, and all the enemy found there, put to the bayonet.

The General and Staff Officers coming in by degrees, his Majesty entered the apartment where the parole was to be given out. The Generals approached to wish him joy of the victory. The King’s first words were, “After such a day’s labour, rest is good.” He then thanked them, in the most gracious expressions, for the new instance of their valour and zeal, which they had given, and which would raise the renown of their name and nation to the latest of after times, and gave orders that it should be made known to the whole army, how satisfied he was with their behaviour.

On the 6th, the army marched in two columns by their right, and crossed the river Schweidnitz; the Austrians had crossed the Loke, and had re-assembled as well as they could, in the neighbourhood
of Breslaw. General Buccow, with their rear-guard, was posted by Hofgen and Hillier Mochber, but retreated, after firing a few cannon-shot upon our Hussars. Prince Charles broke up his camp at three that morning, and retreated by Borau and Schweidnitz, towards Bohemia. On the 7th, General Zeiten, with three battalions of grenadiers, three regiments of infantry, four regiments of hussars, and five of dragoons, with two free battalions, were detached in pursuit of the enemy. This small corps was conducted with such ability, as to force Prince Charles to quit Silesia in the space of fourteen days. The expedition is well worthy of a particular account, were this a place for it, as well because of the instruction it would afford in the smaller system of warfare, as on account of the very scientific principles on which it was conducted; but it is enough to say, that Zeiten commanded.

By this battle, and its consequences, the Austrians lost near 60,000 men, which is easily ascertained; above 6,500 men were killed or wounded in the action, I will take the half, as many of the wounded fled into Breslaw: 21,500 men were made prisoners, 17,146 laid down their arms on the surrender of Breslaw: General Zeiten made 2,000 prisoners; at Neumark, on the day preceding the action, they lost 800; about 6,000 deserters joined our army, and, in the spring of the ensuing year, the garrison of Schweidnitz was forced to surrender, which was 5,000 strong; at Lignitz, we were assured by the Austrian officers, that there were but 9,000 men of regular infantry, 28,000 cavalry, Croats, and other light troops, as they entered Bohemia; nor does this appear too much, for, excepting some small detachments remaining in Saxony and Bohemia, this army, which was in the battle of Leuthen, was the whole Austrian force.

I have always observed that all the King's battles were conducted upon ideas which were entirely original; this is no where more strongly observable,
than in the one I have now described; in ancient
history there is none, and in modern hardly any,
that can be put in a parallel with it: in certain re-
spects it makes an epoch in military science, and it
also contains in itself the theory and example of a
system, the discovery of which is due to the King.
If we cast our eyes over the plan of this battle,
we shall see that the King brought up his army in
such a manner, that his line formed at that time an
angle with the front of the enemy. This is, there-
fore, an instance of the oblique position which, ac-
cording to the judgment of all reflecting officers,
and writers on military science, is the key to victory.
Until the period when Frederick appeared upon the
military theatre of the world, the ideas upon it were
dark, and hardly intelligible; no General, at least
in modern times, had a clear perception of the ad-
vantages resulting from it, nor the boldness to strike
off from the old and hacknied road; it is at present the
favourite system, and seems, indeed, to have su-
perseded all others. Whether every General could
make the same use of it that the King did, is what
will not here be decided; perhaps it might happen
with it as with the scymeter of Scanderberg—there is
the weapon, but where is the arm to wield it?
Every one now knows the excellence of the oblique
attack, but who has the genius of the King of Prussia
to risk it?
The nature of this attack shews, that it must ne-
cessarily fall on one or the other wing of the enemy;
the grand object is to force the part attacked, at the
same time turning the flank and rear. It is, there-
fore, necessary to make that part of the army which
attacks, so strong, as to be certain of bearing down
the enemy; but, as the latter will of course en-
deavour equally to support that part of his line which
is menaced, and has the power to do so, it is neces-
sary to adopt such measures as shall keep him, as long
as possible, ignorant of what the object of the at-
tacker is, so that it may be too late, when discovered,
for him to remedy it; therefore, the attack must immediately follow the discovery, and it must be made with the greatest spirit, and supported accordingly, the enemy must be allowed no time to recollect, nor to make new arrangements, and the measures must be conducted with such promptitude, that the part attacked may be overthrown immediately, and without his having power to rally it.

BATTLE OF JEMAPPES; FOUGHT ON THE 6TH OF NOVEMBER, 1792, BETWEEN THE AUSTRIAN AND FRENCH ARMIES.

[Illustrated by an Engraving.]

On the 5th, the French General Dumourier reconnoitred the position of the enemy on the heights of Jemappes, and attacked, with his infantry, the village of Carignon, whilst he kept up a brisk cannonade on their left. The same day Colonel Fregville tried to make an impression on their left, and several petty skirmishes took place between the French infantry and cavalry, and those of the Austrians, in which the former had not always the superiority. General D'Harville, in the mean time, was able to advance to the heights of Framery, with only one half of his army, consisting of about 6,000 men. The French army then encamped opposite to Jemappes, having its left wing extended to Hoorne, and the right to Framery.

General Dumourier being thus determined to attack the heights of Jemappes next morning, the 6th, in a decisive manner, that he might not leave time to the army of General Clerfayt to effect a junction; he caused the village of Carignon to be abandoned on the evening of the 5th. He found, indeed, that he could not maintain his ground against the forces which were at Jemappes, as his army was commanded by that village.

On the morning of the 6th, he caused twelve 16-pounders, twelve 12-pounders, and twelve field-
FRENCH and AUSTRIAN ARMIES.

N°1 74 Redoubts upon the Heights of Jemappes. 5 Intrenchments.
6 From attacking the eminences above Mons. 10 Battery upon the heights.
13 Austrian detachment.
pieces, to be advanced, and disposed them along the front of the line. General D'Harville, posted on the heights of Ciphe, flanked the enemy's left while he attacked the right; after retaking the village of Carignon, by means of the Belgians, supported by nine battalions, under the command of Marshals Ferrand, Roziere, and Bloisfere.

The body destined for the center attack, consisting of eighteen battalions, was commanded by Lieutenant-general Egalité (now Duke of Orleans), and Marshals Stetenboffe, Desfoerts, and Drouet. The right wing, consisting of the van-guard, was under the command of Lieutenant-general Bournonville and Marshal Dampierre. The division of General D'Harville being too distant from the enemy's entrenchments, was only able to assist us in the attack with its cannon.

Having thus made the necessary arrangements for a general attack upon the Austrians (whose whole effective force, according to the best accounts, did not exceed 16,000 infantry, and 3,000 cavalry), the French General ordered his artillery, consisting of twelve 16-pounders, twelve 12-pounders, and twelve field pieces, to be advanced and disposed along the front of the line. The position of the Austrians, to use his own expression, was formidable beyond description, their right extending to the village of Jemappes, formed a square with their front and left, which reached to the causeway of Valenciennes.

The Austrians were posted in all this length, on a woody mountain, where they had erected, in an amphitheatre, three tiers of redoubts, furnished with twenty pieces of heavy ordnance, at least as many field-pieces, and three field-pieces for each battalion, all of which amounted to near 100 pieces of cannon. The French artillery, was in every respect as formidable, but the elevation of the enemy's batteries gave them a great advantage, so that the French General thought it prudent not to persist in endeavouring to terminate the affair by his artillery.
BATTLE OF JEMAPPES.

We will now submit to the calm reflection of every military man, the actual position and state of the French army, particularly of the center, which was composed of raw troops. Exposed as they were to an incessant fire from these formidable redoubts, on which they could not make the least impression, they must have been entirely cut to pieces, had not the ill-judged measure of quitting their entrenchments been adopted by the Austrians. The policy of Dumourier was manifestly to draw the enemy out of his impenetrable hold. Troops, in whose courage the firmest reliance could be placed, had been previously disposed of in the wings of the French army, and were commanded by the most experienced officers. These, he was confident, would not fail to outflank the Austrians, provided he could confine their principal attack to the center, and by advancing with seeming rashness, to entice them from their heights. How well he succeeded, and by what extraordinary exertions he forced back to the charge the yielding battalions of raw men, are circumstances too well known to require any minute detail; but, as the particulars of the last decisive operation may be grateful to the inquisitive, we give the following extract from the General's own report to the French Convention:

"Exactly at noon, the whole infantry instantaneously formed in columns, and advanced with the utmost rapidity, and in the highest spirits, towards the entrenchments of the enemy. There was not one column whose head was behind another.

"The lower tier of redoubts was instantly forced, and very successfully carried; but the obstacles soon multiplying, our center became endangered, and I was some time before I perceived the enemy's cavalry preparing to enter the plain, with a manifest intention of flanking our columns. I immediately dispatched to that quarter, Lieutenant-general Egalité—the present Duke of Orleans—who, by his cool valour, succeeded in instantly rallying the co-
BATTLE OF JEMAPPES.

In the attack of the redoubts, which had been forced and carried, some degree of disorder had manifested itself in his cavalry, whilst the General himself was busied at the head of his infantry. This cavalry I instantly rallied, so much so, that it made a lively charge on the enemy's cavalry, which by this time had reached our right flank. At this critical juncture, a detached body of the enemy's cavalry attempted to force the first battalion of Paris, which received them with the utmost bravery, and killed several men with a single discharge of musketry. Whilst we were thus engaged to the right, our left had carried the village of Jemappes, and our center had obtained entire possession of the second tier of redoubts. It became necessary to come once more to an action on the heights; this, however, was less lively, and of a shorter duration, the Austrians being altogether panic-struck at the obstinate and constantly increasing valor of our troops. At two o'clock they retired in the utmost disorder, our troops now occupying all the enemy's territory, covered with the dead bodies of both parties.

It must be manifest to every thinking mind, that had the Austrians remained upon the defensive, and not quitted the heights to engage the center of the French army, in the plain under Jemappes, the latter must inevitably have been defeated. Dumourier was so conscious of their superiority in this respect, that he left no measure untired to draw them down. His prodigious loss of men, which, notwithstanding his first political account, of 300 only, amounted
nearly to 14,000, sufficiently proves the original advantages of the Austrians, nor would he have continued the attack had he not been persuaded that, by an able manœuvre in the center, the enemy might be outflanked.

Dumourier had two horses shot under him. On his falling the first time in front of the line, there was a general exclamation, *Notre General est mort!* Our General is dead! but he instantly mounted another horse, and cried out—*Non, me viola mes enfants! n'ayez pas peur, nous gagnerons!* No! here I am my lads! don't be afraid, we shall gain the day! We have been confidently informed, that the several attacks which were made previous to the last general action at noon, were only feints to see how the raw troops would behave, and to feel the dispositions of the Austrians. Dumourier was thoroughly convinced, that if they remained in their intrenchments, no impression could be made. The only alternative left, therefore, was to entice them down, by opposing such troops as he knew would advance with enthusiasm at first, but, from want of experience, would as rapidly fall back when they began to be galled by the discharge of heavy ordnance. Two objects were consequently to be attempted, and, if either failed, the victory must be lost. The first object was to draw the enemy from the heights—this was easily effected. The second object was to keep the enemy engaged in the plain, whilst his right and left wings should advance against the flanks of the batteries, and eventually turn the lunette. This could only be accomplished by forcing his own troops back, as fast as they gave way. Several pieces of ordnance were consequently brought up, and planted in the rear of the raw battalions, and detached bodies of tried veterans stood ready to charge their own people, whenever the Austrians forced them to retreat. This measure, though fulfilled at the expense of the lives of thousands, finally secured the victory. Upwards of 14,000 French were killed on
PLAN
explanatory of the Battle
of
FREYBERG.
this memorable occasion, and about 5,000 Austrians. The loss of the former was, however, very ingeniously concealed, through the skill and activity of Dumourier, who had the bodies conveyed away during the night, and thrown into the neighbouring coal pits, so that, in the morning of the 7th, the loss of the Austrians appeared considerably greater than that of the French. How far the French General was justified in making so immense a sacrifice of the troops which composed the center of his army, does not belong to us to determine. The horrors of war are certainly great enough, without adding to their melancholy consequences, by a wanton waste of blood. At the same time it must be acknowledged, that the battle of Jemappes would not have been the first proof of how much can be done by population, and an adroit application of its numbers, had not Dumourier resorted to this dreadful alternative.

ACCOUNT OF THE BATTLE OF FREYBERG, FOUGHT ON THE 29TH OCTOBER, 1762, BY THE PRUSSIAN ARMY, Commanded by Prince Henry of Prussia, and the Austrian Army and troops of the Empire, under the orders of the Prince of Stolberg.

[Illustrated by an Engraving.]

In order to facilitate the better understanding of the following account, I shall here relate what the late celebrated Captain Tielke told me of this action, on the field of battle. This able officer possessed the most correct and complete information on this subject, because he resided in Freyberg, had drawn a plan of the action, and frequently visited and examined the field of battle, with officers who had been in the engagement, and given him the minutest account of the particulars relative to it.
The right wing of the Prince of Stolberg's army, was posted in the rear of Little-Waltersdorf (See the annexed Plan,) covered by some redoubts, so that this village was in front of that wing. The center extended towards the Gallows, as far as Freybergsdorf, to defend the forest. Fourteen companies of grenadiers occupied the heights near the Three Crosses and the pond, near the Spittle-forest, a battery was constructed, mounted with heavy ordnance, to hinder the enemy's debouchéeing from the forest, which, on account of the ponds and morasses, could not be done but on the dams that separate the ponds, apparently impossible. In the Spittle-forest, two batteries were erected towards Little-Schirma, and one towards Waltersdorf, on the edge of the wood, having an abattis in their front; another abattis, 300 paces in breadth, extended through the forest, from Little-Waltersdorf, as far as the ponds.

Near Brand, in front of Erbisdorf, General Maquiere was posted on the heights with a corps of 6,000 men, to cover the left flank.

This position was not ill chosen. If the enemy attacked the right wing, he was obliged to pass in front of the army, the village of Waltersdorf, and, at the same time, very low grounds, which was attended with considerable difficulties. Moreover, on the heights, batteries had been constructed, surrounded with breast-works; the enemy's artillery was, therefore, not likely to make on that side any strong impression.

If the enemy marched further to the right to turn Waltersdorf, he had to pass a ravine with very steep banks, which could not be climbed but by a few men. On account of the abattis, no attack could be made by the right of Spittle-forest, and the left could not be passed but in narrow dams, between morasses and ponds, which were commanded by batteries of heavy ordnance; against the corps of General Maquiere, the enemy could undoubtedly attempt an attack on the left, but was not able to
cut it off, since Micheln, as well as the Spittle-forest, were occupied on that side; and, if the enemy actually succeeded in dislodging this corps, which was far from being impossible, in this case it was able to take up a new advantageous position, in C C, (Plan) where, supported by the whole army, it might have withstood the most vigorous attack, as the wings were covered by the morass, near the Spittle-forest, or the steep height D, (Plan) and low grounds were in front of the position.

Frederick the Great has frequently observed, that no army should take up a position in rear of a forest, since it is thereby prevented from observing the movements of the enemy, and from disconcerting their plans. The truth of this remark is strongly illustrated by this battle, as well as by that of Tor-gau, where the Austrians occupied such a position, and were defeated; yet, in both actions, faults were also committed by the Imperial troops, which might have easily been avoided. In both engagements, they omitted cutting through a narrow dam, which six men might have done in an hour's time, and this neglect, skilfully improved by the Prussians, turned, both times, the fortune of the day against the Austrians.

The Imperial army, including the troops of the empire, was composed of 49 battalions, and 68 squadrons, and the Prussian of 24 battalions, and 60 squadrons. The Prussians attacked in three distinct columns, and a fourth detachment kept at bay General Maquiere's corps, posted near Brand.

The first Prussian column, commanded by General Seydlitz, turned the Spittle-forest by Micheln, and was ordered to break through on that side, cost what it might, or to fall on the left flank of the enemy. The second column, under the orders of General Young-Stutterheim, was directed to attack the Spittle-forest; and the third, under the command of General Old-Stutterheim, was to oppose the enemy
above Little Waltungsdorf, and keep him at bay in that quarter.

The first column debouched by the Spittle-forest, on the side of Micheln, while General Seydlitz, in person, scoured the forest with the infantry, and endeavoured to find a passage towards the ponds; at last, he discovered a dam, about 1000 paces distant from the enemy's battery, constructed on the side of the Three Crosses. He immediately ordered the cavalry to pass it en carriè, to take the battery in rear, and carry it. Prince Henry, who happened to be on the height between the Spittle-forest and Micheln, ordered immediately more cavalry to débouche, and to fall on the flank of the fourteen companies of the enemy's grenadiers; before they were able to cover their left wing. By this attack, the whole column gained the left flank of the enemy, and cut off General Maquiere's corps from the army, who had no resource left, but to retreat by Bertelsdorff. The grenadiers endeavoured to form a new flank towards Freybergsdorf, but the Prussians did not allow them time for so doing, and that moment victory decided in favour of the latter. If the dam had been impassable, the Austrians would have found sufficient time vigorously to oppose the attack on that point; the Austrian General would have been able to sustain the grenadiers, and then an engagement would have ensued, the issue of which, from the nature of the ground being highly unfavourable to the Prussians, would at least have been doubtful. But the forest in front of the Austrian army prevented the Prince of Stolberg from discovering the Prussian attack on that point, or was at least the cause why he did not observe that the enemy's main force was collected there. Every thing depended on the column of General Seydlitz; if this column succeeded in turning the enemy's position, the battle was decided. This instance shews how little depends in such cases on the strength of the armies. The able dispositions of the Commander
in Chief, the valour of the troops, and the skill and dexterity displayed by the Generals, in improving every favourable circumstance which offers, amply supply numbers. Thus the victory of Freyberg is chiefly to be ascribed,—1st, to the skilful dispositions made by Prince Henry; 2dly, to the dexterous manner in which General Seydlitz took advantage of the circumstance, that the dam in the Spittle-forest was neither cut through, nor occupied by the Austrians; and, 3dly, to the gallantry displayed by the column commanded by that General. The strength of the armies was of no moment; it has already been observed, that the Austrians, including the troops of the Empire, were forty-nine battalions strong, and the Prussians only twenty-four.

We learn, moreover, from this battle, that a small neglect can, under certain circumstances, prove extremely fatal to an army, and that artillery, unprotected by infantry, is lost, whenever cavalry attacks it in an able manner.

A memorable incident happened during this action: When the Prince of Stolberg found that his left wing was outflanked by the Prussians, he ordered the village of Freybergsdorf to be defended to the utmost extremity in order to check their further progress. Some battalions of Hungarian foot threw themselves into a large farm-yard, surrounded with a high wall, and were passed by the Prussians, since they could not fire on account of the high wall. The Prussians carried the village, drove the Austrians across the Mulda, and the above battalions of Hungarian infantry, finding themselves hemmed in on all sides, were compelled to surrender without firing a shot.

Another Account, by a Prussian Officer, who was in the Action.

His Royal Highness (Prince Henry of Prussia) ordered bridges to be thrown across the Mulda, between Rosswein and Nossen, so that this river could be crossed in eight columns. This was not done
from any serious intention on his part to pass the river, but to induce the enemy to suppose that such was his view, and to betray him into a state of perfect security. The army of the Empire, under the orders of the Prince of Stolberg, was posted by Freyberg, and joined by a corps of Imperial troops. This army began to entrench itself on the heights of Freyberg; and to make abatis in the Spittle-forest. Advice was also obtained, that General Maquiere had received orders to join that army with a part of General Haddick's corps. The height near Mohorn,* by the Tharand-forest, was occupied by four Austrian regiments of foot and two of horse. The reinforcement we expected from the King's army had not yet advanced further than Grossenhayn, on the other side of the Elbe. But as, according to advice received from various quarters, the enemy's army was likely to be reinforced by fourteen battalions, and six regiments of horse, from Field-marshal Daun's army, before our reinforcement could reach us, his Royal Highness resolved to advance again, and to attack the enemy by Freyberg, before he was joined by the above troops, and had completed his entrenchments. For this purpose the Prince, in the afternoon of the 28th of October, gave out the following orders and specific dispositions, to be observed by the several Generals:

Disposition for Lieutenant-general Seydlitz.

Lieutenant-general Seydlitz will march at eight o'clock with the brigades of Düringshofen and Young-Stutterheim, followed by the regiments, Prince Frederick, Kroekow, and Schlaberndorf. All the heavy ordnance may proceed before to Gosberg; by the defile, but must leave the road open, so that the column may be able to march through Gosberg; it is left entirely to the discretion of Lieutenant-general Seydlitz, whether the heavy artillery is to

* This name is probably misprinted.
precede, or follow the infantry through Gosberg. From thence the column will march to the height of Braunsdorf, leaving Braunsdorf on the right, where it halts, and finds the rear of the column, commanded by Major-general Kleist. The three regiments of horse are to take post on the left of the infantry; the troops are all to remain in column, until the heavy artillery has passed by, which being done, Major-general Kleist will put himself in motion, pursuant to the disposition given him by the Commander in Chief. Four pieces of heavy cannon are to precede the brigade of Düringshofen, and four others, the brigade of Young-Stutterheim; howitzers may also be made use of.

N. B. The horses for this ordnance must be picked out among the best draught-horses, and they must be followed by others to relieve them.

Lieutenant-General Seydlitz will order the brigade of Düringshofen to follow the grenadiers; after the above brigade, Brigadier Manstein is to march with the regiments Young-Platen and Krockow: These two brigades are to sustain Major-general Kleist and the grenadiers.

After the grenadiers have carried the height of Micheln, and when the brigade of Düringshofen reaches Micheln, the grenadiers are to push further on, and Brigadier Düringshofen will leave on the height of Micheln a reserve of one battalion, and follow the grenadiers with the rest of his troops. If the enemy should have neither occupied the height of Micheln, nor the ground near the Gallows, but taken post on the heights of Falkenberg and Hibersdorf, in this case the brigades will march to Bertelsdorf, according to the dispositions drawn up for Major-general Kleist; Lieutenant-general Seydlitz is to order General Belling to march in the night with his hussars, and the regiments of Loßow and Le Noble at the head of the column as far as the height of Braunsdorf. As soon as Major-general Kleist and Brigadier Düringshofen begin to move.
forwards; General Belling will take post in the Struth-forest, to guard the skirts of the woods, and to draw up his hussars, ready to give support where it may be wanted. He will also endeavour to keep open the communications between the different corps, and to make demonstrations tending to mislead the enemy into a supposition of its being our design to attack him by Waltersdorf.

Major-general Young-Stutterheim (Stutterheim jun.) will detach Captain Pfuhl with 300 volunteers, and as soon as Generals Kleist and Düringshofen have marched off, he is likewise to march with his brigade to Little-Schirma, and having reached that village, he is to form in such a manner that his right wing be posted in front of the extremity of Little-Schirma, and his left extend to the road from Wegefurth; his heavy ordnance is to be so posted, that it can play upon the Spittle-forest. As soon as the firing begins by Michelin, Captain Pfuhl is to attack the Spittle-forest, but not to march through it, until the grenadiers and the brigade of Düringshofen have reached the Three Crosses, at which moment General Young-Stutterheim is to penetrate through the Spittle-forest with his whole brigade, and to form near the Gallows, fronting Freyberg. Major-General Bandemer is to draw up the regiments Prince Frederick and Krockow, with his right wing towards Little-Schirma, and their left in front of the Struth-forest, beyond the range of cannon: in proportion as Generals Old and Young-Stutterheim advance against Freyberg, he is to follow to sustain them. If Lieutenant-general Seydlitz should want more cavalry on the right wing, the two regiments must march by the road taken by General Kleist, and the brigade of Düringshofen. The artillery of the two brigades is to remain on the height near Braunsdorf, until General Old-Stutterheim (Stutterheim sen.), pursuant to the disposition he is to act upon, shall order it to advance. If Lieutenant-general Seydlitz should not be present, he will leave orders for General Bel-
ling, that he is to follow the orders of General Old-Stutterheim. All the baggage-horses are to remain behind in the entrenchments of Augustaberg (Augusta-mountain), where the battalion of Grabow, and the hussars of Vermeley and Natzmer, are posted. All the bread-waggons are to remain behind the Katzenhausern (Cat-houses). Pioneers are to march at the head of the columns, and as soon as the columns are in motion, it must be prohibited, on pain of the gantelope, to strike fire.

Disposition for the Generals Forcade, Old-Stutterheim, and Colonel Taube.

General Old-Stutterheim will march at eight o'clock, with his five battalions and four pieces of heavy cannon drawn by picked horses. General Meyer is to follow him with the regiment of Schmettau; and afterwards Lieutenant-general Forcade and Colonel Taube, with one battalion Old-Sydow, two Le Grand, two Roebel, and one Hilsberg: the rear is to be brought up by the heavy artillery of the brigades.

When General Old-Stutterheim arrives behind Great-Voigtsberg, he is to halt, and the battalions must close up, until the defile is completely cleared. This being done, Majors Kosegg, Marshal, Jenay, and Courbiere, are to advance to the heights of Great-Schirma, and Major-general Old-Stutterheim is to march with his five battalions, and the regiment of Schmettau, to the right, towards Hennersdorf, and to form in this manner, that his right wing is appuyed to Hennersdorf, and the left to the extremity of Great-Schirma. The regiment of Schmettau is to form the second line: the right wing is to be aligned by the height of Braunsdorf. Through Hennersdorf, General Old-Stutterheim is immediately to open a road, by which he can march with divisions and cannon to establish a communication with Lieutenant-general Seydlitz. Lieutenant-general Forcade is to march to the height of Great Schir-
ma, and form on the height formerly occupied by
Lieutenant-general Old-Stutterheim, while Majors
Kosegg, Marshal, and Jenay, take up the same pos-
sition formerly occupied by Major-general Kleist. At
break of day, when General Kleist and Brigadier
Düringshosen are in full march, and General Bell-
ing commences to render himself master of the
Struth-forest, Major-general Old-Stutterheim is to
march with one or two battalions to the right of the
Struth-forest, to order all the artillery left behind by
the brigades of Düringshosen and Young-Stut-
terheim, to be brought up, and to be pointed against
the height of Little-Waltersdorf. If General
Young-Stutterheim should be obliged to detach
some battalions of foot from his brigade to the right
wing, they are to be replaced by General Old-Stut-
terheim; and he is to order in return one or two
of his battalions which are posted on this side of
Hennersdorf, to join him: if the enemy should aban-
don the heights of Waltersdorf, General Old-Stut-
terheim is to march thither to occupy them with his
whole brigade, to order heavy cannon to be brought
up, and to send advice to the regiment of cuiras-
siers, which is to pass by divisions, and to General
Belling; the latter is to take possession of the town
with his battalion, carefully preventing all disorder
and pillage. General Forcade is to order the heavy
artillery to be brought up, and mounted on both
heights; forty-one pieces of cannon are to be left as
a reserve. If the enemy should shew himself by
Hohentanne, in this case, Major Heilsberg is to
march to the height of Neudorfel, to dispute the
passage with the enemy: the left wing is to remain
immovable, but to make continual demonstrations
of attack.

If the enemy should still have some artillery at the
end of Great-Schirma, as he had on the 21st, one
battalion is to advance, with two or three pieces of
cannon, to the spot formerly occupied by the 1st
battalion of Bevern, to cannonade him. Should the-
enemy, in his flight, cross the Mulda, so that General Foreade is not opposed by any of his troops, Majors Marshal and Kosegg must follow him by Rohte-furth, and see whether they can harass and molest the enemy. The baggage horses are to remain in the entrenchment by Augustaberg, and with them the first battalion of Grabow, and Lieutenants Vermely and Natzmer with their hussars. The bread-waggons are to be drawn up behind the Cat-houses. Pioneers must be with the head of the column; and as soon as the army is in motion, the striking of fire is to be prohibited, on pain of the gantlope. Two heavy cannon are to be left on the Schlossberg (Castle-mount), and to be guarded by the battalion of Grabow.

Disposition for Major-general Kleist.

Major-general Kleist will begin his march at eight o'clock, leaving behind Majors Kosegg, Courbiere, and Jenay, with 400 hussars, under the orders of the first. With this corps, Major Kosegg is to remain behind Great-Voigtsberg, until further orders.

N. B. The battalion Le Noble is to join Major-general Belling; the regiment of Plettenberg is to march with Major-general Kleist, who is to have his chasseurs, the Croats, and the battalions Kerr and Luderitz, and to be joined by General Quest, with the four grenadier battalions, Old and Young-Billerbeck, Natalis, and Waldeck, and four heavy cannon. This corps is to march either by Seiffendorf or Hennersdorf, to the heights of Braunsdorf, where it is to close up as much as possible, and to halt until the column of Lieutenant-general Seydlitz comes up: it will then continue its march (about break of day), pass through the lower end of Little-Schirma along the height, leaving Upper-Schoene on the right, and take post on the height of Micheln. As soon as General Kleist has occupied this height, the cannon of the grenadiers must be drawn up on the eminence between Linde and the Spittle-forest:
the grenadiers are to form, the free battalions will
march into the Spittle-forest, clear the road which
leads through the forest from Linde to the Galgen-
berg (Gallows-mound), and endeavour to take the
height in the rear. General Kleist is to move by
Erbsdorf to the Kuhberg (Cow-mound), in order to
turn the height. On the grenadiers reaching the
height, they are to form, fronting the town, and to
wait the arrival of Brigadier Düringshofen. As
soon as he comes up, the grenadiers are to march
straight to the Three Crosses, with their left constant-
ly appuyed to the Spittle-forest, which is to be cot-
toyed by the free battalions. General Kleist will
protect them on the right with his cavalry, and, ac-
cording to circumstances, attack whatever he finds
in his way. Brigadier Düringshofen will, accord-
ing to his disposition, as well as Brigadier Manstein,
with the regiment of Young-Platen, constantly fol-
low, to support the grenadiers and General Kleist.
If the enemy should have abandoned both Micheln
and the Galgenberg, previous to General Kleist's
coming up, General Kleist is to move to Bertelsdorf,
to cut off the enemy. The grenadiers are to advance
to the right of Hilger's-farm; and, on Brigadier
Düringshofen coming up, they are to occupy the
heights on this side of Hilbersdorf, where the re-
doubt of the first battalion of Old-Stutterheim was
erected. By this time the enemy will probably
be engaged in his flight, of which General Kleist will
take every advantage that may offer. If the enemy
should abandon both the heights near the Gallows
and Micheln, in this case, the free battalions are
immediately to march to the bridge of Weissenborn,
and occupy it.

General Kleist is hereby informed, that as soon as
the height of Micheln is carried, and the grenadiers
have advanced through the Three Crosses, General
Young-Stutterheim is to penetrate with four batta-
lions by Little-Schirma, through the Spittle-forest,
on the side of the Gallows. Two regiments of cui-
rassiers will do the same, after the enemy has abandoned the height on the other side of Little-Waltersdorf. General Old-Stutterheim will occupy this height with artillery, and Lieutenant-general Forcade, and Colonel Taube, will, with five battalions, take the position before occupied by General Old-Stutterheim; Majors Kosegg, Marshal, Jenay, and Coubiere, will take the position of Major-general Kleist, near Great-Schirma. On that side, the enemy is constantly to be harassed. General Belling will occupy Struth-forest, with the battalions of Lossow, Le Noble, and Schack, and his own hussars; and, in proportion as the attack of the right wing succeeds, the left will advance.

If incidents should happen, which it is impossible to foresee, every one must act as well as he can.

- Brigadier Manstein is to follow Plettenberg, with Young-Platen, but to remain by Braunsdorf, to take post in front of the regiment of Krockow, and then to follow Brigadier Düringshofen.

All the baggage-horses are to remain behind the entrenchment of Augustaberg, where the battalion of Grabow, and Lieutenants Vermely and Natzmer, with their hussars, are stationed. The bread-wagons are to be drawn up behind the Cat-houses. Pioneers must be with the head of the column; and, as soon as the army is in motion, all striking of fire is to be prohibited, on pain of the gantlope.

Pursuant to the preceding disposition, the whole army began to move at eight o'clock in the evening, to march to its rendezvous. Major-general Kleist, who had been stationed by Great-Schirma, marched from thence, and took post on the height of Braunsdorf. General Belling, who had occupied a position by Gossberg, advanced likewise, and posted himself, with the battalion Le Noble, in Long-Hennersdorf, that he might be near at hand by the Struth-forest, where he was to attack. Lieutenant-general Seydlitz marched with the right wing, which had been posted by Marbach, and was composed of one grenadier battalion of Posech, two battalions of
Linden, two battalions Golz, two battalions Old, and two battalions Young-Stutterheim, the dragoons of Krockow, and the regiment Prince Frederick, and the heavy cannon, to the right of the Celler-forest, through the defile of Aschbach, by Reichenbach and Seiffersdorf, and took post on the height between Long-Hennersdorf and Braunsdorf, so that the head of his column joined the rear of General Kleist's column. Major-general Old-Stutterheim, according to the disposition, marched off by the right with the left wing from Augustaberg or Augusta-mound, proceeded by Siebeleben, Little-Gruna, and Great-Voigtsberg, and posted himself in the low ground between Great-Schirma and Long-Hennersdorf. According to the disposition, he left the battalion of Grabow, with a detachment of hussars, under the orders of Lieutenants Natzmer and Vermely, in the entrenchments of Augustaberg, with the baggage-horses.

Two heavy cannon were likewise left behind on the height, called the Castle-mount, under a guard of the regiment of Grabow. The regiment of Bevern formed the head of the column, preceded by four heavy cannon. The other troops followed in the following order, viz. the regiment of Mantuefel and the battalion of Behr, General Meyer with the regiment of Schmettau, Lieutenant-general Forcade with his brigade, consisting of one battalion Old-Sydow, two Le Grand, two Röhel, one Heilsberg, the rest of the artillery of the brigades of the left wing, under the command of Major Hoefer, and Major Kosegg, with 400 horses. Majors Marshall, Jenay, and Caurbiere, took post on the height behind Great-Schirma, that they might be at hand to harass the right flank of the enemy, in case he should be routed.

His Royal Highness, to facilitate the success of his plan, had ordered General Hülsen to make demonstrations of attack on the right banks of the Mulda, in order to draw the attention of the enemy that way.
At break of day, his Royal Highness ordered the columns to begin their march.

General Kleist, who was at the head of the columns of the right wing, where his Royal Highness also was, marched in the following order: First, the avant-guard of hussars, followed by Kleist's chasseurs, one battalion Croats, the free battalions Herr and Lüderitz, the light horse of the Green Legion; then followed General Gueist, with four battalions grenadiers, Old and Young-Billerbeck, Natalis, and Woldeck, four heavy cannon, Brigadier Düringshausen with the regiments of Golz and Linden and four heavy cannon, and Brigadier Manstein with the dragoons of Young-Platen and Krockow. This column marched through the lower end of Wegfurth, pointing to the height of Micheln, and leaving Upper-Schöna on the right. As soon as this column began to move, General Belling marched, pursuant to the disposition, with his regiment of hussars, the free battalions Le Noble and Schack, and the grenadier battalion of Lossow, to the Struth-forest, to clear it from the enemy's light troops.

General Young-Stutterheim, who followed the first column of the right wing with his brigade, composed of the two regiments of Old and Young-Stutterheim, and four heavy cannon, moved afterwards to the left, marched towards the Spittle-forest, and posted himself with these four battalions in order of battle, between Little-Schirma and the Struth-forest. Captain Pfuhl, with his 300 volunteers, took post on the right wing of this brigade. Major-general Bandemer took post in the rear of this brigade, with the two cuirassier regiments. Prince Frederick and Schlabendorf were drawn up in two lines. In proportion as General Belling cleared the Struth-forest, Major-general Old-Stutterheim advanced with his column on the heights between Great-Schirma and Long-Henners lorft, to facilitate General Belling's attack. By the Nun-wood, the enemy had posted a picket, which, however, fell back on the advance of
General Old-Stutterheim. He accordingly pushed on with his column, and took post on the height on this side of Little-Waltersdorf, formed a battery of the heavy artillery commanded by Major Hoefer; ordered the heavy cannon left behind at Braunsdorf by General Seydlitz, under the orders of Major Grunenthal, likewise to be brought up, and cannonaded the enemy, who was posted and entrenched on the height of Little-Waltersdorf, having in front the defile of that village. In the meantime his Royal Highness had advanced as far as Upper-Schoena, and made Major-general Kleist repel the Palatine hussars and some hundred pandours, who shewed themselves on the left hand by the Spittle-forest, between Upper-Schoena and Micheln.

The combined army of the Austrians, and the troops of the Empire, occupied the following position: In front of the right wing was Little-Waltersdorf, behind which village their right wing was drawn up in line on the height, and covered by some redoubts. It was against this wing General Old-Stutterheim directed his attack; the Spittle-forest, in which new abattis had been made, whose edges were lined with redoubts, and which was occupied in force, was in front of their center. General Young-Stutterheim's brigade acted against this point. The left wing of the enemy extended along the height of Brand; the height between Brand and Erbisdorf was occupied by about 6,000 men. Such was the position of the enemy's army.

His Royal Highness, after having repulsed the Palatine hussars, and the pandours, pushed, therefore, with the first column, on the heights between the Spittle-forest, and the villages of Linde and Micheln constantly forwards. One battalion of the enemy's foot, which was posted on the edge of the Spittle-forest, between Linde and Micheln, was attacked by our advanced-guard, and nearly the whole of it taken prisoners. Five battalions of the enemy's foot were routed, one after another, in this
forest; the Prince left four battalions and eight squadrons, under the orders of Brigadiers Dürringshofen and Manstein, on the height between the village of Micheln, and the Spittle-forest, to observe the enemy's corps, which occupied the heights between the village of Erbisdorf and Brand. In the meantime, the infantry was constantly advancing, and kept up a brisk cannonade. The free battalion cotted the Spittle-forest, to secure the left flank of the column.

As the enemy perceived that we were pushing on with the utmost vigour, he changed his position, moving to the right, towards the Three Crosses, to prevent his right wing from being cut off, and posted himself in this manner, that his left wing occupied the heights near the Three Crosses, and appuyed to the Spittle-forest, behind the pond by the brick-kiln.

The Prince was, therefore, obliged to pass with his column the defile near the Red-Farm, and the brick-kiln, in sight of the enemy, and under a cross-fire from the Three Crosses, and the height behind Brand. To prevent the enemy's corps, which occupied the height behind Brand, from harassing his right flank, the Prince had ordered Brigadier Dürringshofen to remain there with his brigade, composed of the regiments of Linden and Golz, and of the dragoons of Kleist, to keep the enemy's corps at bay. But he himself advanced, and ordered the enemy's corps, which was posted near the Three Crosses, and chiefly consisted of grenadiers, to be attacked by the rest of his column, especially by the grenadiers, under the orders of General Seydlitz.

While this was going on, General Young-Stutterheim began also his attack by Little-Schirma. Captain Pfuhl, of Young-Stutterheim, at the head of 300 volunteers, attacked the battery erected by the Spittle-forest, close by Little-Schirma, while, at the same time, General Young-Stutterheim ordered one battalion of his brigade to attack the redoubt constructed at the edge of the Spittle-forest, towards

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Little-Waltersdorf. These attacks were vigorously sustained by our artillery. The enemy abandoned, soon after, the redoubts formed on the edge of the forest, and retreated behind the abattis, leaving behind one cannon in one of the redoubts. But here he defended himself with the utmost obstinacy; and as some companies of the enemy’s grenadiers fell on the right flank and rear of our battalion, and especially of the volunteers of Captain Pfuhl, the greatest number of whom had already passed the abattis, they were obliged to repass it, to avoid being cut off, or taken prisoners. The enemy thus gaining some ground, pushed forwards, but not further than to the abattis, and Major-general Young-Stutterheim sent another battalion to sustain the former.

The fire was very brisk, especially in the forest, and the fortune of the day remained as yet undecided. But Major-general Old-Stutterheim, who, during all this time, had constantly cannonaded the enemy from the height on this side of Little-Waltersdorf, finding that the attack in the Spittle-forest was strongly contested, he detached the first battalion of Bevern to the right, that it might be at hand to act in the Spittle-forest, replaced it by the first battalion of Manteufel, ordered some pieces of cannon to be brought nearer to the defile, to do greater execution among the enemy, and continued a severe cannonade, which greatly annoyed the enemy’s corps, chiefly composed of horse, without driving it from the height, until at last General Old-Stutterheim, having received intelligence that our right wing had forced the enemy’s position by Micheln, being sensible that his brother’s brigade in the Spittle-forest met with a very obstinate resistance, determined to pass the defile, and relieve his brother by dislodging the enemy from the heights of Little-Waltersdorf. He, therefore, sent his adjutant to Generals Meyer and Belling (the latter of whom, after having scourèd the Spittle-forest, had already
taken post on the left wing of the regiment of Schmettau, with his hussars, and Beckhoff's detachment of cuirassiers), apprised them of his intention, and desired that they might join in the attack; he also sent a non-commissioned officer of the regiment of Schmettau, to General Forcade, to inform him of his design. He ordered the two free battalions of Lo Noble and Schack, to clear the village of Little-Waltersdorf from the enemy's troops, and to make a demonstration, as if they intended to turn the Spittle-forest, and to fall on the flank of the enemy, who so vigorously defended himself against General Young-Stutterheim. He advanced with the two regiments of Bevern in front, and passed the defile in the middle of the village, so that the cavalry could pass on the same line. He ordered Majors Grunenthal and Höfer to continue a brisk cannonade while he was passing the defile, to facilitate the attainment of his end. The first battalion of Mantenfel was left behind to guard the heavy cannon, and the second battalion of Mantenfel, as well as the battalion of Behr, were ordered to follow at some distance. As soon as General Old-Stutterheim had passed the defile and village with the second battalion of Bevern, he ordered it to form with all possible speed, and advance with a firm brisk pace, ordering, at the same time, the cannon of the battalion to be brought up, and to fire upon the enemy, who was about six battalions strong, and entrenched behind the height. The enemy's horse began to fall back, as General Old-Stutterheim was passing the defile, at the same time that our cavalry, commanded by General Meyer, came in sight. The latter immediately attacked the enemy's foot, but was at first repulsed; the second battalion of Bevern coming likewise up, General Old-Stutterheim made it wheel to the left, and attack the enemy jointly with our horse; which proved so decisive, that the enemy, after having fired one volley, threw away their arms, and passed over to us in numbers, as prisoners of war.
It should be observed, that the whole force of the enemy was divided into four corps, one of which was posted and intrenched on the right wing, on the height of Little-Waltersdorf, which was opposed by Major-general Old-Stutterheim; the second corps covered the Spittle-forest, and occupied a position behind the abattis and the redoubts, erected on the edge of the forest: General Young-Stutterheim acted against this corps; the third corps, which had taken post on the height of the Three Crosses, and which chiefly consisted of grenadiers, was opposed by his Royal Highness, and the fourth corps occupied the height between Erbsdorf and Brand; this corps was kept at bay by Brigadier Düringshofen, with the two regiments of Golz and Linden, and a part of the dragoons of Kleist, lest it should interrupt the Prince's attack on the Three Crosses. These four corps of the enemy acted perfectly in concert. As soon as General Seydlitz attacked the enemy's grenadiers by the Three Crosses, he endeavoured to outflank their left wing, and by this manœuvre forced them to give way, so that they retreated by Hilger's-farm, to the right of Freyberg, and through the suburb towards Hilbersdorf; by which diversion the attack of Major-general Young-Stutterheim was much facilitated; the enemy gave way in the Spittle-forest, and retreated by Freybergsdorf. A post, which he had left in the Hospital Church-yard, to cover his retreat, were taken prisoners. Our cavalry, which, under the orders of Major-general Bandemer, had been posted in rear of the brigade of Young-Stutterheim, and which, during the attack of the Spittle-forest, had endeavoured to harass and turn the enemy's right flank between Little-Waltersdorf and the Spittle-forest, pursued the enemy, who was retreating in the utmost confusion, partly through Freyberg, and partly round that town, and brought in numbers of prisoners. The enemy had still on the left a battery, from which he fired on our troops, under Major-ge-
General Old-Stutterheim. This General ordered the above battalion of Bevern to wheel to the left, and attack that battery, which produced the desired effect; the enemy's troops threw away their arms, and surrendered prisoners of war. Our artillery, which constantly acted with the infantry, performed prodigies; this wing of the enemy's army was, therefore, likewise completely defeated, and retreated by Tuttendorf, to the heights of Conradsdorf. General Belling was ordered to send immediately a detachment of one officer and forty horse, to Freyberg, in order to try whether any more prisoners could be picked up in the suburbs and environs, but especially to attend to the preservation of the town, and to prevent it from being plundered.

General Old-Stutterheim, joined by his whole brigade, marched by Lösnitz, to the height of Tuttendorf, where he ordered the enemy to be cannonaded, who was retreating towards Conradsdorf. The Prince's column also advanced. The enemy's corps, which occupied the height between Erbisdorf and Brand, retreated by Bertelsdorf and Weissenborn, but was continually cannonaded and harassed on its retreat, by Brigadier Düringshofen. Our whole army retook the same position it occupied previous to the 16th October, * between Bertelsdorf and Tuttendorf, and our cavalry, which had remained by Great-Schirma, was busy in passing the Redford, and in harassing the enemy on his retreat.

For the successful issue of this battle, we are indebted to the gallantry displayed by the troops, † to the uncommon prudence and skill with which General Kleist led on the advanced, or leading division; to the activity and valour of General Seydlitz,

* When the Prince was forced to break up his entrenched camp. Edtt.
† And to the masterly disposition for the battle. Edtt.
who by turns fought at the head of the cavalry and infantry, * and to the able manner with which Generals Old-Stutterheim and Belling executed the commands of His Royal Highness. In general, it is but doing common justice to the whole army to say, that everyone did his duty with the utmost readiness and alacrity, and endeavoured, to the utmost extent of his abilities, to fulfil the intentions of His Royal Highness. From want of fresh cavalry, it became impossible to pursue the enemy across the Mulda, who continued to retreat by Colnitz Pretzchendorf and Burkersdorf, covering his retreat, or rather his flight, with his horse. His Royal Highness ordered the army to occupy again its former camp. The enemy fell back in the night as far as Frauenstein. His loss exceeded, most certainly, 7000 men. We have taken 28 pieces of cannon, a great number of ammunition wagons, the camp-equipage of 2 regiments, 9 colours and standards, 79 officers, and 4,333 rank and file. Among the prisoners are:

1 Field-marshall Lieutenant
1 Colonel
1 Major
24 Captains
41 Lieutenants, and
11 Ensigns.

Our loss, in killed and wounded, amounts to about 1400 men, which is comparatively small, considering the fire of the enemy, his great superiority, and obstinate resistance. The Prince of Stolberg's army consisted of the following Austrian troops, viz. 7 regiments of foot, 14 companies of grenadiers, 3 regiments of Pandours, 4 regiments of horse, 2 regiments of Saxon cavalry, and of the army of the Empire, composed of 12 regiments of infantry, and 39 squadrons, making, in the whole, 49 battalions

* And to the skilful manner in which General Seydlitz improved the circumstance, that the dam had not been rendered impassable. Edit.
and 68 squadrons. Our army consisted of 24 battalions of infantry, 5 free battalions, and 60 squadrons. Generals Kleist and Belling advanced in the night to Pretzchendorf and Burkersdorf, and were sustained by a detachment of 1000 foot, under the orders of Major Iglofstein, who took post on the heights of Sussenbach. The two Generals, on the 30th, sent in several prisoners.

The two regiments of Old and Young Stutterheim, which suffered much in the attack, the day before the battle, were ordered to form the garrison of Freyberg. His Royal Highness ordered 100 rix-dollars (about 16l. sterling) to be paid to the battalions, for every cannon taken, and 50 rix-dollars for each stand of colours. The grenadier battalions, Old and Young-Billerbeck, Waldeck, Natalis, and Posek, and the two regiments, Old and Young-Stutterheim, received 100 rix-dollars per battalion.

ACCOUNT OF THE THREE GREAT VICTORIES. OBTAINED BY JOHN DUKE OF MARLBOROUGH DURING THE SUCCESSION WAR, WITH MILITARY OBSERVATIONS.*

THE BATTLE OF BLENHEIM.

Between the combined army of France and Bavaria, and the allied army of Imperialists, British, and Dutch.

The Duke of Marlborough and Prince Eugene of Savoy had used every argument to engage the Elector of Bavaria to abandon his connection with Louis XIV. or, at least, to remain neutral, in the war then carrying on, between the Emperor of Germany and his allies, and that sovereign. Their efforts, however, were ineffectual: they even discovered, that the Elector had only amused them, with the forma-

* Vide Thomson's Military Memoirs.
ilities of a negotiation, until he should be informed of the arrival of a French army in Germany, by which he hoped to be enabled to gratify to the utmost the personal rancour he cherished against the House of Austria.

When his artifice was fully known, the allied Generals, with a view of intimidating the Elector, burnt down the whole plain of Bavaria, from the Danube to the walls of his capital, Munich; and instantly marched against the French and Bavarians, now united, and encamped at Hochstet, on the north bank of the Danube.

The position occupied by the combined army of French and Bavarians (for such it was called), was naturally very strong, having the large and deep river Danube on their right, and a long ridge of steep hills, covered with woods, on their left.

The French army was commanded by the Marshal de Tallard, and the Bavarian by the Elector in person, having under him the Marshal de Marsin. They were drawn up behind the villages of Blenheim, which, lying near the Danube, covered the right wing of the French and Oberklau, which covered the center of the combined army. Their left extended to the village of Lutzinghen, which defended that flank. Before these villages, a rivulet ran, forming, by its occasional over-flowings, a marsh, overgrown with rushes, and bordered with hedge-rows; so that if they had had time to throw up works, and take other precautions, their position would have been perfectly safe from any attack. Besides this, they had stopped the channel of the rivulet, to make it rise above its banks, and inundate the neighbouring marshes. The commanders of the allied army saw that no time was to be lost in attacking the enemy, and therefore advanced, with great rapidity, to meet them.

The French were posted on the right, and somewhat nearer the rivulet, than the Bavarians. Although these two armées were united, they were en-
camped separately, so that the cavalry of the left wing of the French, and that of the right wing of the Bavarians, joining together, formed the center of the whole line.

In Blenheim were posted twenty-seven battalions and twelve squadrons of dragoons, and the Elector placed the best part of his infantry in Oberklau and Lutzinghen.

Their artillery, amounting to ninety pieces of cannon, were distributed along the front of the whole army.

The allies were drawn up parallel to the enemy, with their left on the Danube, their right covered by a wood, and in their front, the rivulet, marsh, and hedges, above mentioned. A corps de reserve of infantry and cavalry supported the center.

Prince Eugene and Marlborough saw that the enemy was too far removed from the rivulet to be in a condition to defend the passage, and therefore resolved to cross it, and attack them in their camp.

In the evening, before the battle, they had posted in the wood, covering their right, a body of infantry, to protect the motions of that wing, with orders to take afterwards a more advanced position, whilst the remainder of the foot of the army was drawn up behind the hedges and bushes, which bordered the marsh.

It is said, that when the right wing of the allies appeared, coming out of the hills and woods, the French army imagined them to be a reinforcement, which they expected, under the Marshal de Ville-roy: but they were soon convinced of their mistake.

Marlborough ordered an attack to be made on some mills and houses, in the village of Oberklau, situated near the junction of the rivulet with the Danube, which the French set on fire, and soon abandoned. The English extinguished the fire, and occupied the post.

While this was doing on the left of the allies, a
large body of their foot, supported by detachments of cavalry, moved on from the center, and, crossing the rivulet and marsh, notwithstanding the difficulty of the passage, repulsed whatever opposed them.

The object of this attack, which occupied almost the whole space between Blenheim and Oberklau, was to prevent the French in Blenheim from coming out of that village.

A body of the allies appeared before Oberklau, but it was almost entirely cut off, by the troops in that place.

Prince Eugene having crossed the rivulet, on several lines of foot and horse, marched against the Bavarians, and drove them back with considerable loss; notwithstanding that they had taken due precautions to prevent any attack on their left flank, by posting troops along a road which led on that side.

The English troops again assaulted Oberklau, but without success. They, however, kept their ground, and masked that part so completely, that the artillery there placed could no longer be employed for the defence of the center of the combined army.

Whilst Eugene was checked in his attempt on the left wing, the English on the right were repulsed by Marshal Tallard, at the head of the French; but, being quickly rallied by Marlborough, they not only recovered the ground they had lost, but even drove back the French cavalry, although they were all the time, exposed to a very heavy fire on their left flank, from the troops stationed in Blenheim.

Tallard now charged the English, at the head of his cavalry, intermixed with what infantry he had still remaining in his line, and was at first successful: the allies, however, making a fresh effort, his cavalry was unable to resist the shock; but part of it flying from the field, and the remainder wheeling off to the right and left, behind the other troops, the infantry was entirely abandoned, and cut in pieces.

This defeat of the center, left a void space in the line of the combined army, which Marlborough in-
stantly filled up with a body of his troops; when Tallard, making another effort to withdraw the infantry and dragoons posted in Blenheim, was surrounded by the allies, and made prisoner.

During these proceedings on the French right and center, the contest was very warm on the left wing, between the Elector and Eugene, who, receiving a reinforcement from Marlborough, and encouraging his men, by the news of Marlborough's success, made a fresh charge on the Bavarians.

The Elector disputed the ground with the greatest obstinacy: but, his troops beginning to give way, and the French army being broken and put to flight, he and Marsin, forming their remaining troops into a hollow square, retired from the field, with their baggage, in good order; and, marching all night, made good their retreat to Ulm, a city up the Danube, about thirty miles from the scene of action.

The Duke of Marlborough then sent the Earl of Orkney to summon the troops in Blenheim to surrender. They, at first, made some scruples, but, at last, on learning the total defeat of their army, laid down their arms, and became prisoners of war.

The combined armies of France and Bavaria, amounted to about seventy thousand men, of whom they had six thousand killed, and eight thousand wounded. The number of prisoners was very great.

The victory cost the allies (who were at first nearly as strong) about five thousand men killed, and seven thousand wounded.—At least, such is the statement given by the French historian, the Marquis de Quinci, in his Military History of Louis XIV. but other writers have represented the loss, on both sides, as very different.

The French and Bavarians, they say, had twelve thousand slain in the battle, besides three thousand, who perished in the Danube, in endeavouring to escape across that river; three thousand taken prisoners
in the action, and thirteen thousand who surrendered after it was over.

Such was the renowned battle of Blenheim, or Hochstet, which was fought on the 12th of August, 1704.

REMARKS.

M. de Grimoard, to his account of this battle, annexes several very valuable observations, to the following effect: *

It would be unjust, says he, to attribute the loss of the battle to the troops, who fought with the greatest gallantry. This disaster ought to be charged only to the bad arrangement of the Generals, who evidently committed these faults.

1. They neglected to reconnoitre the motions of the allies, and procured no information respecting the precautions used for crossing the marsh and rivulet; so that, excepting a few discharges of cannon, the allies met with no interruption to their progress.

2. They drew up their troops for battle, separately and independently of each other, just as they had been encamped.

3. Tallard and the Elector deprived themselves of the use of their best infantry, by posting them in the villages.

This disposition was the more extraordinary, as these villages were so far asunder, that the fire of the troops stationed in the one could not cross that from the other village, and, therefore, could never prevent the allies from pushing forward between them.

4. The distance from the front of the combined armies to the rivulet was so great, as highly to favour the passage of the allies.

5. There was no change made in the disposition of the combined armies, even after the allies had begun to advance over the rivulet.

6. And after the allies had crossed the rivulet, no attention was made by Tallard, or the Elector of Bavaria, to prevent them from forming at their leisure: an attempt which might have easily been made, and which might have been attended with decisive consequences in favour of the combined armies.

7. When the center of these armies was broken and dispersed, the Elector, and Marshal de Marsin, who commanded under him on the left wing, ought, with the troops on their right flank, to have charged vigorously those troops of the enemy who had passed through between the villages.

Such a manœuvre, so obvious, and so easily executed, would

* Essai sur les Batailles, cap. 4, art. 3.
have stopped the allies, and afforded time for Tallard's army to rally, and return to the charge.

8. In the last place, the Elector and Marsin, by retiring from the field, abandoned to the allies all the infantry and dragoons posted in Blenheim, without making the smallest exertion for their relief.

Although the disposition of the French and Bavarians was, at first, contrary in almost every point to the rules of the art of war, it would still have been very easy to have rectified its principal defects, and to have forced the allies to have retired behind the rivulet and marsh.

This, says M. de Grimoard, might have been effected, by drawing out of Blenheim the twenty-seven battalions, and the twelve squadrons, crowded on one another in that small place.

The troops filing off by their left, would have deployed between Blenheim and the next village, Oberklau, and then advanced, on a good front, towards the rivulet. This infantry, supported by the whole cavalry of the center, would have been sufficient for stopping the progress of the allies in that quarter.

The twelve squadrons of dragoons ought, in this case, to have been formed into a corps de reserve behind the infantry.

The Bavarians, by a similar operation, with their troops posted in Oberklau, might have defended that part of the rivulet and marsh which lay in their front.

It is probable that some such operations would have induced a change in those of the allies: for, it is known, that it was only in consequence of the very defective distribution of the combined armies, that Marlborough and Prince Eugene resolved to hazard an engagement in such a situation.

Grimoard offers the following arrangement of the combined armies, which, he thinks, would have insured their success, had the allies attempted to come over the marsh to engage them. It was to have lined the bank of the rivulet, which, on their side, soon rises to a gentle elevation, with a full line of infantry, and behind it another line, composed of infantry and dragoons arranged alternately, the whole to be supported by the cavalry. A body of infantry, posted in Blenheim, would have served as a reserve for the right wing. The artillery ought to have been planted in front of the army, at all places where the enemy might, with the least difficulty, attempt to pass the marsh and rivulet.

VILLEROY having learned that Marlborough was advancing against him, drew up his army in order of battle. His army consisted of forty thousand infantry, and thirty-five thousand cavalry and dragoons. That of the allies amounted to thirty-five thousand infantry, and twenty-nine thousand cavalry.

The right and left wings of the French army, consisting of cavalry, were posted, the first near an eminence called the Tomb of Otqmont, and the second at the village of Otréglise. This village was filled with infantry, as were also Offuz, Ramillies, lying before the center, and Franquencies before the right wing. The whole of the left wing, and a part of the center, were ranged along the marshy banks of the river called the Little Géette. The artillery was placed in front of the left wing, near Offuz, and on the flank of the village of Ramillies.

The allies had their right at the village of Foulz, and pushed on their left to the neighbourhood of Franquencies. Their artillery was distributed along the front of the whole line.

The Duke of Marlborough wished, in the first instance, to get possession of Otréglise; but when he found that the river Géette, and the marshes on each side of it, were impracticable for an army, so that he could make no attack on the French left, he drew from his right, which in this case had no opportunity of being engaged, fifty squadrons, and placed them in the rear of his left. He detached also some battalions to attack Franquencies, which lay before that wing.

The Elector of Bavaria, who had a command in the French army, seeing this movement of Marlbo-
rough, dismounted fourteen squadrons of dragoons, which had been intended to strengthen the French right, and dispatched them to support the infantry, already posted in that village.

These several operations took up above five hours; and Villeroy, who plainly observed what was going on, was neither alarmed at it, nor made the smallest change in the disposition of his army, in consequence.

Marlborough next sent a body of infantry, preceded by twenty-four pieces of cannon, to attack Ramillies, which lay before the center of the French army.

Whilst this was doing, his left wing had gained possession of Franqueville, and soon after of Tavière, a village a little further on, in the same direction, and opposite to the flank of the French right wing.

Marlborough's cavalry on the left then pushed on against that on the French right with such rapidity, that the first line had not time to fill up its intervals from the second, which was drawn up at too great a distance, and which was embarrassed by the baggage. For, although Villeroy had learned, early enough, that the allies were marching against him, yet he had taken no measures for removing the baggage, but let it still remain between the two lines, where it was a great incumbrance to them both, in their operations, during the whole of the action.

The allies charged the first-line of the French cavalry, which made a most vigorous resistance, and even broke the squadrons which were in their front; but as the allies were drawn up not in detached bodies, with wide intervals between them, as the French cavalry were, but in long full lines, such parts of the full line as came opposite to the intervals of the French, meeting with no opposition, penetrated into these intervals, and, attacking the French in the flanks and rear, completely defeated them, and, instantly pushing forward, formed with their front to the right flank of the infantry of the French center.
Marlborough's victory over the French right wing was also greatly owing to an attack made by a body of infantry, who fell on their right flank, at the time when they were severely handled by the allies on their front.

After this success, the allies succeeded in driving the French infantry out of Ramillies. Their attack had begun at the head of the place; but the Duke perceiving that the first line of the French center was too far off to be able to support the infantry in Ramillies, and that these latter troops had their flanks very feebly defended, sent a body of his infantry to form on the right flank of the village, and by that measure became very soon master of it.

When the French were driven from Ramillies, the infantry of the center, and the cavalry of the right wing of the allies, advanced between this place and the village of Offuz. On their approach, the whole right of the French fled, abandoning their cannon; but their left, both infantry and cavalry, who had not yet been engaged, retired from the field in tolerable order, until night came on, when they all took themselves to flight, and were entirely dispersed.

The French lost two thousand men killed (says Grimoard, but seven thousand according to Cunningham), six thousand prisoners, one hundred and sixty colours and standards, one hundred pieces of cannon, with a vast quantity of baggage, ammunition, and stores.

The allies had about four thousand killed; but their success at Ramillies was followed by the subjugation of the whole Spanish Low Countries.

Villeroy himself retreated to the remotest parts of Brabant, there to make a stand, for the support of the declining affairs of France; and the Elector of Bavaria, who, in the whole conduct of this war, had conducted himself with the blind infatuation of personal rancour against the Emperor and his allies, instead of preserving the cool and dignified intrepidity of an able commander, lamented, in his letters to
Louis XIV. that Marlborough, who had always God on his side, if any judgment were to be formed from his successes, seemed to be born for his, the Elector's, ruin.

**REMARKS.**

On this celebrated and important battle of Ramillies, Grimoard makes the following remarks:*

1. He made no change in the disposition of his army, notwithstanding that M. de Gassion, and many other experienced Generals, represented to him that he ought, without loss of time, to draw off troops from his left to reinforce his right, which they saw would certainly be attacked by the allies, and to march his second line up to his first, to be in a situation to support it in action.

2. The village of Franquevies, which, by its position, might have been of great use in covering his right wing, was neglected, having only a small party of troops in it.

3. The space between Franquevies and his right wing, Villeroy had left unoccupied, by which he not only lost the protection of that place, but the allies were enabled, with little difficulty, to penetrate through, and gain the right flank of the French cavalry.

4. Both his infantry and cavalry, on the right of his army, were too weak to resist the troops brought against them by the allies.

5. There were not enough of troops, posted in Ramillies, to be able to make an effectual resistance. They consisted only of some battalions of foreigners, filled up with prisoners and deserters; and were so few, that the place was forced, while the troops were all employed in defending its front.

The hedges, between Ramillies and the first line of the French army, had not been thrown open, so that there was no ready communication between them; and to this neglect Villeroy had added another, that no communication had been opened between the several corps, posted in the gardens and orchards of the place, by which omission they were prevented from supporting each other, or making any regular combined defence.

6. The right of the French infantry, instead of being drawn up at a distance from Ramillies, ought to have been posted so near it, as to have given to and received from it support.

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* Essai sur les Batailles, cap. 5. art. 3. sect. 2.
7. One half of Villeroy's army, being drawn up behind a river and marshes, was rendered entirely useless, and never fired a shot during the action.

This fault was unpardonable in every case, whether Villeroy did, or did not believe these marshes to be practicable for an enemy. If he had well examined the field of battle, why place his troops in a position where they could be of no service?

If he did not reconnoitre the ground, he can never be excused for having drawn up his army on a spot, with the good and bad properties of which he was not acquainted.

8. His second line was placed at too great a distance from his first.

9. He had formed no corps de reserve, which is at all times requisite, and which, when properly employed, has often entirely turned the fate of a battle.

10. Lastly, he neglected to remove his baggage, &c. which remained, even during the action, crowded between the two lines of his army.

To these and other remarks, Grimaud has annexed a scheme for an arrangement, in the room of that of Villeroy, of which the following is the substance:

The three villages, Franqueyres, Ramillies, and Offuz, were posts of such importance, that they ought to have been occupied by large bodies of infantry and artillery, to defend the front and flanks, and other bodies of infantry, behind these places, to be ready to support those in them.

Behind the marsh and river, on the left flank of Ramillies, infantry ought to have been drawn up, with several pieces of artillery in their front, to play against the allies, when attacking the front of Ramillies.

Another body of infantry, with artillery, should have been placed on the right flank of the same place, to attack the right flank of the allies, when pushing forward between Ramillies and Franqueyres, to charge the French cavalry, drawn up in three full lines, and supported on the right and left by Franqueyres and Ramillies.

As the French had more troops than were requisite to fill the field of battle, all the way from Offuz to Franqueyres, they might have posted along the river and marshes, to the left of their line, several battalions and squadrons, to observe the movements of the allies opposite to them, and, with the remainder of the troops, formed a reserve, to support the right of their line.*

Le Conte de Turpin, in his Commentaries on the Mémoires of Monteculuti,† proposes an additional expedient, as proper to have been adopted by Villeroy, in this battle; which is, that

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* Essai sur les Batailles, cap. 5. art. 3. sect. 2.
† Tom. 2. p. 105. edit. 1770.

The French were encamped near the towns of Tasniere and Malplaquet, covered by woods on their right and left, and in their rear they had a country much intersected by hedges and bushes, very fit to secure their retreat. They had made great exertions to strengthen the intrenchments of their camp; for which they had several days, as the allies did not choose to attack them, until the arrival of more troops from their camp before Tourmey.

The allies were encamped between Blaquiere and Sart, with their center at Blaregnies. Marlborough and Eugene, having consulted the deputies from the States-general, resolved to give battle, notwithstanding the many difficulties stated by these deputies.

Early in the morning, their army was drawn up in order of battle, and the Generals riding along the ranks, as was their custom, gave the necessary orders, and exhorted the troops to behave with their usual courage and good order. The troops expressed great eagerness to engage, and begged the Generals not to let slip the present opportunity of striking a decisive blow.

The attack was made on three parts of the French camp at once.

The Duke of Argyle led on the British, on the
right of the army. After receiving the enemy's fire, he fell on their intrenchments, and, at last, made his way through it; then pursuing those who retired behind the second intrenchment, he also carried that: and still pushing forwards, bearing down all before him, he stopped not until he came to the third line of intrenchment, which he likewise forced, and there took post. The two other attacks by the allies, were unsuccessful; but returning with fresh courage, these parties at last, after a violent struggle, drove the French back to their second line of works, where they rallied, and returned to the charge; but, after two hours very severe fighting, the French were again forced to retire behind their third intrenchment, where they resolved to make their stand. When this happened, Eugene hastened to support his left, where the Dutch troops were posted, and who were hard pressed by the right wing of the French. Both parties were alternately forced to give way, and retire under cover of their respective cavalry; when a shot from one of the cannon of the allies, wounding Villars in the knee, he was obliged to be carried off the field.

In this part of the action, the Dutch infantry, who had made a most obstinate resistance, suffered very severely; but, being properly supported by Eugene, in person, at the head of a party of troops, and by three regiments of Danish cavalry, who had been posted in the rear of the infantry, the Dutch made a fresh attack, and, making their way across the intrenchment, drove the French from their post. Their right wing was beaten back, and separated from the center, and forced to retire to the woods behind their camp, where they attempted again to form; but were attacked by some battalions of British infantry, and squadrons of horse, which, after various success for some time, at last forced the French entirely to give way.

When the allies got possession of the enemy's camp, which was so well intrenched, that it looked
like a fortified town, they sent on some squadrons to scour the woods.

These advanced to an opening, whence they discovered the French flying towards Maubeuge, but with a body of troops moving off slowly in the rear to cover their retreat. In this manner the French army retired in tolerable order: for such was the nature of the country, and of the measures taken by Boufflers to prevent a pursuit, that the allies could not attempt to harass them.

In this battle the allies had six thousand men killed, and nine thousand wounded; the French, seven thousand killed, and ten thousand wounded; but their loss by desertion was also very great.

Of the French few or no prisoners were made in the action: but they were chiefly the sick and wounded who fell into the hands of the victors, in the neighbouring towns, which surrendered, without resistance, soon after the battle.

**Remarks.**

The nature of the position chosen for the French camp, and the uncommon strength of their works, consisting of three successive lines of intrenchment, rendered an attack on their camp so hazardous an operation, that the allied Generals were not only opposed by the Dutch deputies when it was agitated, but they have been more than once blamed by others for seriously entertaining such an idea.

Nothing less than the high character of Marlborough and Prince Eugene, confirmed by their signal success, could perhaps have been sufficient to justify the measure.

The persevering intrepidity of the assailants, and the resistance of the French, which, on this occasion, was uncommonly steady, are equally worthy of the reader's admiration; but the result well confirms the remarks of Grimoard,* that the attacking army has always an essential advantage over that which receives an attack. This is true, in a particular manner, when the latter has taken a strong post; for then the assailants have full time to make their necessary dispositions, to correct any errors they have committed in their arrangement, and they need never make their attack, but at the time, and on the points, which may appear to be best.

* Essai sur les Batailles, cap. 2. art. 2.
BATTLE OF TORGAU.

Besides, an attack on an enemy strongly posted never fails to raise the courage of the assailants, whilst it has just the contrary effect on the enemy, shut up, inactive, within his intrenchments. For, in this case, the troops are always disposed to believe, that the enemy are conscious of possessing some decisive superiority over themselves, else they would never attack their post.

These considerations may, perhaps, with others, have determined Marlborough and Eugene to make the attack on the French camp at Malplaquet: besides, they well knew, that the fervid impetuosity of the French, which renders them so formidable in the onset, when suffered to begin the action, would become entirely useless, while they were confined and reduced to act within their intrenchments, deprived of all prospect of a victory, and, for their utmost reward, having only the chance of resisting and repelling the attacks of the enemy.

BATTLE OF TORGAU; FROM ARCHENHOLTZ.

The 8th of November was the day which will be ever memorable in the annals of war, on which human blood flowed like water; on which those armies which had both so often been crowned with laurels, stood on the verge of destruction; on which men set the laws of nature at defiance at one time, and at another, overcome with terror, submitted to her decrees; on which both sides displayed the most desperate valour, and attempted every thing of which the art of war is capable; on which victory, that was to decide every thing, was long in perpetual oscillation, and continued uncertain till midnight, when it was gained by the Prussians in complete darkness.

The King marched his troops in four columns through the forest of Torgau. His plan of operations was of the most comprehensive kind. The Austrian army was not merely to be conquered, but to be annihilated. The routed and flying soldiers, being deprived of their retreat over the Elbe, were to have solely the choice left of falling by the sword, of being drowned in the river, or of being made prisoners. Both wings of the Austrians, or rather the
extremities of the horns of the half-moon, of which Daun's army was composed, were to be attacked at the same time, and thrown upon the center. For this purpose, the King divided his army, which consisted of 60 battalions and 120 squadrons, so as to make two separate and independent attacks. General Zieten was sent to the road leading to Eulenburg, with one-half of the Prussian army, to attempt the heights of Siptitz, near Torgau. In case the King defeated the enemy with the other half, the Austrian army would be inevitably lost. Theresa's power destroyed for the remainder of the war, and the name of Torgau, like that of Cannae, would be rendered immortal by poets and historians. For the attainment, however, of this great object, extraordinary obstacles were to be surmounted. Daun stood with the flower of the Austrian army in a most advantageous position: his left wing touched the Elbe; his right was covered by eminences, provided with large batteries; and before his front were woods, ponds, hedges, ditches, and swamps. General Lascy's corps stood at a small distance from the main body, and was covered by that as well as by a chain of ponds on both flanks. The attack on this corps was to be the first enterprise of General Zieten, for which purpose he marched his army directly to Siptitz. But this division of the troops, which was to remain a secret to the enemy, took place when they were upon their march, and had arrived on the main road leading to Leipsic. Frederick marched his columns over the Domtscher-heath, which was occupied by the enemy. He found here grenadiers, creats, dragoons, and hussars, who all retreated, without loss of time, to the main army. Soon after, he met with the Austrian dragoon regiment of St. Ignon, marching alone, and which knew nothing of the King's approach, till it found itself between the Prussian columns. The passes of the wood were immediately taken possession of by the Prussian infantry, whilst the ca-
valry surrounded the Austrian regiment. Zieten's hussars were commissioned with this office, which they executed with great spirit. All the dragoons which did not fall beneath their swords were made prisoners, with their General. The King, in the meantime, continued his march; he surrounded the enemy's right wing, and, although all his columns, foot, horse, and artillery, were not yet come up, he attacked the Austrian army immediately with his advanced guard, consisting of ten battalions of grenadiers; an example of the greatest boldness, which Charles XII. had given at the battle of Narva, and which succeeded against the Russians. A firing of cannon which had been heard at a distance (but which was, in fact, only the attack on some croats) caused the King to conclude that Zieten was engaged with the enemy, and in some measure justified this rash determination. The time never was more precious. It was two o'clock in the afternoon; in a few hours it would be dark, and these few hours were to decide the fate of Frederick, and, perhaps, that of the Prussian monarchy. Daun received the attack of the Prussians with such a discharge of artillery as never was heard before since the invention of gunpowder. *Four hundred cannons, planted on batteries, were directed as it were to one point, their fiery throats vomiting death and destruction without intermission. It was a representation of hell, which seemed to open to receive its prey. The greatest veterans of both armies had never before wit- nessed such a scene of fire; the King himself continually repeated to his aids-de-camp: "What a terrible cannonade! did you ever hear the like?" The effects of it too were horrible beyond description. In half an hour the 5,500 Prussian grenadiers, who had broke down the enemy's chevaux-de-frise,  

* Dr. Towers, in his Life of Frederick III. says 200; but as the author was present at the engagement, his account is surely more to be depended upon. J. P.
and begun the attack with astonishing courage, lay extended on the field of battle, dead or wounded, having hardly had time to fire off their muskets; only 600 remained the day following fit for service. What increased the difficulty of the attack was the mountainous nature of the country; but the Austrians were also, on this account, confined in their disposition, so that their second division was scarcely 300 paces behind the first. This terrible slaughter of his grenadiers seemed to disconcert the King; and, on his seeing one of their leaders fall, Count Anhalt, who was a great favourite of his Majesty, he turned to the Count's brother, who was one of his aids-de-camp, and observed, "Every thing goes ill to-day. I am losing all my friends. I have just received the news of your brother's death." It rained heavily; but the thunder of the artillery, and, still more, the hurricane of iron which blew about and rent the air without intermission, seemed to separate the clouds in the vicinity of the field of battle, and the sky became somewhat clearer. In the mean time the main columns approached out of the wood; but before the soldiers could get sight of the enemy, the tops of the trees being shattered by their balls, fell down upon their heads. The thunder of the cannon echoed dreadfully through the forest, as at the same time the sound was the trumpet of death. The Prussians, now advancing from the wood, like wave succeeding wave, were cheered on their arrival on the field of battle with no encouraging prospects; but, on the contrary, beheld their former comrades mostly slain, and the remainder struggling with the pangs of death. Those grenadiers in whose company they had expected to triumph, were no more. Zieten's army still far off, and the enemy behind his murdering machines, not in the least disturbed. The Prussians endeavoured to bring up their artillery, but this, particularly the heavy cannon, could not, on account of the rapid march of the infantry and the chevaux-de-frise, be speedily accomplished, so
that the horses were soon killed by the enemy’s shot, the drivers who did not take flight shared the same fate, and the wheels and carriages knocked to pieces. Notwithstanding this, the Prussian infantry made a fresh attack with that courage and order which they always display in the field. The Austrians, encouraged by the slaughter of the grenadiers, had pressed forward, but now were compelled to retreat to their former position. The fire of the carabineers did much mischief among the Prussians, who fell by whole ranks; others still advanced to supply the vacancies. Old officers fall; young ones succeeded them, and encouraged the veterans by their example; hills were taken possession of, and batteries mastered.

But soon the scene wore a new appearance. Almost the whole of the Prussian cavalry remained still behind, and could therefore not support the victorious infantry, any more than the artillery, which, on their emerging from the wood, had been rendered unserviceable by the enemy, or had been left in the wood itself. Daunt took advantage of this, and ordered fresh troops to march to the field. His cuirassiers attacked the Prussian infantry sword in hand, made great havoc among them, and drove them back into the wood. At last the Prussian cavalry made its appearance to the aid of the foot, but owing to the general disorder, and to a wide ditch which hindered them from forming, they were also thrown into confusion, and driven back. A second attempt on the part of the cavalry met with more success. In this Colonel Dalwig, a skilful manoeuvrist, having conducted the cuirassier regiment of Spaen, shewed an astonishing act of valour, by opposing himself to, and repulsing the whole of the enemy’s cavalry, and afterwards falling upon the Austrian infantry, which he defeated and made some thousand prisoners. Among those was the Emperor’s own regiment. The whole Austrian line was in danger. But now the Austrian cavalry poured in
on all sides, and the Prussians were obliged to retire. Frederick himself made a new attack with his infantry, but without success. Night came on, their strength was exhausted; the King himself wounded, and the battle appeared to be for him totally lost. Dawn posted off couriers for Vienna, who, surrounded by petitions blowing their horns, and by the exulting populace, entered the imperial city, proclaiming a complete victory.

But in the book of fate was inscribed not Theresa's but Frederick's triumph; for Zieten with his army had not remained inactive. In consequence of the misfortunes attendant upon the King's army, it had become necessary to alter his plan of operations; he was moreover opposed by the Austrian army under Lassey, composed of 20,000 men. All difficulties, however, he had surmounted, and succeeded in arriving to the King's assistance. General Saldern perceived that everything depended here upon the possession of the heights of Siptitz; these, therefore, he always kept in view, and approached gradually the village of Siptitz, which was enveloped in flames. Lieutenant-colonel Mollendorf, of the guards, the present governor of the royal residence, advised a manœuvre to be used on this occasion, which was attended with the happiest consequences. A few battalions marched through the village and stormed the heights, together with a considerable battery upon them, which in a short time was mastered. Other troops drawing their cannon by hand, and protected by their cavalry, pursued the road to victory. After this a totally unexpected cannonade took place among the Austrians from these heights, which, on account of the darkness, augmented their confusion. Meantime some troops of the Prussian left wing advanced, having formed themselves as well as possible, their drummers beating Prussian marches to assist their victorious comrades during the darkness of the evening. These were conducted by General Halsen. This distinguished chief, whose character...
is a compound of courage and patriotism, having had all his horses shot under him, and being disabled by old age and by wounds for marching, placed himself upon a cannon, and in this manner was drawn to face the enemy. Lasey, one of the most unfortunate commanders of the 13th century, made now some vigorous attempts to repossess himself of the heights, but was twice repulsed with very great slaughter by Saldern and his veterans. The Prussians maintained their conquered post. This happy circumstance decided the battle, which had continued till half past nine at night. The sun bid adieu to the Prussians in the midst of blood and slaughter, but the evening star, so often propitious to great and fortunate achievements, was favourable to them. The Austrians thought now of nothing but a retreat, which was assisted by three bridges which they had thrown over the Elbe. The roaring noise of this river proved a compass to them in a night so dark that a man could not see his hand when held up to his face. The Prussians were without any such director; they rambled about in great and small bodies, sometimes in the open fields, where the flashes of the cannon served them occasionally to distinguish the murderous objects. Uncertain of the situation of the enemy, every step was made with care and attention. As timorous persons at midnight fancy they see ghosts, so the not timorous Prussians fancied nothing but enemies. Many of these groups fired upon each other reciprocally, till some among them found out their mistake and announced themselves to their friends. This circumstance took place likewise among the Austrians. These wandering troops took officers prisoners on each side every instant, who were as suddenly liberated by the arrival of fresh bodies of men. The imperial General Migazzi thought he was arranging his brigade, but the men turned out to be Prussians, who soon knew him by his dialect, and made him prisoner. The same thing happened to the imperial Colonel
Orost, to the Prussian Lieutenant-colonel Mollendorf, and several other Austrian and Prussian officers. The King himself, with his escort, fell in with one of these rambling bodies. On the usual question, "who goes there?"—Austrians was the answer. The Prussians immediately attacked them, and made prisoners of a whole battalion of Croats. Soon after this, a large troop of Imperial carabiniers met with a like misfortune, as they were trotting about in the dark. Some hundreds of Worasliners, keeping together in a body, attempted to find the road to Torgau; they missed it, however, and fell into the midst of the Prussian cavalry who had disembowled, and now found themselves under the necessity of fighting on foot, on which the Worasliners grounded their arms. No orders could be given, or any obeyed in this Egyptian darkness. The commanding officers were either killed, wounded, or roving about to find their scattered troops; for this purpose they were obliged to grope about like blind men, at one time falling over dead bodies, and at another over other different substances, with which the field of battle was covered. Prussian officers of rank, who had heretofore been accustomed to see their orders attended to like the dictates of oracles, and by the powerful word must, to extract possibilities out of seeming impossibilities, found here, for the first time, bounds set to military exertion. In the midst of this darkness which covered the land, in the midst of the cries and groans of the dying, they wished to embody and to command troops of warriors. They called, they ordered, they shouted, they stormed in vain. Nobody obeyed; all were secured from punishment by the darkness, and therefore attended to the more powerful orders of self-preservation. The long winter night of 14 hours was bitter cold. Some parties were fortunate enough to get wood together and make fires; but others were obliged to do without this very necessary comfort, and ran about in the dark like madmen to warm
their bodies by exercise, in consequence of which they every instant stumbled and fell over the dead bodies. The rain had made the ground quite swampy, many nevertheless lay down and attempted to repose in the mud, till the wet penetrated their clothes and rendered their limbs stiff with cold. The soldiers had been without food the whole day, and were fatigued with their labours of blood. Was any among them still in possession of his haversack, or did not find it empty, still he knew not where to get a drop of water. Tormented with hunger, thirst, weariness, and cold, daylight was anxiously expected, and with that a renewal of bloody scenes.

However hard the condition of the tired and wandering soldiers might be, there yet remained for another class of men, one far more dreadful this night, viz. the wounded. They who were in any situation for it endeavoured to reach the neighbouring villages, but the remainder were by their hard fate doomed to remain extended on the field. Here benumbed with cold, with mangled limbs and broken bones, swimming in their blood, and deprived of all assistance, they lay wishing for immediate death. For many hundreds of these unfortunate people still greater torments were in store. A crowd of the refuse of the human race were employed throughout the whole of this dreadful night, in traversing the field of battle, robbing the living and the dead; they did not leave even their shirts to cover the bodies of the wounded. In vain the latter uttered complaints and lamentations, the sounds were lost amidst the universal din which resounded on every side. Many of them were murdered by these miscreants, for fear of discovery. Several were wounded only in the legs, and not dangerously; they were however unable to stand, but in consequence of being exposed naked to the cold and wet of a November night upon swampy ground, they became the victims of death.

This remarkable night afforded moreover a scene
which had perhaps never been witnessed before. At the close of the skirmishes the men belonging to both sides frequently got mixed together. Numberless fires were observed in the forest of Torgau, at which Austrians and Prussians were warming themselves together promiscuously, not the conquerors with their prisoners, but both sides free, and well armed. The general and pressing need of warmth had been the accidental means of uniting, and had made these bloody-minded warriors, for a short time, indifferent towards each other, had caused them to conclude a truce for a few hours till day should appear and decide the chance of war. As no one knew what turn affairs had taken, both parties agreed to give themselves up to whichever side should be found to be master of the field.

The King had repaired to the adjacent village of Elsnig. Here all the houses and huts of the peasantry, together with the barns and stables, were full of such of the wounded as could either crawl thither, or had been assisted by others for that purpose. In this situation they had to endure the pain of surgical operations, or to remain some time with their wounds undressed. Frederick, being unwilling to disturb them, had the village church opened for his own use, where his own wound (a musket shot across the breast) which grew painful, was dressed, immediately upon which he gave orders, received intelligence, and sent off a courier. He wrote his dispatches by a dim light at the altar, the lower steps of which served him for a chair, and the upper ones for a table.

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ON THE NEW MILITARY SYSTEM OF THE FRENCH, ADOPTED IN THE REVOLUTIONARY WAR.

THE French owed the uncommon success which attended their operations during the four last campaigns of the revolutionary war, and which was
too constant to be considered as the mere work of chance, either to the military art, or to the great superiority of their resources and means for carrying on the war.

If the important events of war are merely to be ascribed to the military art, it must have undergone a considerable change, since most of the principles on which it was conducted widely differ from the rules abstracted from the occurrences of former wars. But if a superiority of means and resources struck so much the balance in favour of the French, that they could allow themselves to secede from the former fundamental principles of the art of war, it is no less important to inquire into the nature of these resources, in order to determine the improvements which the military art is likely to derive from this war.

There are writers who, in the manner in which the French conducted the war, have discovered a total dissolution of the principles laid down in former wars, and who announce an impending total change of our tactical system; yet these assertions are not the results of analytical inquiry into the causes and integral parts of the new French military system; they are founded on the declarative inference of the war, on the political relations of the states of Europe. Though it is butt too common that the generality of mankind implicitly declare in favour of the victorious party, yet the inference drawn from important political events, in favour of important military results, appear as unfair as it is uncertain; a war may be attended with the most important consequences in a political point of view; it may have revolutionized whole countries, and changed their forms of government, without advancing the military art one step nearer to perfection. On the contrary it appears, from the experience of all ages, that a war productive of great political results, cannot be considered as important in a military point of view. The military art supplies means of defense only as
Long as some equipoise of strength remains between hostile powers; as soon as this is done away by too great a preponderance of one of the nations at war, the rules of the military science cannot any longer be observed. It is for this reason that the seven years' war will always remain highly interesting to posterity, as a practical course of every branch of the science of war, though it did not produce any considerable change in the political situation of the states of Europe.

A circumstance which has contributed not a little to raise an expectation of the military art undergoing a thorough change from the results of this war, is this, that we find the interior tactics of the French to differ widely from our own. The higher tactics, which generally decide the issue of military operations, form a field too extensive and too little known for the multitude to judge of; while, on the other hand, the objects of interior tactics suit the capacity of all men; they therefore attract general attention, and every change, however immaterial, is deemed important.

The resolution of the problem, whether the military art has made an actual progress in the course of the revolutionary war, depends on the decision of the following question—"Has any experience been gained during the revolutionary war, which refutes or perfects principles laid down in former wars? or, has any truth been discovered, which is not confined to certain peculiar circumstances, but, on the contrary, may be put in practice by other nations?"

Among the writers who have hitherto treated on this subject, citizen Dumas, late French General, and one of the Fructidorized members of the Council of Elders, deserves peculiar notice: he published last year, a small treatise, under the title "Des Résultats de la dernière Campagne" [On the Result of the last Campaign], which displays a concentrated view of all the arguments preferred by the French in defence of their new military system.
The French are indebted, according to that writer, for the uncommon success of their arms, merely to their new method of carrying on the war. "If," says he, in the beginning of his performance, "they have not brought about an important revolution in the principles of the military art, they have at least produced a very momentous one in the application of these principles. It may be fairly said, that this dreadful art has been brought nearer to perfection in a very considerable degree."

Immediately after this assertion, he owns, that neither the mechanical nor scientific part of that art has made any progress; he considers the neglect of the latter as "the neglect of the combination of the use of different arms in a given space and proportion," as gain to the art, "since this part has lost much of its importance:" yet he does not condescend to tell us why it becomes less important, else he might have stumbled upon the idea, that, from the vast preponderance of their means, the French could neglect the higher tactics without danger. Instead of pursuing this tract, he therefore proceeds to delineate the state of the military art previous to the Revolution, in a manner which reflects the most brilliant light on the new military system of the French republic.

In the very outset he confounds, in a strange manner, transactions of different periods of time: "Since the introduction of standing armies in Europe," says he, "it was the main purpose of commanding Generals to concentrate as many troops as possible on this or that theatre of war; and every nerve of genius was strained to put in motion this unwieldy mass, confined within a narrow space. If this mass was destroyed or dispersed, the consequences proved the more calamitous for the state, as one battle lost frequently put an end to the whole war." He alludes here to the time immediately subsequent to the introduction of standing armies; yet his picture is not at all fitted for that time, but seems to be taken
from the history of the military art of the Romans previous to the Punic wars. Though the military science prior to the thirty years' war, was certainly extremely defective, yet in that age of wild tactics, when personal bravery and chance alone decided, the concentration of a vast mass of troops within a narrow space was by no means the order of the day; nor do we meet, throughout the whole period he speaks of, with one single instance where the loss of one battle decided the issue of the war. Gustavus Adolphus and Nassau advanced the military art to a high degree of perfection. Their method of carrying on the war consisted less in giving battle than in skilful movements of small corps, wherein, however, they were afterwards far excelled by Turenne and Montecuculi. The principles of these great warriors would have formed the military code for all succeeding commanders of armies, had not the ambitious views of Louis XIV. occasioned, instead of the former armies of 20,000 men, four times that force to be brought into the field. In proportion to the increased number of fighting men, it became necessary to increase the artillery, the conveyance of every description, and the hospitals. The conduct of military operations became now subject to much greater difficulties. On every movement forward the commanding General had now to fear, either being taken in the rear, or being cut off from his magazines. For this reason, as many places were fortified as possible, and moreover connected by means of long fortified lines, which it was impossible to defend. Undecisive affairs of posts, and long sieges, were commonly the results of the most bloody campaigns; and thus arose, especially for the armies which waged war in the Low Countries, covered throughout, as it were, with fortresses, those slow tardy operations, on which D mas very properly observes, "that all these operations merely tended to lead formidable armies into the lists, and to draw them up in battle array opposite to each other; a consequence of which system was
the improvement of the attack and defence of strong places. But he betrays, soon after, his imperfect acquaintance with the art of war, and confounds again different periods, by observing, "that from the same reason they had been at considerable trouble to perfect the different arms, as well as the manoeuvres of great armies." At affairs of post, sieges, and the defence of strong places, the manoeuvring with great armies does not seem to be the chief requisite; nor was the improvement, or rather the study of the scientific part of tactics, a consequence of the wars in the Low Countries; it did not arise but after the first and second Silesian war, and was at its prime in the very first twenty years after the seven years' war.

His ideas on the tactics of the King of Prussia are neither clear nor correct, though he quotes that great monarch in order to support his cause by the authority of a great name. After having asserted, that from a partiality for the mechanical and scientific parts of the art, its political branch had been till then entirely neglected, he strives to prove that Frederick was the first who cultivated the latter, and that to this alone he owed his triumphs. "The most skilful observers," he says further, "admire in his exploits merely the uncommon activity and boldness with which his armies moved in a wide extensive space."

This remark is, no doubt, well fitted to the new military system of the French republic, and all Europe was, by Dumas's assertion, unable to discover the true key of Frederick's great exploits. "His military establishments," our author proceeds, "have been imitated in a servile manner, but the boldest traits of his sublime tactics had found no imitators, until a similar desperate situation induced France to conduct the war in the same manner."

The situation of the King of Prussia in the seven years' war bears no comparison with that of the French in the revolutionary war, either in point of means and resources, in regard to the number of enemies whom either had to combat, nor with respect to the object.
of the war. The sole circumstance that the King, from the nature and extent of his means, acted upon the defensive, while the French, from the very same reason, carried on offensive operations, could not but occasion a vast difference in the conduct of the war.

The King of Prussia preserved, in some measure, an equipoise between him and his enemies, far superior in numbers, by the uncommon skill which his troops had acquired in the mechanical part of the art of war, by the implicit obedience and rigorous discipline which prevailed in his armies, and by the intimate acquaintance of his Generals with the scientific branches of the military art. But it was chiefly to his own genius he was indebted for the superiority of his arms; he was himself the soul of all the motions of the wonderful machine which he had to direct; had he met with Turenne's fate, the springs of the machine would have long continued to display the elasticity which he had imparted to them, but the results of the whole would have degenerated into convulsive motions.

Again, how different from his principles are those on which the French have acted in the course of this war! the very description which Dumas gives of the latter, confirms this assertion. "The tactics of the French," he says, "consisted in this, that they triumphed by a general attack made on all points at one and the same time. This mode of carrying on the war they most certainly cannot have learned from Frederick, whose means did not allow him to form a general attack on all points at one and the same time. By the most exact calculation, he had, upon an average, no more than 80,000 troops to oppose to 400,000 of his enemies; he could not, therefore, follow the new French military system, without frittering his army into corps so small as to render it impossible for him to succeed. To apply the tactics of the King of Prussia was equally impossible for the French, since it supposed a careful instruction of the army prior to the war, and a more intimate acquaint-
ance of the troops with inferior and higher tactics than could be expected from an army, in a great measure raised in the course of the war. Frederick's tactics consisted in this—to concentrate his forces, and to attack the principal points, not at one and the same time, but one after another. The tactics of the French are founded on this principle—with divided forces to attack all points, at one and the same time; their tactics differ, therefore, as widely from those of the Great Monarch, as the ideas of extension and contraction do from each other.

Dumas observes further on this system, "That the whole extent of country, between the Rhine and the Atlantic Ocean, was considered as one single position, as one single camp, the whole French nation as one single army, and the enemy's country as one single field of battle." This assertion may do as a poetical phrase; but, if such a system should be actually realised, and consequently be something more than a fiction, it would be requisite that all the various parts of this immense army should occupy exactly the position prescribed by the interest of each individual part; Jourdain would then not have been totally defeated, and compelled to retreat upwards of fifty German miles, without the center of the army having the least knowledge of it; the right wing would not then have been separated from the other parts, by an impracticable chain of mountains, scarcely passable for a single horseman. In order to avoid sinister occurrences the armies would, in such a situation, soon be obliged to draw nearer, for the purpose of supporting one another; and, from that moment, the monstrous field of battle would be contracted within the boundaries of a common theatre of war.

When Dumas soon after endeavours to persuade us, "That, from the confines of Holland to the Adriatic gulf, there is not one military post, not one single position, where the French warriors have not fought," it calls to recollection the gastronade of a
French emigrant, who, for the use of Gustavus III., late King of Sweden, on his intending to command
the combined army against France, composed in-
structions respecting the military exercise; wherein,
in lieu of the firing by battalions and half-battalions,
he introduced a million and half-million fire.
Though the new French military system differs
widely from Prussian tactics, yet it was well-suited
to the peculiar situation of France, in the middle of
the campaign of 1793, when the whole nation had
been called upon to serve in a mass; nay, it was
perhaps the only system which the French were able
to execute, under the singular circumstances in which
they were placed at that time.
Acting with a variety of corps, instead of great
armies, they were able to make use of the great num-
ber of undisciplined men, raised by means of the re-
quisation. To make them act in large bodies would
have been liable to numberless difficulties. A large
army, whose single parts are not accustomed to co-
operate with each other, resembles an unwieldy
mass, which, at the least movement, falls into the
most chaotic confusion.
The parallel order of battle, where the whole front
shares in the attack, requires less skill and precau-
tion, both in point of plan and execution, than when
one part of the army only is to engage. This cir-
cumstance proved very beneficial to the French, whose
Generals were but little acquainted with the scientific
branches of the art of war.
The new military system was well adapted to the
character of the nation, because every individual
soldier was more left to his own understanding, and
personal valour, than Prussian tactics admit. On
tracing the history of the French back to the re-
motest times, we find, that irregular unconnected
attacks always formed a characteristic feature of their
manner of waging war, and that they seldom proved
victorious in large extensive plains. The French
horse could not be accustomed to attack in close
order, previous to the reign of Louis XIV.; they were for this reason constantly routed by the German cavalry, notwithstanding their undoubted courage and high sense of honour. The restless impetuosity, which submits to no law, was rendered more predominant in the character of the French, by the influence of the Revolution. A system of tactics, which opened a wide field to the activity and personal valour of every individual, and demanded an active, rather than passive obedience, could not, therefore, but be highly pleasing to the nation at large, and produce important results.

Yet the great advantages arising from this manner of conducting the war could not be attained, or rather this manner of waging war could not be executed, but under such a singular conjuncture of favourable circumstances as seldom occur.

For this purpose it was necessary that the supreme power should be sufficiently omnipotent, not only to arm a multitudinous nation, by means of universal requisition, and to dispose of its property at pleasure, but also to stamp value on a sort of paper-money, which, being destitute of all real security, had no value at all. But for these extraordinary resources it would have proved as arduous a task to maintain this enormous mass of combatants as it had been to collect them.

Every soldier being in some measure left to himself, and not having served before, the troops were not accustomed to that implicit obedience, which urges the soldiers to fight on a day of battle: extraordinary means were therefore required to attain that end. Nothing short of the strongest combination of ideas respecting the love of the country, liberty, and equality, blended with a tolerable portion of fanaticism, could have been sufficient to keep alive that uncommon enthusiasm which was necessary for reconciling the public mind with the rigorous laws, which, with unheard-of severity, Robespierre introduced into the republican armies.
Without such a total dissolution of all social relations, as was occasioned by the Revolution, so many useful and enterprising men would have found it impossible to place themselves at the head of the armies. To select, from among 1,200,000 men, those who are best qualified for the command in chief seems impossible.

What would have become of this host of national guards, if there had not existed an army of well-trained troops of the line, from the junction with which they derived military knowledge and spirit? or, if the excellent corps of artillery and engineers had emigrated?

Besides, the new system of tactics could only be pursued so long as the French armies acted in the interior of France, or, at least so near the French frontiers, that their chief magazines of all sorts of warlike stores could be established in the strong places of the republic. An army which is intended to operate in a wide extent of country, must have its flanks and different divisions covered by fortified places, which connect and strengthen its extensive line; and an army composed, like those of the French republic in 1793, must also act in a country intersected by woods, ditches, and hedges, to prevent large bodies of the enemy's horse from falling unexpectedly on troops not acquainted with any regular manoeuvre, either of attack or defence.

Lastly, for the successful execution of the conduct of the war, adopted by the republican armies, it was indispensably requisite that the combined powers, or rather their commanding Generals, should have fallen into the conformity likewise to adopt the parallel order of battle, and, along with it, the system of extending their line.

But affairs would probably have taken a turn widely different from what they did, if the coalesced powers at the beginning of the campaign 1793, and after they had re-conquered the Austrian Netherlands, from a just estimate of the vast powers and
resources of France, instead of chimerical projects of conquest, had pursued vigorous measures of defense; if they had covered and shortened their line of defence, by fortifying Namur, Charleroi, Tournay, and the ancient strong places on the Scheldt; if, after the reduction of Valenciennes, instead of the ill-judged expedition against Dunkirk, they had secured their left wing by the capture of Maubeuge; if, after the loss of the Low Countries, they had thrown strong garrisons into the Dutch fortresses, and concentrated their main force near Maestricht; if Clerfayt, after his retreat across the Rhine, instead of fortifying the banks of that river with unnecessary works, which it was not possible to defend, had ordered some places on the Lahn, Wurzburg, and Ulm, to be put in a respectable state of defence, in order to maintain a concentrated position in the center of the theatre of the war, under the protection of the above places.

But the strongest proof of our assertion, that the new French military system does not admit of a general application, results from the indubitable fact, that the French Generals themselves began to relinquish it at the end of the campaign of 1796. Moreau’s retreat from Bavaria was perfectly in the style of Frederick the Great. Bonaparte, the most fortunate of all French Generals, has, by Dumas’s own confession, never pursued that system. Whether we follow him in his first operations, when he deceived Beaulieu by a feint attack on Genoa, or in the dreadful battles given by the Austrian Generals, to relieve Mantua, we shall always find, that his tactics chiefly consisted in gaining sufficient strength to attack the enemy on the most decisive points, by contracting his line of operations.

To conclude; if the non-observance of the rules respected in former wars could take place under such circumstances only, as, according to the records of history, never concurred before, nor are likely to concur again; if it was not attended with success,
as soon as the above circumstances did no longer exist in all their primitive force; if the imitation of the new system proved hurtful to the coalesced powers; if the combined armies as well as the French relinquished it at the end of the war, and owed their last successes to the observance of principles adopted previous to the war, it seems evident: that the military art has not undergone any revolution likely to have a decisive influence on future wars.

That war, therefore, which displayed so great a variety of interesting views for the politician and philosopher, and affords so rich a harvest, in regard to the knowledge of man, has not enriched with new discoveries either the mechanical or scientific branches of the military art, yet it has confirmed the truth of many principles and maxims known and observed before; and, in this respect, it deserves to be closely studied by every military man.

Among these principles are to be classed the great advantages of offensive operations over defensive ones; the benefits arising from a greater mobility of the armies; the influence of fortresses on the conduct of the war; the insufficiency of Prussian tactics, as they are called, in intersected countries, and the necessity, arising from thence, to connect more closely the operations of light troops with those of heavier ones; and consequently the necessity of our infantry learning to take a better aim; and, lastly, the great dependence of the mechanical and scientific branches of the military art on its political part, which has evidently decided the issue of the continental war.

Formation of the present French Army.

The French army, like the armies of the other European powers, is first divided into companies of either cavalry or infantry; and, secondly, into battalions for the infantry, and squadrons for the cavalry. The denomination of Regiment is appropriated to the cavalry and artillery; and the name of Half Brigade is now applied to the infantry.
NEW MILITARY SYSTEM

The denomination of Colonel is still retained in the cavalry, but that of Chief of Brigade is used in the infantry.

The Lieutenant Colonel and Major are replaced by a Chief of Battalion or Squadron.

The General Officers, who, in other armies, are called Major-generals, in the French are termed Generals of Brigade; as the Lieutenant-generals are termed Generals of Division.

Every military degree has evidently taken its denomination from the standing order of battle. The Chef de Bataillon is the commander of a battalion, a squadron, &c.

CORPS OF ENGINEERS.

8 Inspector-Generals.
34 Directors.
124 Captains of the 1st class.
117 Captains of the 2d do.
33 Lieutenants of the 1st do.
21 Lieutenants of the 2d do.
20 Pupils under Lieutenants.

The troops attached to the Corps of Engineers are, 8 Companies of Miners, commanded by a Chief of Battalion.

Each company is commanded by a Captain Commandant, a second Captain, first and second Lieutenant.

12 Battalions of Miners; each battalion contains eight companies, forming in all 1606 men, including officers.

The Battalion Staff is composed of a Chief of Battalion, an Adjutant-Major, and an Adjutant.

Each company is commanded by a Captain, a Lieutenant, and Sub-Lieutenant.

Account of the French Staff.

Military Staffs, as well as the different branches which are necessarily connected with the vast and complicated machinery of war, have been consider-
ably improved by the experience of our days. This organization, and the consequent arrangements resulting from it, will be found to be of very modern date; if we consider the manifold aids that have been successfully brought forward, in order to simplify the system of details, and to prevent the mind of the Commander-in-chief from being pre-occupied, by things which must impede the more important objects of executive enterprise. It is impossible to form any determined opinion, with respect to the manner in which the ancients made war. Their conceptions were always bold, and their plans proportionably extensive. But their operations, on the other hand, were less rapid, and their combinations less complicated than ours, on account of the difference of their weapons, and the imperfection of their artificial means of attack and defence.

The service of military staffs has been rendered a distinct and separate branch in modern times. It has grown out of the various movements of troops, the consequent variety of orders, and the necessity of exact and punctual returns. Notwithstanding this apparent system, no precise method has yet been fixed upon to govern all the different relations which constitute an efficient staff. The functions of the several officers belonging to this department are not yet sufficiently known, nor accurately ascertained. The chief and most interesting duty of a staff officer, that of reconnoitring ground, with military attitude and skill, is in itself an object of perpetual novelty and speculation; and every man who has paid the least attention to this branch of the service, must have discovered, that it was intimately connected with all the rest, and that, in order to execute its various duties with any degree of accuracy and use, it was necessary to have acquired a knowledge of the elementary principles of other branches. Such a man must have felt astonished at the deficiency of system, and the want of rules; and he may probably have lost some time in endeavouring to
find out a clue, to guide him through so vast and complicated a labyrinth.

In order to form an accurate idea of such an institution, and to ascertain its state and progress, at different periods, it is necessary that the inquisitive should call to their minds the manifold objects to which it is applied, together with the several denominations by which those objects are distinguished.

It is well known, for instance, that, in the German and English armies, the quarter-masters-general and their assistants were seldom, if ever, employed in direct military operations.* Their attention and time were rather confined to the closet, in keeping the details of service, and in communicating orders, than to the active duties of the field; which were performed by the several adjutants attached to the Generals. The quarter-master-general was entrusted with the whole interior economy of the army, and his functions, in this respect, corresponded minutely with those of the commissary-general.

The regular establishment of staffs (or états-major) in the French armies (of which we now propose to give a cursory view) was soon adopted in all the armies of Europe. It is but justice to remark in this place, that while the professional caractérs of France paid the greatest attention to the most minute details of elementary knowledge that were recommended by the Germans, they supplied the latter with models of the higher branches of the profession, and taught them to apply the different arts and sciences to the purposes of war.

Before the Revolution, there were three sorts of staffs belonging to the French armies, viz. The general staff, at the head of which was placed a quarter-master-general, who had assistant quarter-masters-general under him, without any specific rank attached to their situation.

Secondly, the cavalry staff, the chief of which

* The Austrians did so during their late war with France.
was likewise called quarter-master-general; and, thirdly, the infantry staff, whose chief had the rank of major-general in the army, and subordinate to whom were the staffs belonging to the park of artillery, and to the engineer department.

The duties of the two staffs attached to the cavalry and infantry service were limited to a regular transmission of orders of movements, to the superintendence of good discipline, and to a careful attention to the maintenance and supply of the troops, as well as to the interior economy of each particular regiment. The administration and charge of the army at large were intrusted, as they now are, to a commissary or intendant, who was only accountable to the general of the army, and to the minister. In the duties of the general staff of the army were comprehended all the preliminary arrangement and subsequent execution of the plans of war, together with the particular operations determined upon by the Commander-in-chief; the survey and reconnoitring of ground; the facilities for the march of the troops; the measurement of ground upon the principles of castrametation; the establishment of head-quarters and subordinate cantonments; and, finally, every thing which related to topographical distribution. It is natural to suppose, that those Generals, who were solicitous to make a proper choice of their principal aids and assistants, would appoint such officers to the staff as were capable of seconding their designs. But, as interest, favour, and partiality occasionally forced them to receive men less informed and less experienced, the service of the staff of the army (which is always more or less an object of jealousy to those corps that pride themselves upon executive knowledge) could not acquire a necessary stability and consequence. These three channels to promotion produced, of course, a multiplicity of candidates for situations; the instant the army was put upon a peace establishment, the advocates for reform and economy thought it right to reduce the staff; the
officers that had composed it returned to their several corps, under more or less favourable circumstances; some, indeed, and those only that had been particularly distinguished for assiduity and talents; and who were destined, as it were, to preserve the records of the several details of this particular branch of service, were retained by government, without any military rank, for the purpose of being sent upon specific missions, during peace. The labours and researches of these individuals have produced the most fortunate circumstances in favour of the service in general, and for the better arrangement of military staffs in particular.*

It was not until after the war which France had voluntarily entered into, to secure to the Americans their rights and independence, and which terminated in 1783, that a permanent staff establishment (in which no distinction was made with respect to corps) was, for the first time, instituted in the French army. The superior officers in it retained the rank of assistant quarter-masters-general, to whom an equal number of deputies or adjutants, with the rank of captains, was attached, and all obtained or kept a certain rank, independent of the line.† This corps, thus composed, and under the immediate direction of a general officer, obtained some stability; the official and field duties became more regular, and nothing seemed wanting to complete the establishment, and to lay the foundation of a military school for staff service, but the means of connecting it with the repository of charts and warlike plans, and with the geographical institution belonging to the engineer department.

All the correspondence, orders, and instructions,

* To this wise distribution of intelligent officers, during peace, may, perhaps, be attributed that superiority in topographical knowledge, which has so ably seconded every movement of the French armies.

† The staff-corps, on the British establishment, probably owes its existence to this system.
which had passed between the Generals of the French army and the different ministers of war, during the space of thirty years, had been carefully collected together. Able men, selected for the purpose, had scrupulously analysed these documents, in order to ascertain the causes of success or defeat; every one felt the necessity of drawing and of expressing, with greater precision and perspicuity than had hitherto been done, the charts of the different theatres of war, and of those frontiers, whose outward aspect, or front, it was in contemplation to attack or defend. Hence arose the wonderful improvement which has been made in that useful knowledge of topography; and to that conviction is owing the high degree of perfection to which the taking the dimensions of ground, whether by the naked eye, or by instruments, has been brought. A large assortment was collected of military memoirs, which not only related to the frontiers, to the coasts of France, and its foreign possessions, but likewise to all the countries into which the war might be carried. It must indeed be universally acknowledged, that this dépôt of military charts and plans forms the richest collection of the kind that ever existed. The staff officers who had accurately taken, and carefully preserved those historical and topographical documents, which grew out of the researches of this institution, at the conclusion of a war, contributed to the general stock, by bringing with them, not only the fruits of their own labours, but the improved result of original information.

In thus describing the origin, and making known the principles and necessity of a sound theory for the service of military staffs, we do not pretend to attach to either false importance or exaggerated latitude and weight. Military men cannot be too much impressed with the idea, that the science of war is only to be acquired amidst the activity of warlike operations, (or, as the ingenious writer of this work expresses himself, que la guerre ne s'apprênd qu'à la
guerre); that the most profound theorist must, at every step, experience incidents and wants, which bid defiance to rules and calculations; that the particular tactics, which suit each branch of the service, can only be learned in the actual experiment of the field; and that combats alone can determine the particular kind of tactics which are adapted to each corps or description of armed force, which suit the country, the soldiery, and the class of men that fall under their command. Even in known countries, and in places where battles have been often fought, and are so well remembered, that nothing seems left for sagacity or foresight to provide for, but where there are only examples to be followed, or marked errors to be avoided; even in such places as these, all suppositions are fruitless; war is always presenting something new; or rather there is no fixed plan which can be deduced from former ideas, and be fitted to the actual circumstances of the moment. It will be natural to ask, whether, from these observations, one can with propriety infer that the study of good models, the contemplation of the plans of the skilful Generals, a comparative view of their means of execution, and a minute and scrupulous examination of their several dispositions in action, are objects of useless attention and trouble? On the contrary; the investigation and review of what has passed in preceding times, either prepare the way for great talents, or serve to ripen such as have been developed and seconded by experience. The best modern Generals have never lost sight of the brilliant examples that have been left; they have never ceased to call into practice the tactics of the ancients, as far as the difference of arms and a change of manners would allow. To those who peruse the histories of the 17th and 18th centuries, and read over the actions of the most celebrated Generals of those times, this observation will appear peculiarly apposite. It is justified in the uniform conduct of the great Condé, Prince Eugene, Turenne, Marlbo-
rough, Marshal Saxe, and Frederick the Great. Their several military institutions, as well as their private commentaries, afford the most ample testimony to the truth of what we advance; and if it were meet or necessary to corrobore the same by instances that are reserved for posterity to consecrate to fame, we might bring forward the opinion and the practice of the most celebrated of our contemporary captains. This sublime conception is visible in all their operations; it is manifested in their writings, and hourly proved in their conversations; nor must it be attributed to that natural elasticity of genius which hurries similar minds to the pursuit of similar objects, and mingles together the congenial elements of which they are composed; but to that quick and just perception, in minds of a superior cast, which instantly attracts them all to the essential relations that exist between the objects of their mutual speculation. Impressed, as it were, by the result of contemplative reflection, they overlook intermediate occurrences, plunge into futurity, and snatch out of the womb of time the ultimate issue of events.

Thus, in the extensive field of modern and ancient military history, every one may find the particular kind and degree of instruction to which he is ambitious of arriving: in those repositories of knowledge, individuals may collect wherewith to adorn their memories, to sharpen their understandings, and adapt them to a variety of combinations; to animate their courage, to raise their genius, and by useful comparative views to enrich, and by degrees to bring to perfection, not only the basis of the science of war, but likewise the various arts that have been made tributary to it.

To this end must all the labours and all the attention of a good staff officer be constantly directed; however arduous, however complicated and extensive this species of military encyclopaedia may be, it is wholly his; and must be laboured through with
indefatigable industry. Let the genius and talent of the individual be what they may, this truth must be always impressed upon his mind, that they will be useless, unless he have resolution to assist them by intense labour and application. It will be easy to form some opinion of the good that might be derived from a more extensive and better planned system of instruction in this line, by what was effected by the French during the American war, in consequence of a well-conducted staff; notwithstanding the disadvantage to which it was subjected, on account of the frequent changes it underwent, the rapidity with which it was necessarily formed, and the desultory nature of its functions.

It must not, however, be concluded from these remarks, that this essential part of modern warfare has been neglected. Staff service has, on the contrary, been considerably improved, its functions, have been clearly defined, and the effects which have been produced by gradual ameliorations ought to be carefully preserved. Among the alterations which have taken place for the better, there are two principal instances that deserve notice. The first is the simplification of staff duties, by reducing the three heads under which they were classed, and rendering the whole subservient and responsible to one source. The second is the new and hitherto unpractised custom (from being formally opposed by men of military influence) of intrusting the command of columns of attack to the staff officers, who before were confined to the mere delivery of orders, and to instructions for their occasional direction. Not only the individuals themselves, but the service in general, are considerably benefited by these arrangements. The officers become calculated for any species of active warfare, by being enabled, through this system, to apply their theory to practice; and to secure the esteem and confidence of the soldiers, who are easily indisposed towards that class of officers who do not combat in the ranks. By means of this arrange-
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ment, the General of an army can look with certainty to the execution of that part of his plan, of which he might have apprehended a disclosure in the customary way of transmitting orders. Hence it happened, that the principal staff officers, who, during the late contest with the Empire, were selected by the Generals of the French army to second their designs, had a considerable share in all the victories they gained. Nor have there, perhaps, ever before been so many instances of that entire confidence in concerting measures, and of participation of glory in the execution of them (without which, indeed, all the talents and activity of a chief of the staff must be abortive, as appeared during the course of this war. Almost every individual, who was employed in that difficult branch, had already given proofs of professional knowledge in some species of military service. Generals Berthier, Regnier, Dessolles, Dupont, Oudinot, and some others, have been alternately taken from the command of divisions, battalions, and even detached armies, to superintend and manage the staff service. They have quit the same line, and again resumed its functions, according as the Commander-in-chief thought the application of their talents might be useful in either way; and it is but justice to say, that these officers contributed, in a great degree, to the consolidation of the different branches which constitute the present staff of the French army. It is also worthy of observation, that Generals Mack, Bellegarde, Chastelet, Zach, and Schmidt, who belonged to the Imperial service, were the chief executive springs and instruments that influenced the councils, and conducted the operations of the war in Germany and Italy.

The consolidation of the different branches belonging to the staff service, under one head, has not only simplified the transmission of orders, but, by giving those orders the utmost rapidity of communication, the movements of the several armies become proportionably quick and decisive. By means of this con-
solidation, the specific purposes to which the several branches of the staff service might be applied, are more accurately determined, and more methodically classed than they could have been in their former state.

An army may now be considered as being composed of divisions, and each division made up of troops and companies of all descriptions, according to the nature, and in proportion to the relative exigencies of the country in which they are to act. These divisions are of course provided with everything that can be required in stores and men, and can act separately, without requiring any other succour, than what has been provided for in the different reserves, appropriated for the reinforcement of their several corps or detachments. They are, moreover, so disposed of, that though apparently scattered, they can at any time unite as one body, and be brought into action, without the hazard of confusion. This excellent method appears to have been adopted throughout all armies; but it is more particularly followed, and more scrupulously attended to in the French. It is there alone that a clear and uniform system of staff service may be discovered. Each division has its separate staff, organized and governed in the same manner that the general one is, and only differing in the exiguity of its detail. These subordinate staffs are composed of the smallest possible number of individuals, and are each subject to the orders of a superior officer, whom the French call adjutant; but whose duties, except in actual service, correspond more immediately with those of our deputy quarter-master-general.

All the different details of duty that are necessary for the interior government of the divisions, the discoveries and dispositions that are taken upon the ground, the communications that are made to the Commander-in-chief of the division, and to the quarter-master-general of the army, must, in every respect, correspond with the established distribution,
of the several objects, and minutely agree, throughout all the divisions, with the rules and forms which have been laid down by the general staff.

It is easy to distinguish those objects which are immediately connected with the central point of communication belonging to the general staff, from those which are diversified, and in a manner branch out of the divisional ones. The following table contains an abstract of all the objects that relate to interior or official distribution, discoveries of ground, and to active operations in the field.

The first section contains

Military discoveries. General and special discoveries and distributions of ground. Topographical excursions and views for the purpose of reconnoitring and ascertaining ground; discoveries made upon the enemy.

2d Section.—Openings and facilities of progress for troops upon the route, likewise, for movements of manœuvre, and for castrametation; the marking out positions of attack or defence; the designation of appropriate quarters and cantonments, and the establishment of hospitals and magazines.

3d Section.—Stations; police for the interior government of troops in quarters; inspection and examination of guides; waggon train; forage parties; scouts; equipages; baggage and convoy; postage of letters.

4th Section.—Office of inspection in general; states of situations and quarters, pay, clothing, internal police and discipline; drill and instruction of troops of all descriptions; councils of war; and courts martials.

5th Section.—Adjutant-general's office, from whence general orders are issued for the movement of troops.

6th Section.—Office of communication and correspondence: 1. With the minister at war.

2. With the intendant, or director-general of the army.
3. With the Generals commanding divisions; with the heads of their several staffs; and with the Generals commanding the artillery and engineer departments.

4. With the governments and persons in power belonging to the countries which may be immediately occupied by the army.

5. With the staffs that are attached to the armies which lie in adjacent quarters.

7th Section.—The topographical office, in which the charts of countries, &c. are deposited, and where the minutes are kept relative to position and locality.

8th Section.—Functions which are immediately personal, and belong to the secretariyship of the general staff; the opening of packets; dispatches with explanatory reasons and instructions (if they be found necessary) to the several sections; communications direct with the Commander-in-chief; the formation and distribution of the army; orders and instructions respecting the stations, &c. of the troops, and of the several Generals commanding them; the management of the secret correspondence relative to the movements and designs of the enemy; the dispatching officers belonging to the secret correspondence, and of the necessary couriers and mounted orderlies; and finally, the vouchers for extraordinary disbursements.

By the assistance of a table of this sort, in which the several objects would be explained under their appropriate titles, all the relative duties of the staff of an army might be arranged and distributed, according to the exigencies of the service, and a perfect theory be formed that would minutely correspond with every branch of practice. In order to render such work truly useful, it would be necessary to bring forward all the principles, laws, rules, and customs, which are connected with this theory, and to strengthen them by precedents and examples.

We should not have been satisfied with merely
having pointed out the form and method, in which a work so truly classical as this is might be arranged, had not our observations already greatly exceeded our limits. We feel regret in thus abruptly finishing our remarks, after having insensibly been led to treat this important branch of the art of war in a didactic manner. If ever it should fall to our lot to resume these historical essays, and to give an epitome of the events of the two last campaigns; or if we should be bold enough to undertake a larger work, we must necessarily enter into all the details of service, to which our readers have a right to look, after having perused these general outlines.

The nature of staff service is very different from that of other military branches, particularly of such as require a regular education and training; of which description are the artillery and engineer departments. These have certain bounds affixed to their service; their theory rests upon immutable principles, with the advantage of being perpetually enriched by new discoveries; in addition to the acquisition of gradual light and improvements, its future practice is constantly aided by experience. But the objects to be acquired, and the labours to be gone through by staff officers, are of a more extensive and more variable kind; they comprehend, in fact, no less than the whole science of war; so that, in proportion as the views of individuals belonging to that service extend, its theory becomes vague, and the application of its rules less fixed and determinate. The very idea of an established doctrine in this branch yields to its desultory nature, and after all our researches, we conclude with this melancholy truth, That there is not any fixed art in that part of the science of war, which, above all others, requires specific knowledge and information.

If, in addition to these reflections, we take a cursory view of the manner in which staffs are generally composed, and of the incessant changes to which they are exposed, from military movements, we
shall perhaps be able to account for the uncertainty and for the indifference to which this important branch of public service is exposed. The greater scope it affords to the natural ambition of individuals, who by favour or personal merit obtain employment, and are thereby enabled to distinguish themselves out of the regular line of promotion, the more readily do they believe, that a certain degree of knowledge, with extreme activity, will be sufficient to answer all the duties it imposes. The uncontrollable and uninfluenced privilege which every Commander-in-chief of an army must invariably possess, of selecting from the different corps such persons as he judges best calculated for his staff, precludes the possibility of a regular school, and of having officers properly instructed in that particular branch of service. It even happens, that when individuals, by intense study, have acquired a considerable degree of knowledge in all the different parts of this intricate service, the application of their talents is only considered as the natural effect of genius, without any allowance being made for the regular method they have pursued; a method, in fact, which is too often looked upon, even by able officers, as superfluous and unnecessary.

At the conclusion of a war, which of all others has been distinguished by the most extraordinary events, and by the multiplicity of which, theory has been replaced by practical experiment, it naturally strikes every thinking man, that certain rules should be established for the preservation of a theory that has been so powerfully proved. It is to the improvement of military education, and to the diffusion of general knowledge during a long peace, but most especially to the spirit of rivalry which has existed between governments, and the consequent emulation which was kept up among the different corps, that Europe stands indebted for so many distinguished characters who rose from the ranks, and whose skill has been of a much more extensive nature, than ancient pre-
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judice' could possibly be aware of. Men of this cast discovered, the instant they got into commands, that, however subordinate their original station might have been, their minds were elevated by notions of true military genius, and equal to the boldest enterprizes. Yet notwithstanding the acquisition of so much practical knowledge, (which can only be secured during the activity of a campaign) the possession of it is by no means permanent. The instant peace is proclaimed, the individuals, who have composed the staffs of the different armies, either retire from the service, or return to the several corps from which they had been taken. The various communications and documents, which must necessarily have been made during the several campaigns, though in some degree preserved, are so much scattered, that no clear system is established, and no regular plan is laid down for the ready government of future staffs. From a conviction of this sort, continues the same author), we have endeavoured to collect all the various objects which may elucidate the subject, and fix, if possible, the principles by which this service may be governed. These observations, however, though perhaps the ground-work of a more enlarged undertaking, must be considered only as so many leading heads for a more ample discussion.

INSTRUCTIONS PREVIOUSLY TO GOING INTO ACTION; BY M. DE PUYSSEGUR.

IN order to prevent the serious consequences that might occur from a difference of opinion and practice upon so material a point as the intervals between battalions and squadrons, in line, my orders are, that each battalion shall occupy a front of one hundred and fifty, and each squadron a front of ninety paces, leaving an interval of thirty paces between each battalion, and eighteen between each squadron in the line. Had we a sufficiency of troops to com-
pose a full line, without intervals, I should prefer doing so, to avoid the danger we incur, in case the enemy attacks in full line, and outflanking our battalions, should close upon and turn them.*

If, in advancing upon the enemy, our first line should happen to close, or press in, so as to be in danger of falling into confusion, let the General or Brigadier, who commands in that part of the line, halt a battalion or squadron, and place it in the rear of the situation it occupied, and so enable the line to recover its order.

As to the second line, if it is formed without intervals, it is better to make it of two lines, with intervals between the battalions and squadrons, equal to their respective fronts, whereby, in case the first line is forced to retreat, a free passage is left for it, and it may rally in the rear of the second line.

Each brigade of infantry is six battalions, and each brigade of cavalry eight squadrons. Let the commandants of brigades advance their alternate, or every second battalion and squadron, † one hundred and fifty paces, which will leave openings through which the first line can pass, if they are obliged to retreat, and rally in the rear; while the second line, advancing on the enemy, may be able not only to keep him in check, but totally to overthrow him, if his order is any way broken in advancing. ‡

I have directed the distance of four hundred and fifty paces to be observed as the interval between the

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* Some maintained that the intervals in the cavalry should be equal to the fronts of the squadrons, and were for extending the intervals in the line of infantry considerably beyond M. de Puysegur's orders.

† The order which is now called (en échecquier) or chequered.

‡ Mons. de Puysegur does not explain whether it was his intention, that in the passage of the first line through the intervals of the second, the rear squadrons and battalions of the chequered order should advance up, and form a full line to receive the enemy; but it is very clear, from other passages in his instructions, that such was his idea.
two lines; it is near enough for it to be able to advance, in the whole or in part, to support the first, in case of necessity, of which the Generals there can judge, as they see what passes before them; and I have ordered this distance, because I consider it the fullest extent that can generally be taken; the ground, for the most part, allowing of not more than three hundred paces, and so large an interval is necessary, in case of interlineations which may take place, when the army has not a sufficiency of ground upon the flank. * In this case, therefore (of the interval between the lines), a discretionary power is allowed; but as to the intervals between the battalions and squadrons in line, it is impossible to be too strict or too exact.

I beseech you, gentlemen, to pay attention to bring up a good line when advancing to the attack; if, in ordinary exercise on a smooth plain, this is found difficult, how much more so must it be in the face of an enemy, with such obstacles as villages, hedges, and ditches intervening, constantly obliging the troops to open and close up again? on which account the leading officers cannot be too precise nor too quick in recovering their points of view. †

Although some recommend the alignment to be taken by the right, I prefer the center; the longer

* Our improved system of tactic, by the introduction of the column in its full use, enables us to defer the formation of our lines, until much nearer the commencement of the action, than it was possible to do at the time M. de Puységur wrote; those interlineations of troops, where the ground did not permit their formation in line, was also an erroneous method, founded on their ignorance of the use of the column in its full extent.

† Some confusion is obviated, in passing these and similar obstacles, if the commandant of the division, in whose front they fall, halts in time; for, by doing so, while the object is yet at a little distance, he not only is a better judge what proportion it is necessary to break off in, but also in what way he can, with most facility, pass it. If he breaks off to do so, the head of his division should pass, breaking, as much as possible, up with the general line.
a line is, the greater difficulty in preserving it, and of course the alignment by the center is so much the easier kept, as it has, in that case, but half the extent of the alignment by the flanks. *

"If the alignment cannot be kept perfect, the center should be rather advanced than otherwise, that, at the halt, the troops may move up to dress; if, on the other hand, the flanks are too much advanced upon the halt, and obliged to face about, in order to regain their alignment, they, in so doing, are forced to a movement very hazardous indeed in the face of an enemy. †

"A line advancing in full front must make frequent halts, the center always halting, or putting itself in motion the first. ‡

"The Generals must be at the center of the corps of troops that they command, unless particular reasons require it otherwise; in advancing, they place themselves before the front, and take care of the order of march; on the signal to charge, they halt in an interval of the line, and keep a watchful eye on what passes. If any battalion or squadron

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* An army ought to be able to dress itself in any given point of its front with equal facility, and to change the points of alignment as ordered, if it is a degree easier to dress by the center; on the other hand, any confusion is more difficult to remedy than where the alignment is by a flank; but various circumstances require that the alignments should be on different points; as, for instance, the points of attack, where partial attack is made, and the whole line at the same time advances.

† If the flanks are too much advanced, it is dangerous to attempt to rectify it in the face of the enemy, as M. de Puysegur describes; the best way is to dress each battalion respectively, and take care to place it exactly parallel, and choose points of view perpendicular to the general line, and then, if necessary, and time permits, face about, or dress back in battalion.

‡ It would be better, in a very long line marching by the center, for the reasons above assigned, that the word Halt should, if possible, go from the flanks towards the center, rather than from the center to the flanks, as the mere unavoidable delay in the repetitions of the word, must give time for the flanks to over-march.
requires assistance, they send support to it; if any have forced the enemy's line to give ground, they throw in additional force there. If any of our battalions or squadrons are totally routed, or thrown into confusion, place yourself before them, and having rallied, bring them back again into the line; and having done so, go wherever else your presence is necessary.*

You know that when, after an action, any body of our troops has put those of the enemy opposite to them to flight, they are very apt to pursue, without reflecting what may be the situation of our army to their right or left. Gentlemen, it will require all your attention to prevent this, more particularly with the cavalry; for it has frequently happened to an army to be victorious in one wing, and, by a hasty pursuit, leave the infantry of the center exposed, while the opposite body of the enemy was yet unbroken, and the battle has been afterwards lost by the army whose wing had the advantage, not turning that advantage to its proper use; never, therefore, pursue the troops in your front with your whole division, but detach a part, in order to harass them, and prevent their rallying; and with the remainder turn upon the flank of the enemy's line: in

* The Generals should be as central as possible; if the troops always saw them at their front, it would be a discouraging circumstance if they happened not to be there; whereas, their coming up in a case of emergency, inspires troops with new spirit. As the firing of artillery and musketry was not brought, in M. de Puységur's time, to that perfection which it is at present, the noise and smoke did not so much interfere with the General's view or powers to convey orders; at present, for both reasons, it is requisite for those who command to keep themselves more clear, except in particular occurrences.

The battalions were formed on a very deep order, and could march but slowly; their fire-arms were unwieldy; the cavalry charged firing carbines and pistols, and reloading; this will account for some parts and passages in M. de Puységur's orders, which there would have been neither occasion nor opportunity for, if the troops of that day had the celerity of ours.
this manner are battles, that are conducted with ability and by rule, won.*

The brigadiers, and commandants of squadrons and battalions, must have these instructions made clear to them before the action; for a General can only be at one place in the line, and during the action there would be no time to do it, and the moment of opportunity would be lost before the orders could be conveyed.

All these things you will explain, Gentlemen, to the officers under you, in the fullest and most explicit manner; for this is the true duty of a General; and do not act like some of that rank, who think it sufficiently fulfilling their duty, to place themselves at the head of a particular battalion or squadron, in action, and fight there like a subaltern.

I further recommend to you to select officers of ability for your aids-de-camp, who are capable of giving your orders clearly, so that they may be easily comprehended by the troops. When you can communicate your orders by writing, do not omit doing so, and in such a manner that those who receive may clearly understand them.

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OF THE DUTIES AND QUALIFICATIONS OF GENERALS.

In the British service the King is constitutionally, and in his own proper right, captain-general. He has ten aids-de-camp, each enjoying the brevet rank of full colonel in the army. Next to his Majesty is the Commander-in-chief, whom he sometimes honours with the title of captain-general. During the expedition to Holland, his Royal High-

* King Charles the First lost a battle which had the most favourable appearance for him, in that manner, by the misconduct of Prince Rupert, which in that one instance proved the ruin of the King's affairs.
ness the Duke of York was entrusted with this important charge.

The natural qualities of a General should be a martial genius, a solid judgment, a healthy robust constitution, intrepidity and presence of mind on critical occasions, indefatigability in business, goodness of heart, liberality, and a reasonable age; for, if too young, he may want experience and prudence; and if too old, he may not have vivacity enough. His conduct must be uniform, his temper affable, but inflexible in maintaining the police and discipline of an army.

The acquired abilities of a General should be secrecy, justice, sobriety, temperance, knowledge of the art of war from theory and practice, the art of commanding, and speaking with precision and exactness; great attention to preserve the lives and supply the wants of the soldiers, and a constant study of the characters of the officers of his army, that he may employ them according to their talents. His conduct appears in establishing his magazines in the most convenient places; in examining the country, that he may not engage his troops too far, while he is ignorant of the means of bringing them off; in subsisting them, and in knowing how to take the most advantageous posts, either for fighting, retreating, or shunning a battle. His experience inspires his army with confidence, and an assurance of victory; and his quality, by creating respect, augments his authority. By his liberality he gets intelligence of the strength and designs of the enemy, and by this means is enabled to take the most successful measures. He ought to be fond of glory, to have an aversion to flattery, to render himself beloved, and to keep a strict discipline and a regular subordination.

The office of a General is to regulate the march and encampment of the army; in the day of battle to choose out the most advantageous ground; to make the disposition of the army, to post the artif-
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lery, and, where there is occasion, to send his or-
ders by his aids-de-camp. At a siege he is to cause
the place to be invested, to regulate the approaches
and attacks, to visit the works, and to send out de-
tachments to secure the convoys, and for foraging
parties.

In the German armies, and among the sovereigns
of the North, there are certain Generals of cavalry,
and others of infantry, who take rank of all lieu-
tenant-generals. Those belonging to the infantry in
the Imperial service, and who are of this descrip-
tion, are called general field zugmeisters. In Rus-
sia they bear the titles of Generals in chief; of
which class there are four belonging to the armies of
that empire, two for the infantry, and two for the
cavalry. They are only subordinate to field-mar-
shals; which title or dignity is the same in Russia
as was formerly that of marshal of France.

In the two Imperial armies just mentioned it is
usual for Generals, Lieutenant-generals, and Major-
generals, to take their routine of duty, and rise pro-
gressively in the infantry or cavalry corps, to which
they were originally appointed, until they arrive at
a chief command; whereas in France (according to
the old military system of that country, and accord-
ing to our own in England) a major-general might
be employed to take the charge of either infantry or
cavalry, without any regard being paid to the par-
ticular line of service in which he was bred.

Whatever opinion we may be disposed to enter-
tain of the troops of the Ottoman Empire, (and we
have recently had some experience of their manner
of fighting, especially at St. Jean d’Acre, which was
preserved by a handful of British seamen and ma-
rines) we shall wave our own private sentiments on
the subject, and give the following curious account
of their Generals, as faithfully extracted out of a
French work.

The Turks, observes that author, have likewise
good Generals. They possess experience, because
from their earliest infancy they become inured to arms; because through the different stages of acknowledged service they rise by degrees; and because their empire being very extensive, it is necessary that they should over-run several provinces for its protection, and be almost constantly engaged in skirmishes or battles. These, at least, were the original principles upon which the military code of that country was established. But abuses, the natural consequences of corruption, have since crept in amongst them; for there have been persons suddenly raised from subordinate employments under the Porte to the supreme command of armies. The primary cause of this abuse is to be found in the luxury and effeminacy of the Grand Signiors, who are become careless of the Mahometan laws, and never go to war in person.

The acknowledged valour of the Turkish Generals may be attributed to the following causes. To a constitution which is naturally robust, to a practical knowledge of war, and to habitual military exercises. To these may be added the confidence with which they are inspired by the recollection of former victories; but they are influenced above all, by the secret dictates of religion, which holds out eternal happiness to those who shall die in battle, and which teaches them to believe, that every Turk bears written on his forehead, not only the hour of his departure from this earth, but the manner of his removal.

A Turkish General possesses a power as absolute and uncontroled as that which was entrusted to the dictators of the Roman republic. He has no competitor, or equal, in the charge he holds, no assistants or colleagues with whom he is directed to consult, and to whose assent or dissent, in matters of consultation, he is to pay the least regard. Not only the army under his command, but the whole country into which he marches, is subject to his orders, and bound implicitly to obey them. Punishments and re-
wards are equally within his distribution. If an authority so absolute as this be considered in the light of executive effect, nothing most unquestionably can so readily produce it; for the tardiness of deliberation is superseded at once by a prompt decision; before which all sorts of objections, and every species of jealousy subside. When a project is to be fulfilled, secrecy is the natural consequence of this arbitrary system, and rational plans are not interrupted by a difference of opinion, by prejudice or cabal.

General de bataille, or general-major, is a particular rank or appointment, whose functions correspond with those of a ci-devant marshal of France. This situation is entrusted to a general officer, and is only known among the armies of Russia, and some other northern powers. He takes precedence in the same manner that our major-generals do, of all brigadier-generals and colonels, and is subordinate to lieutenants-generals. The rank of brigadier-general is only known in Russia, England, and Holland. It does not exist in Austria or Sweden.

A lieutenant-general is the first military dignity after that of a General. One part of the functions belonging to lieutenant-generals is to assist the General with counsel: they ought therefore, if possible, to possess the same qualities with the General himself; and the more, as they often command armies in chief, or succeed thereto on the death of the General.

The number of lieutenant-generals have been multiplied of late in Europe, in proportion as the armies have become numerous. They serve either in the field or in sieges, according to the dates of their commissions. In battle the oldest commands the right wing of the army, the second the left wing, the third the center, the fourth the right of the second line, the fifth the left wing, the sixth the center, and so on. In sieges the lieutenant-generals always command the right of the principal attack.
and direct what they judge proper for the advance-
ment of the siege, during the twenty-four hours they
are in trenches, except the attacks, which they are
not to make without an order from the General in
chief. Lieutenant-generals are entitled to two aids-
de-camp.

A Major-general is the next officer to the Lieute-
nant-general. His chief business is to receive orders
from the General, or in his absence from the Lieute-
nant-general of the day; which he is to distribute
to the brigade-majors, with whom he is to regulate
the guards, convoys, detachments, &c. On him the
whole fatigue and detail of duty of the army falls.
It is the major-general of the day who is charged
with the encampment of the army, who places him-
self at the head of it when it marches, who marks
out the ground of the camp to the quarter-master-
general, and who places the new guards for the safety
of the camp.

The day the army is to march, he dictates to the
field-officers the order of the march which he has
received from the General, and on other days gives
them the parole.

In a fixed camp he is charged with the foraging,
with reconnoitring the ground for it, posting the es-
corts, &c.

In sieges, if there are two separate attacks, the
second belongs to him; but if there be only one, he
takes either from the right or left of the attack, that
which the lieutenant-general has not chosen.

When the army is under arms, he assists the lieu-
tenant-general, whose orders he executes.

If the army marches to an engagement, his post is
at the head of the guards of the army, until they are
near enough to the enemy to rejoin their different
corps; after which he retires to his own proper post;
for the major-generals are disposed in the order of
battle as the lieutenant-generals are, to whom, how-
ever, they are subordinate for the command of their
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divisions. The major-general has one aid-de-camp and one brigade-major.

A brigadier-general, in the British service, is the next in rank to a major-general, being superior to all colonels, and having frequently a separate command. Brigadier-generals are not entitled to aids-de-camp, but they have each one brigade-major. Several brigadier-generals have been made during the present war, in order to render the distribution of line-officers more effectually beneficial to the common cause, by investing them with commands superior to the militia and volunteer establishments.

A General of a district is a general officer who has the charge and superintendence of a certain extent of country, in which troops are encamped, quartered, or cantoned. He is entitled to have three aids-de-camp and one brigade-major.

He receives reports, &c. from the major-general, respecting the troops in his district; reviews and inspects them, likewise orders field-days of the whole brigaded, or by separate corps, when and in what part he pleases; making the necessary reports to the war-office, commander in chief, &c.

When England and Scotland were divided into different districts, each district under the immediate command of a general officer, it was found necessary, for the dispatch of business, to establish an office, which should be solely confined to brigade duties. The first brigade-major-general was appointed in 1797. At that period all orders relative to corps of officers, which were transmitted from the Commander-in-chief to the Generals of districts, passed through this channel of intermediate communication.

By the last general regulations, it is particularly directed, that all general officers commanding brigades, shall very minutely inspect the internal economy and discipline of the several regiments under their order. They are frequently to visit the hospi-
tals and guards. On arriving in camp, they are never to leave their brigades till the tents are pitched, and the guards posted; they must always encamp with their brigades, unless quarters can be procured for them immediately in the vicinity of their camp. General officers must not at any time change the quarters assigned them, without leave from head quarters.

All general officers should make themselves acquainted, as soon as possible, with the situation of the country near the camp, with the roads, passes, bridges, &c. leading to it; and likewise with the out-posts, that in case they should be ordered suddenly to sustain or defend any post, they may be able to march without waiting for guides, and be competent from a topographical knowledge of the country, to form the best disposition for the service. They should instruct their aids-de-camp in these particulars, and always require their attendance when they visit the out-posts.

All general officers, and others in considerable command, must make themselves thoroughly acquainted with the nature of the country, the quality of the roads, every circuitous access through vallies or openings, the relative height of the neighbouring hills, and the course of rivers, which are to be found within the space entrusted to their care. These important objects may be attained by maps, by acquired local information, and by unremitting activity and observation. And if it should ever be the fate of a country, intersected as Great Britain is, to act upon the defensive, a full and accurate possession of all its fastnesses, &c. must give each general officer a decided advantage over the commanding officer of an enemy, who cannot have examined the ground upon which he may be reduced to fight, and must be embarrassed in every forward movement that he makes. Although guides may serve, and ought always to be used in the common operations of marches, there are occasions where the eye and
intelligence of the principal officers must determine the movements of troops, and enable them to seize and improve every advantage that occurs as the enemy approaches.

General officers on service abroad, or commanding districts at home, may appoint their own aids-de-camp and brigade-majors. The latter, however, are to be considered as officers attached to their several brigades, not personally to the officers commanding them. The former are their habitual attendants and domestic inmates. In the selection of aids-de-camp and brigade-majors, too much attention cannot be given to their requisite qualifications; and that General would not only commit an act of injustice against the interests of his country, but deserve the severest censure, and displeasure of his Sovereign, who, through motives of private convenience, family connection, or convivial recommendation, could so far forget his duty as to prefer an inexperienced stripling to a character marked by a knowledge of the profession, a zeal for the service, and an irreproachable conduct.

In the day of battle the station of a General is with the reserve, where he remains so situated, that he can see everything which is going forward; and by means of his own observation, or through the communications of his aids-de-camp, is enabled to send reinforcements, as the exigencies of the conflict may require.

SHOULD GENERALS IN CHIEF BE YOUNG MEN?

The system of placing young men only at the head of the army, seems at first sight highly commendable. The apparent insufficiency of the science of war, the supposition that bodily strength constitutes the most indispensable quality of a warrior, and the poetical image we form of a hero, which a youth answers much better than a man in years, inclin
most persons to give young men the preference on this head. Nay history itself seems to support this opinion, by a variety of striking examples. Great and brilliant exploits are mostly achieved in the spring of life. Alexander was not thirty years old, when he conquered half the globe known in his time; the conqueror of Carthage had not completed his twenty-fourth year; the great Condé was still younger, when he obtained the most glorious of his victories; and in our own time, we have seen very young Generals defeat the most celebrated warriors in Europe. We have seen our own countryman, General Wolfe, storm the heights of Quebec, and fall gloriously, in the midst of victory, at an early age.

Yet on maturely weighing the true complexion of the case, age seems preferable to youth. In the autumn of life, the mind, completely formed, compares and combines all the experience it has made, all the knowledge it has collected, and possesses that firmness and perseverance, without which no important designs can be accomplished. Further, on comparing the different qualities of youth and age, with the present mode of warfare, with the organization of our armies, and the nature of our governments, we shall find that it is most advantageous for our state, that the command in chief be committed to aged officers in preference to young men.

The supposed superiority of youth rests on the supposition that, at that early period of life, man is urged on to action, not only more forcibly, but by a greater variety of passions. A young man, we are told, is braver than a man in years. In proportion as bodily strength decreases, we become more timorous; all our enterprises bear the marks of weakness. The fire of ambition is nearly extinguished; the mind dwells with apprehensive attention on every obstacle it has to surmount. Tutored by experience, and too well acquainted with danger, an aged man attempts no enterprise the success of which is merely doubtful; many enterprises remain, therefore, unattempted.
ed, which would have proved highly beneficial, and others do not succeed, for want of the necessary energy in the execution.

That courage and bravery generally decrease in proportion as we advance in years, cannot be denied, though it admits of many exceptions; but personal valour is, at present, and according to our modern warfare, by no means the principal quality of a Commander-in-chief. Far more important it is for him, in critical or unfortunate situations, to possess that serenity and presence of mind, which render him completely master of all his mental powers. It is well known that the greatest general of our age, Frederick the Great, has been frequently reproached with a want of courage; and it has been publicly contended, that the celebrated Duke Ferdinand of Brunswick, never exposed himself to the least personal danger, since he assumed the chief command of the combined army in the seven years' war. However groundless these charges may be, they prove at least that a General can, deservedly obtain the reputation of a great commander, without being conspicuous for personal valour.

Occurrences no doubt may happen, where the example of the commanding General proves decisive; but these are few, and to set the example in such cases, is by no means an exclusive privilege of youth. Field-marshal Schwerin did, in the battle of Prague, what Bonaparte did near Arcola, and the bridge of Lodi. And is the example of the cool hoary warrior, who, from a lively sense of his duty, seizes the colours, and places himself at the head of his column, less encouraging than that of the ardent youth?

Young men possess more energy, but less experience, than men advanced in years; now, which of these qualities is most necessary for conducting military operations? We should think the latter. The issue of a battle chiefly depends on the previous arrangements and dispositions of the Commander-in-chief; as soon as the attack begins, most of the springs.
of the machine slip; as it were, out of his hands. The great advantages of experience are therefore obvious. In the battle of Kesseldorf, the Saxon troops were defeated, from too much energy being displayed by their commander. The faults of a plan, it is true, may sometimes be corrected by the vivacity of the execution: a proof of which we find in the storming the bridge of Lodi; but want of experience cannot be supplied by any energy upon earth. If energy alone were sufficient, the flower of the Swedish nation would not have bit the dust near Pultawa. Nor is it any ways clear, that energy and vigour are incompatible with an advanced age. The great opponent of Turenne was stricken in years. Laudon displayed more energy in the last war against the Turks, than the rest of the Imperial Generals put together.

The knowledge of men, that indispensable quality of a Commander-in-chief, cannot be acquired but by experience, and will therefore hardly be possessed by a young man. The General-in-chief cannot be everywhere; he cannot, nor should he do everything himself. Heroes, such as are pourtrayed by Ariosto and Tasso, will do well to excite our admiration in an epic poem, but have no existence in the real world. A General-in-chief needs assistants, who not only execute his orders, but also supply his place, where he cannot judge and make dispositions himself, and assist him with their advice. The choice and appointment of these assistants require, that a correct judgment be formed by the Commander-in-chief on their sentiments, abilities and talents, and the capacity of forming judgment cannot be acquired but by long practice.

There is no profession which demands more intense and constant application and study, than that of a General. He should possess a thorough knowledge of all the different branches of the military art; not only because he is to direct the movements and operations of all the various sorts of troops under his command, but also on account of the intimate connection which
subsists between the different parts of the science of war. This wide extent of that science is not generally acknowledged. The necessity and utility of studying it in a methodical manner, have been frequently questioned in modern times, and so many imperfections and contrarieties have been discovered in the military art, that it would seem the issue of warlike operations is, in the judgment of these critics, the mere sport of chance. But no intelligent military man will be ready to subscribe to this opinion, nor deny the great advantages which a General can derive from a thorough knowledge of all the branches of the military art. Close study of Grecian tactics led Frederick the Great to the idea of refusing the wings on forming an attack; by which he obtained decisive advantages over his enemies.

From these considerations it seems evident, that in general aged and experienced Generals, not young men, should be placed at the head of an army. But if in a monarchical state the Sovereign is himself able to take the command in chief of his army, the troops will undoubtedly, under his orders, do more, whatever may be his age, than under any other General whatever. To command his armies seems the principal destination of a Sovereign. His honour, his duty, his interest, all call upon him to fulfil this destination. Is there any duty which can be more important for him than to defend his subjects? It will perhaps be objected that all Sovereigns are not able to command armies; but in this case a Monarch will always find Generals who serve under him, and on whose advice he can rely. In a military point of view, inconveniences, no doubt, may arise from this arrangement; but they are far outweighed by the great political advantages arising from his presence at the army. As no projects can be carried into effect but after they have received his sanction, the execution of them will be greatly accelerated by their being immediately proposed to him for approbation. He holds in his hands, as it were, every spring of the state, and can
therefore use and employ it, when and how he chuses. His presence also prevents dissensions among the Generals, which have so often proved extremely pernicious, and animates the troops. The immense advantages which the French armies under Louis XIV., the combined army under George II., the Prussian armies under Frederick the Great, and the Austrian armies under Joseph II. derived from the presence of their Sovereigns, are too well known to be here detailed.

These advantages are also attained, if a Prince or relation of the Royal Family be entrusted with the command in chief of the army. As such, a commander has immediate access to the Sovereign himself; many resources will be at his disposal, which, under other circumstances, pride, or selfish views would obstruct; nor has he so much to dread court intrigues and cabals, as another General. The alliance of Duke Ferdinand of Brunswick with our Royal Family was a circumstance highly favourable for that great General, who, notwithstanding his eminent talents and abilities, would otherwise have hardly been able to oppose to an enemy far superior in numbers, any efficacious and successful resistance, with an army composed of such a variety of troops of different nations as that under his orders.

THE ORIGIN AND PROGRESS OF CORPS OF LIGHT INFANTRY.

THE first formation of Light Infantry appears to have been about the year 1656. In the American wars they were particularly useful; and the mode of fighting which the American nations pursued, evidently shewed the necessity of such a corps. For until light infantry were established, a regular army was never safe on its march, being always harassed and dispirited by the irregular troops of the enemy. To obviate these difficulties, the British Generals
selected the most enterprising officers, and the most active of the privates, with the appellation of *Rangers*; by these means they produced the desired effect; they engaged the enemy in his own way, opposed light troops to light troops, repulsed him with advantage, secured the movements, and facilitated the operations of the army. The success of these troops gave rise to the formation of a light company in every regiment.

After the peace of 1763, the light companies were all reduced; but in the year 1770, they were again selected; and in 1774, seven light companies were formed into a battalion, at Salisbury, by his Majesty's orders, to practise a set of manoeuvres invented by General Howe. These manoeuvres may be seen by referring to Williamson's *Elements of Military Arrangement*, a book which is now become very scarce.

During the late war, in 1798, a brigade of light infantry, consisting of a detachment of horse artillery, two troops of light horse, two companies of the line, and eleven companies of the militia regiments, then serving in the Eastern district, were formed by the late General Viscount Howe, and by his Majesty's orders were placed under the command of Colonel William Scott, late of the 80th regiment of foot.

This brigade, after being reviewed by General Howe, was encamped near the sea, at Little Holland, in Essex; where the manoeuvres were practised.

With regard to the services of light infantry, they are of the utmost utility, and may be ranked as next to those of the riflemen: they conceal from the enemy the most important manoeuvres of a battalion. As the forerunners of an army, light infantry are vigilant night and day, and alert in the extremest degree: they are accustomed to the opposites of concealment in ambush, and exposure in open plains; have double the advantage of a battalion, from the excellent simplicity of their manoeuvres. In the open
plain they can act as a compact body; in coppices and woods, as light troops; and in the line, as regulars: they can pursue their course with order and regularity over steep hills; and rugged precipices, and through woods and thickets relying upon the activity and gallantry of their files; they seize upon elevated positions and important posts, with a rapidity peculiar to themselves.

Depending upon light infantry, an army has its front, flanks, and rear, secured against a surprise from the enemy. The mode of fighting of the light infantry is loose and desultory. They can stop the progress of an army, and defeat the purposes of the cavalry, by their quick and irregular manner of firing. When an army advances in the presence of an enemy, the light infantry are in front; retreating, they are in the rear; foraging, they protect; landing, they are the first to jump out of the boats; embarking, they are the last to leave the shore. The most perfect friendship should subsist among light infantry. If possible they should be permitted to choose their own comrades; for in a hilly and inclosed country they are frequently so extended as to lose sight of their commanding officer; they therefore depend much upon unanimity, prior instructions and their own judgment. As the system and service of light troops, differ materially from the regular regiments, it is essential that a light infantry company should be composed of the most active men of a battalion; and to illustrate this, the following citations are made from valuable works—*" The light infantry presents a closer combat than the riflemen. It occasionally meets the enemy with main force, though applied in a desultory and irregular manner. The requisite qualities of this class of soldiers, besides good wind and long-endurance of quick movements on irregular grounds,

* A Systematic View of the Formation, Discipline, and Economy of Armies, by Robert Jackson.
often connected with a light body, and a long fork, are a correct and ready knowledge of the aspects of ground and position, a mind of enterprise, a bold and daring courage—ardent in pursuit of glory. The military instruction, which qualifies for the proper exercise of this part of military duty, consists in a judicious management of movements, and firings with aim in all variety of ground and position,—matured by a knowledge and correct estimate of effect in all the variety of circumstances which occur.

"The mode of action, among the light class of troops, appears to be irregular; but it has its own rule of order. It advances; retreats; occupies positions rapidly; maintains them for a given time, and given purpose. In short, it meets all the irregular presentations of the enemy in so far, that the battalion, which possesses the great mechanical power of war, is allowed to approach to its just point of attack without annoyance, and without the necessity of accelerating its movements; a cause which produces agitation in the frame of the individual, disturbs the steadiness of the hand, and necessarily diminishes the certainty of the direction of the missile force.

"Besides the service which the light infantry can perform during the campaign, they may also be employed to great advantage in a day of battle; first, because, it is often necessary to have infantry posted upon the extremity of the wings of the cavalry, light infantry ought, of course, to be posted on them, as neither belonging to the lines, nor destroying the order of battle.

"Secondly, they may also be placed in another position. There is scarcely any battle fought, but where the first advantages on either side depend on being possessed of a defile, hollow, wood, or some other post. The care of these posts to all appearance

* Count Turpin's Art of War,
cannot be entrusted to any troops fitter for the purpose than these, who, without more bravery than others, are yet more accustomed to action, as they seldom pass a day without meeting the enemy. By custom soldiers grow habituated to action, and familiarised to danger: it may be observed, that in sieges they are less anxious for their safety at the second than at the first; and at the third than at the second; therefore light troops, who are continually skirmishing with the enemy, grow accustomed to every danger, and consequently fire quicker than other troops. On the other hand, what may not troops be expected to perform, who daily expose themselves, unassisted, to every service that offers; when they see themselves supported by pickets and grenadiers? If, notwithstanding all their resolution, they are obliged to retire, their retreat, which, by their continual fire, proves generally bloody to the enemy, makes no ill impression on the army; it being their custom both to retire whenever they find a force superior to their own, and rally as expeditiously, and return to the charge when circumstances require it: on the contrary, when the grenadiers or battalions are seen to fly or give ground, the courage of the troops will be depressed by such a check being given to the flower of the infantry, that of the enemy raised, and the whole army discouraged in such a manner as may probably end in its entire defeat.

"It is true that light troops are very useful in the field, as they are the only troops calculated for skirmishing; and covering the infantry and cavalry belonging to the foraging parties and convoys; they also clear the march of an army, guard the troops from surprises, and exempt the cavalry and infantry from many fatigues they must necessarily undergo, if they were employed on the services performed by the light horse and light infantry;* in

* "The only difference between the duty of light infantry and light horse, during a campaign, is, that these last can marc

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Short, it is necessary for an army to be provided with them at all events, without considering whether the enemy have any or not. If an army is furnished with light troops, the General can oppose them to the enemy's; if the enemy is destitute of them, his cavalry and infantry will be continually harassed and fatigued in such a manner, as to be very little able to act offensively.

"It is very requisite for an officer of light troops, to obtain a thorough individual knowledge of the men under his command, that he may employ them according to their intelligence and courage.

"One serjeant, corporal, or private, will answer better for reconnoitring openly the enemy, that is, for approaching him, so as to be able to give a tolerable account of the post which he occupies, and of his force.

"Another will be better employed as a scout, or in watching the enemy's motions without discovering himself; and another will be found useful by his manner of questioning the peasants, and of getting from them the best information about the different regiments and uniforms, and the name and nature of the places where they lie; how far they send their patroles; their way of guarding themselves; the abundance or scarcity of provisions, forage, &c. &c. among them.

"Another will be better calculated for an ambush, and have the necessary cunning for taking prisoners without compromising himself.

"Others are subject to infirmities, amongst which those of the sight must be particularly noticed; and even among them, some who see well in the daytime are almost blind at night. Some old soldiers

with more facility and expedition to whatever part they are ordered; in other respects they equally contribute to the security of an army, and, by joining, shelter themselves from every sort of danger: nothing can stop them, and they are in a manner certain of succeeding in whatever enterprise they undertake."
have the genius of resources, and having observed some situation or passage, may be able to give good advice, which ought to be turned to advantage.

"And as some men are naturally awkward, and easily alarmed, it is very important to know them, in order not to employ them where they might communicate their fears.

"All those different characters may be easily found out by conversing with them, and chiefly by attending to their reports."*

Light infantry are a body of active, strong men, selected from the aggregate of battalion companies, and made up of the most promising recruits that are occasionally enlisted.

When the light infantry companies are in line with their battalions, they are to form and act in every respect as a company of the battalion; but, when otherwise disposed of, they may loosen their files to six inches.

The open order of light infantry is usually two feet between each file.

The files may be extended from right, left, or center; in executing it, each front rank man must carefully take his distance from the man next to him on that side from which the extension is made.

* If the reader is desirous of obtaining a full and authentic account of the duties of light infantry in the field, he should study the following useful books upon the subject, from which he may obtain all the information he can wish, viz.

Cooper's Practical Guide to the Light Infantry Officer.
The Regulations of Riflemen and Light Infantry.—Published by Authority.

Otway's Turpin's Art of War.

General Jarry's Instructions concerning the Duties of Light Infantry in the Field.

Military Instructions from the late King of Prussia to his Generals.

Ehwald on the Duties of Light Troops.

Baron Gross's Duties of an Officer in the Field—with some few others.
rare rank men conform to the movement of their file leaders.

When light infantry men fire in extended order, it is to be a standing rule, that the two men of the same file are never unloaded together; for which purpose, as soon as the front rank man has fired, he is to slip round the left of the rear rank man, who will take a short pace forward, and put himself in the other's place, whom he is to protect while loading.

The extended order of light infantry varies according to circumstances and situations. They may sometimes loosen their files to three times the distance of open order. But the general rule is to allow convenient intervals for the rear rank men to slip by, and return after they have fired.

All movements of light infantry, except when firing, advancing or retreating, are to be in quick time.

The officer commanding the company will be on the right, covered by a sergeant, the next on the left also covered by a sergeant, and the youngest officer in the rear. In extended order, the posts of the officers and sergeants is always in the rear at equal distances.

In marching by files the officer commanding leads; by divisions, each officer leads one. The supernumerary officer, if there be one, is in both cases, with the officer commanding, ready to obey any directions he may receive from him.

The arms of light infantry in general will be carried sloped, and with the bayonets fixed. Flanking or advanced parties, however, or parties in particular situations, may carry them trailed, and without bayonets, for the purpose of taking a more cool and deliberate aim.

When the light infantry is ordered to cover the line to the front, the division will move from their inner flanks round the flanks of the battalions, and when at the distance of fifty paces, the leading flanks will wheel towards each other, in order to meet op-
OF CORPS OF LIGHT INFANTRY.

Post the center of the battalion, opening their files gradually from the rear, so as to cover the whole extent of the battalion.

The files are not to wait for any word of command, but to halt and form themselves. In this position, and in all positions of extended order, the post of the officer commanding is in the rear of the center, and the movements are to be regulated by the company belonging to the battalion which governs those of the line.

Light infantry men, like hussars, are frequently detached to act as scouts on the flank, in the front, or with the rear guard of the body of troops to which they belong. They then acquire the appellation of skirmishers, and, being previously told off for that specific duty, they advance and form in the front in rank entire; which is effected by each man from the rear rank placing himself on the left of his file leader. The rank entire may be resorted to for various purposes during the movements of one or more battalions, since it may serve not only to cover them from the enemy's observation, but in some cases, especially in foggy weather, will itself appear a larger body than it really is. Too much attention cannot be given to the organization of light troops on foot. They are very properly called the eyes of an army, and ought always to be considered as indispensably necessary.

Of Skirmishing with Light Infantry.

The company, being sufficiently instructed in the springing and manoeuvring, will proceed to skirmish, when one general principle must be observed, namely, that seldom more than one half must be sent forward to skirmish; the other half is to remain formed in the rear, and ready to give support. If a battalion is in reserve, then a whole company may be sent forward to skirmish, as in the advanced guard.

The constituent parts of skirmishing are extension of files, and forming chains; which are usually per-
formed by detachments, for the protection of foraging parties; the escorting of convoys; masking the manœuvres of regiments; covering the retreat of battalions; or forming the advanced guard of an army: and whenever there is a body separated from the grand army, a strong skirmishing party is useful, in keeping up the communication, and covering the advanced parts belonging to that separate body.

**Skirmishing with the Right Platoons in Front.**

The caution being given for the right platoons to skirmish in front of the company, the bugle will sound the skirmish; when finished, the first and second sections move briskly forward fifty paces, when the second section is halted; the first section advancing sixty paces further to the front, when they extend themselves to the left so as to cover the whole company; the third and fourth sections remain as a reserve. When the signal to march is given, the whole move forward in ordinary time, taking great care to preserve their proper intervals; at the signal to commence firing, the skirmishers in front conduct themselves in the same manner as firing in advancing. If the signal to halt is given, the whole corps halts, and the skirmishers cease firing, but keep their ground; on the signal for retreat, the whole corps, except the skirmishers, face to the right-about, and retires in ordinary time, paying the greatest attention to the preservation of distances. The first section, which has been pushed on in front in extended order, conducts itself in the same manner as in firing in retreating. On the signal to halt, the whole halts, fronts, and the skirmishers cease firing. At the signal to close, the first section, which has extended itself in front to skirmish, falls back on the second section, which remained formed in its rear. At the second signal to close, the advanced sections retreat in quick time, and take their places in the line.
Skirmishing with the Left Platoons in Front.

When left platoons advance to skirmish, they proceed exactly the same, observing that the fourth section is pushed on in front, and extends to the right, so as to cover the whole company.

The officers of the detached platoons must direct their principal attention to combine, in such a manner, the movements of their half platoons and skirmishers, with those of the battalion or corps, as always to keep parallel with them, and to preserve the proper distances of the extended order they have been directed to take. The captain is with the reserve, the second lieutenant with the skirmishers, and the youngest officer with the second or third section, whichever advances.

If the whole is to incline to the right, the bugle will sound the incline to the right; the skirmishers will then wheel to the right, and the other platoons will file in the rear of them, observing the same positions and distances. Inclining to the left, is the reverse.

Retreating across a Plain.

In retreating across a plain, the company will be ordered to face to the right-about, leaving the right and left hand files of each section fronted; at the sound of the retreat, the company will retreat, and the right and left hand files* will immediately extend themselves so as to cover them, and follow the company at thirteen paces distance†; the intervals

* A retreat is much better performed by alternate companies, in a battalion, or by alternate sections, in a company, than by right and left hand files acting as skirmishers, because every moment, where telling off is required, must be inconvenient; it takes up much time, occasions delay, and often produces confusion: whereas this manner of retreating by alternate companies, or sections, requires no calculation; and the firing is executed with the greatest exactness.

† The distances of skirmishers, as here laid down by authority, are seldom adhered to, being found very inconvenient, ast he
left by the skirmishers must be carefully preserved. The skirmishers will fire and load, retiring, and without halting. At the signal to halt, the company fronts; and, at the sound of the retreat, the skirmishers fall in their places in the line.

Retreating, leaving the Center Division in Front.

The first and third divisions will go to the right-about, at the sound of the retreat: the second division will extend from the center and follow, firing retreating, at thirteen paces distance.

To form the Chain.

The caution being given that the company will form the chain, and the fourth section remain as a reserve: the bugle will sound form the chain, when the first, second, and third sections will advance in line fifty paces, and extend themselves to the left in double files, at ten paces distance from each other.

At the signal of the bugle to march, the chain moves forward, taking care to preserve their distances. The section of reserve follows at the distance of fifty paces, in order to give support to any part of the chain that may be attacked.

On the signal to halt, the whole halts and dresses. If the chain is to fire, the signal is made to commence firing; on which the right furlong of each division of the chain takes three paces to the front and fires, falls back again into his place and loads; the other three men perform the same singly, and by this means the fire is kept up, without intermission, till the signal is made to cease firing.

At the signal to retreat, the whole chain faces to the right-about, and retreats in ordinary time. On proximity to the reserve will not allow time sufficient for each party to execute their movements with neatness and precision; besides, in action, the distance of thirteen paces can never be supposed to afford security to the main body, however it may answer the purpose at a review. In general, the distances should be regulated according to the ground and circumstances.
the signal to halt, the whole chain halts and fronts. If it is to incline to the left, it faces to the left; if to incline to the right, it faces and takes ground to the right; or the ground on either flank may be obtained by an oblique movement. On the signal to close, the whole chain closes to the point from whence the sound is given.

To conceal the Formation of a Battalion.

In masking the manœuvre of a battalion, the company will advance in two divisions from its inner flanks to the front of the column to any distance that may be directed; at the sound to extend, they wheel inwards, to cover the same extent of ground as the battalion requires to form the line upon. When they are too close, the signal will be given to close, and the divisions will face outwards, and file to the right and left flanks of the battalion.

Or, the company may advance in subdivisions, and form the chain; the right subdivision to the left, and the left subdivision to the right; at the sound of the close, the divisions close to the points they extended from; and, at the sound of the retreat, they form upon the flanks of the battalion, which will then be in line.

To form the Advanced Guard.*

No body of troops ought at any time to march without an advanced guard; and a communication should be constantly kept up between the advanced guard and the main body. An advanced guard, or a patrole, must detach one or two small parties a little way in its front. From these, flankers are to be sent out, who must examine the country closely on each side. The flankers should keep up a com-

* If the reader is desirous of learning the whole duty of an advanced guard, he should refer to the King of Prussia's instructions to the Officers of his Army; and, although it is there laid down for the cavalry, it will be found equally applicable to the light infantry.
munition with each other, and also with the party from which they are sent; by the operations of which their movements must be regulated. The extent of the precautions to be used must depend upon the intricacy of the country, and the probability there is of the enemy being in the neighbourhood.

At the signal to form the advanced guard, the commanding officer, with the first section, marches in front of the corps, to which he forms the advanced guard, in the day-time five hundred paces; but in the night, or in hazy weather, three hundred only. The second section is detached two hundred paces in front of the first, and a party of a serjeant and six men is pushed on one hundred paces further, which forms the head of the advanced guard. The third and fourth sections are placed three hundred paces to the right and left of the first, and even with it, taking care to preserve, as much as possible, the above distances from it, and detaching one hundred paces forward, in an oblique direction to the outer flanks, a non-commissioned officer and six men, who will again detach skirmishers forward in an oblique direction on their flanks. On the signal to march, the whole advanced guard moves forward; on the signal to halt, the whole halts, keeping the same position; at the signal to close, the serjeants' detachments join their respective sections; at the second close, the second, third, and fourth sections close and form to the first.

When a company is in line by itself, and practices forming the advanced guard, it should first be ordered to form close column of subdivisions, by the right subdivision standing fast; the second subdivision facing to the right, and marching to the rear of the first subdivision. The bugle then sounds form the advanced guard, the rear subdivision faces outwards, by the third section facing to the right, and the fourth section to the left: the first section will stand fast; the second, third, and fourth sections, all step
off at the same time; the second section two hundred
paces to the front; the third and fourth sections
three hundred paces to the right and left of the first
section, and on a line even with it: as soon as they
arrive at their destination and are halted, the officers
and non-commissioned officers will then detach for-
ward, and form their flanks, the skirmishers as has
already been described.

Skirmishing behind Hedges.

Suppose a road bordered by two hedges or other
fences, which the columns of the enemy were ex-
pected to pass; to prevent, or at least impede, their
progress, the light infantry may resort to the fol-
lowing manœuvre. Line the outside of each fence
with light infantry; as the enemy advance com-
mence firing from the right files, and let each file, as
soon as they have fired, retreat behind the left or
rear file, and instantly reload. By this method a
very small body may keep up a constant and haras-
ing fire, and present the most delusive appearance of
strength to the enemy.

Reinforcing Skirmishers.

When a detachment is sent to reinforce a party of
skirmishers, without any immediate necessity for its
forming in a particular place, the best method is for
the detachment to extend itself, and form up directly
between the intervals of the skirmishing party; and
when called in will fall back, and close to the point
from which it extended: if from the left, it will
close to the left; and if the first detachment was sent
from the right, it will close to the right: each party
files outwards, and marches to its original position.

Of Light Infantry acting against Cavalry.

Count Turpin says, detachments form the youngest
officers; they execute in detail what a General does
with an army; therefore it follows that every officer
should qualify himself for all great enterprizes, and
learn dispositions suitable to place and circumstances. In the event of being attacked by cavalry, the greatest presence of mind, with determined resolution, should predominate; and circumspection in the choice of an advantageous situation should also be immediately resorted to; therefore, to avoid this impending danger, recourse must be had to the *square or orb*, the latter of which is thus described by General Jarry, in his useful little treatise on the Duty of Light Troops.

"If light infantry are surprised by cavalry on open ground, it must then be decided at the first coup-d'œil, whether the light infantry can reach the hedge or other cover in time; and if not, they must instantly run from the circumference to the center, to form a round mass †.

"Infantry with bayonets, and formed into a close mass, can always resist a charge of cavalry, especially a charge en fourrageur; for that purpose the men must support and press against each other, from the center to the circumference, without breaking the ensemble. In this situation they have only to present the bayonet to the horses' nostrils, and steadily wait for the charge. The cavalry will soon retire

* The larger the square is, the greater the danger will be, from the probability of its being charged before it can form; for the attack in formation generally proves fatal. A small square is more expeditiously formed, and consequently less liable to be attacked before it is completed.

† A round mass or orb, in tactics, is the disposing of a number of soldiers in a circular form of defence. The orb has been thought of consequence enough to employ the attention of the famous Marshal de Puységur, in his Art of War, who prefers this position, to throw a body of infantry in an open country, to resist cavalry, or even a superior force of infantry; because it is regular and equally strong, and gives an enemy no reason to expect better success by attacking one place in preference to another. Caesar drew up his army in this form when he fought against Labienus. The whole army of the Gauls was formed into an orb, under the command of Sabinus and Cotta, when fighting against the Romans. The orb was generally formed six deep.
beyond the reach of musketry. The infantry will take advantage of their retreat to proceed to some cover, without stopping to fire or load again.

"The true defence of infantry against cavalry is in the use of the bayonet, and in the force of a thick and immovable body of men, pressed together en masse. Horses can neither support nor push each other on; and the force of one horse may be checked by the united power and weight of seven or eight men.

"As from the nature of this duty light infantry is often exposed to be attacked unawares by cavalry, it ought to be practised to form quickly into a round mass, wherever it is threatened with a charge of this kind. Having repulsed the charge, the commander will cause it to march in close column to the nearest shelter."

The following is suggested by Baron Gross:*

"Should circumstances render it impossible for light infantry to avoid being attacked by a body of cavalry, they should be formed into two ranks at close order, and form a crotchet on each wing, in which position they will wait for the enemy, the front rank kneeling down and presenting bayonets; should the enemy advance to the charge, the rear rank only will fire at the instant he is twenty-five paces distance; the front rank will then rise, fire in the face of the enemy’s cavalry, and after that present their bayonets to his horses. It will, however, be much better to form in three ranks when thus opposed by cavalry, and to keep the fire of the third rank in reserve. These remarks are only intended to remind an officer commanding riflemen, or light infantry, of the cautions which are requisite when acting against cavalry; and to evince the necessity of keeping his men within such a distance of each other, that he may be able to re-assemble them in

* Baron Gross, on the Duties of Light Troops.
time, and the propriety of having a reserve behind him to form a third rank, in case it should be wanted."

The disposition for a detachment of infantry retreating in a plain from before cavalry much superior to it, is thus described by Count Turpin:

"Suppose five hundred foot retreating from before a thousand horse; the foot may retreat in a square, the four angles being covered on the outside by grenadiers; these grenadiers should preserve their fire till the horse come so near that they are in danger of being broke in upon, unless they can keep them at a distance by firing upon them. The fire of this square should be carefully managed and given by the platoons, when the horse is within the distance of thirty paces; for if the enemy is permitted to come nearer, the soldier, incapable of reasoning like an officer, is often more frightened at the horse than the man; and being too much confused to present his piece and fire properly, will fall back, and consequently make an opening in the battalion, through which resolute cavalry will not fail to enter; whereas, when the enemy is at thirty paces distant, he is not yet near enough to intimidate the soldier, but is at a proper distance for the fire to have the wished effect. But even suppose for a moment, that the soldier is not frightened at this great body of cavalry coming down upon him, and waits for it till it is almost within reach of his bayonet, in order to make a surer fire, and at the same time to thrust his bayonet into the horse's breast; as it is the nature of a horse when killed to fall forward, or when wounded, to push upon that part from whence the blow came, the soldier is of course obliged to give way, to make room for the killed or wounded horse; therefore if only one horse, dead or alive, gets into the ranks, the square is broken; which is one of the reasons for not suffering the enemy to approach nearer than thirty paces; and the fire, if well directed, will
have its full effect at that distance, and the killed or wounded horses will not be within reach of breaking the square. The reason why the square should not fire by divisions is, in case any troops of horse should remain unbroken, and continue the charge, they will find a fire from every part, which will in all probability at last force them to retire in disorder, to a distance from the square. But notwithstanding, for many reasons abovementioned, the disposition in column is always preferable to that of a square: five hundred foot will form a column sufficient to retreat with safety, and keep up a constant fire.

"If the detachment is stronger in infantry, and the enemy proportionably superior, a column is best, because the column being full, forms a body that must act together, and of which all the evolutions are uniform; an advantage not to be found in a square, as there will be a great void in the center, and one side of the square may march faster or slower than the other three, which may cause an opening at two of the angles, although guarded by grenadiers.

"Suppose a detachment of twelve hundred foot, retreating in an open country, attacked by two thousand horse; the disposition in column is imagined to be the best it can take. This column shall have sixteen men in front, and sixty-two in depth; the remaining two hundred and eight, supposed to be grenadiers, shall be divided into four parts; two of which will support the two flanks at the head, the two others, those of the rear guard: by this disposition it is imagined the infantry will be enabled to make a good retreat. If the enemy should attack but one side, by firing in the manner above directed, he will certainly lose great numbers before he will be able to come near the column; besides, the depth of the column occupying far less ground than the enemy's cavalry, unless he forms himself in four or five lines, the infantry can never be engaged but with the first line. Those in the rear not adding to
the weight of the charge, it must be impossible for rear ranks of cavalry to add to the force; the success of the attack chiefly depending upon the quickness with which the troopers in the front rank charge; thus the column of infantry is stronger in itself than the line of cavalry by which it is attacked.

"If the enemy should attack the two flanks, then the column, by making a motion to the right or left, will be formed in eight ranks on one side, and eight on the other; and if the advanced or the rear guard is attacked, it will then be, the grenadiers inclusive, thirty-four men in front. Thus it appears, that on whatever side the column is attacked, it will be in force, and capable of resisting so superior an enemy.

"The detachment should be caused to observe a profound silence, so that the firings, when ordered, may be executed with the utmost exactness. It is the officer's duty to make the platoons they command obey, and to prevent them from firing till they judge proper; for it is very certain, if the soldiers are left to themselves, they will be firing continually; and the column having thrown away its fire, would present so favourable a moment for the enemy to make the attack, having nothing to fear but the bayonet, that he would scarcely fail seizing the opportunity: but if care hath been taken to preserve the fire, and to fire by platoons* only, it is morally certain that a column in this disposition can retreat safely from before a body of cavalry very superior. If the enemy can be prevented breaking into the column at the first charge, it is very certain his ardour will be greatly abated in the second, and still more in the third, till at length he shall be repulsed with great loss, and the detachments perhaps escape without losing a man."

* Platoon and company are synonymous terms,
Of the Use which may be made of Light Troops in Battle, when they act with other Infantry.

Light troops may act offensively or defensively, whether they be included in the order of battle, or be detached.

The first and most indispensable service upon which they are employed is, before an engagement take place, to advance in front of the army, when it is on its march to attack the enemy, or is merely observing his movements.

We would propose, that the light troops should be placed on one of the wings in the order of battle, or be dispersed among the lines. In either case, whether collectively employed or in desultory order, they cannot fail of being extremely useful.

After having done the duty of advanced posts previous to the commencement of the engagement, they will be stationed, as the service may require, in the order of action. If they should be dispersed about the first line (those on foot with the infantry, and the mounted with the cavalry), they will, of course, begin the battle, spreading along the entire front of the line, and will fire at first with light field-pieces, and then with musketry. The light-dragoons may likewise advance and harass the enemy's cavalry. If the latter should march forward to attack the light-horsemen, these will instantly retreat, dismount, and begin to fire their rifles. The enemy's cavalry will suffer from this mode of attack, as the light troops will be fresh, and can moreover be assisted by other dragoons who may use their sabres.

The light infantry will naturally take advantage of the unevenness of the ground, and shelter itself by intermediate obstacles from the enemy's fire. If the main body should march forward to attack the enemy's line, those light troops which had gone out to skirmish in front, will return, and take their stations in the order of battle. If the enemy should advance, they will fall back upon their own army.
continuing to fire until they get within musket shot of their own troops. After which they will retreat between the lines, or take their allotted posts; and if, by their being in front, the artillery should appear embarrassed, timely notice ought to be given to remove that inconvenience.

During the heat of the battle, the light-dragoons will act in squadrons with the cavalry, and use their sabres.

If the light troops were to be armed with long pikes and covered with shields, they would not only be able to sustain any charge of the enemy, but they might themselves attack his line with more effect than the battalion could, although they did not give a third as much fire. They would, however, make amends for this deficiency by the goodness of their own weapons, and the dexterity with which they would handle them. From these considerations it must be evident, that great advantages might be derived from making use of the light troops in the common order of battle.

They might be employed in covering the flanks of the heavy infantry by posting them, in potence, between the two lines. This disposition would enable the General to make use of other troops elsewhere, without endangering his flanks. For, if the cavalry should be beaten, the enemy would not pursue it vigorously, as its own might be exposed.

Should it attack the infantry, the latter being covered with its shields, and armed with long pikes and bayonets, would be able to make a good stand, and might repel the enemy by a brisk discharge of musketry and heavy ordnance.

If the General were to station his light troops on the wings, for the purpose of outflanking the enemy, his views might be easily fulfilled, and great advantage might be reaped during the action by means of the swiftness of the mounted infantry, and the well combined efforts of the troops on foot. The latter must, of course, preserve their ranks in close order,
and cautiously press upon the enemy until his line be broken. The instant that occurs, detachments of horse and foot must be sent forward to pursue and disperse him in his retreat. If he should receive succour, and turn into action, the detachments will fall back upon their respective corps, who will act according to circumstances, and in conformity to the General's orders.

Light troops may be employed in various ways, independently of the main body. They may be made use of: 1st, To take an enemy in his rear, and to turn his flank; 2dly, To seize upon his magazines and convoys; 3dly, To destroy and break down bridges; and 4thly, To occupy the defiles and passes which he might wish to secure for the purpose of retreating. These different services may be effectually done by light troops, provided they are commanded by active and intelligent officers.

With regard to the first service, namely, that of outflanking the enemy, or taking him in the rear, much will depend upon locality, on the enemy's order of battle, and most especially on the subject proposed.

They must take care to approach the enemy unperceived, and, in order to avoid a defeat, they must keep united, and in the best possible disposition for fighting.

The second, third, and fourth services relate chiefly to the duties of partizans, whose desultory functions we shall have occasion hereafter to notice.

With respect to the fifth employment for light troops, it will consist chiefly in being thoroughly acquainted with the country, in stealing a march upon the enemy, and in acting with the utmost promptitude.

It will be necessary during the heat of an engagement, to detach some light troops for the purpose of getting round the enemy's flanks, and of hovering about his rear. One of their objects would be to
carry off a General, or some of his aids-de-camp, who are intrusted with orders. Something may always be obtained from prisoners. The instant a soldier shall have got possession of any papers, he must immediately deliver them to the commanding officer, who will forward them to the General, should they contain any thing important.

When the light cavalry acts separately, the commanding officer of each squadron will take care to post two small troops behind each wing. These troops will throw themselves into the intervals the instant the charge is made, will endeavour to turn the enemy's squadrons, will pursue them if they give way, and will endeavour to check them, should they have made an impression. The squadrons that advance against the enemy will move off slowly at first, they will next trot, and go full gallop when they get within twenty toises of the enemy. The latter movement must be made with the utmost rapidity. Should a leading squadron find itself abandoned by those about it, it must not think of retreating, for before it could get to the right-about, it would be surrounded by the enemy; the only thing it could do, would be to ride through the opposing troops, which might give it a chance of escaping with less loss. When the enemy attempts to turn a wing, you must either instantly charge him, alter your disposition of line with promptitude and accuracy, or detach some light troops to cover your flank.

There are various other instances that are too numerous to be detailed, in which light troops might be employed to great advantage, when dispatch and vigour are required.

When the battle is over, light troops pursue the flying enemy with the utmost spirit; and if the enemy should have the advantage, they serve to cover the rear guard in its retreat.

We shall now point out (supposing them to be armed with pikes and shields) the most advantageous manner in which light troops may be employed.
This occurs when an enemy has taken a strong position, and it is found expedient to attack him in it. Light corps (being armed with offensive and defensive weapons, which circumstance makes them capable of undertaking the most hazardous enterprises) are in these cases preferable to any others. The following order of battle should be adopted on such occasions:

As large a body of these troops as the nature of the enterprise requires, should be collected in front of the point of attack. The infantry drawn up six deep, with its front and flanks covered by shields, and armed with pikes, should advance in three lines, according to the extent of the front to be assaulted, and in proportion to the resistance which may be expected. Pretty considerable intervals should be left between the different bodies, that the attack may be executed with vigour and alertness, and not perplex the general arrangement of the troops.

When there is little reason to be alarmed at the enemy's ordnance, it would be advisable to march against him in a line formed of several small columns. This line must be supported by two others standing six deep. The artillery belonging to the several corps must be placed in the intervals of the first line; the others will be one hundred paces distant from each other, and will advance in alternate divisions. The dragoons with their swords drawn will follow in one or more lines, and keep close in the rear of the infantry. When the first line arrives within ten paces of the enemy, it will redouble its quickness, and advance with charged bayonets and presented pikes. The second line will quicken its step, form in the intervals of the first line, and charge with it whilst the artillery remains in the rear.

When the two armies are completely engaged, the third line, according to circumstances, must advance to the support of the two first. This line will either extend the wings, or fall upon the enemy's flank, should
it be exposed by the charge which the other two lines have made. In order to accomplish this object to its full extent, a part of the cavalry should join the third line, or should pursue the enemy in a body, if he should give way. In this case the infantry which will have charged in front must be halted, and its different divisions be dressed, preparing to take the enemy on his flank by movements of conversion. Should these movements be made by whole corps, their depth must be so managed, that the front be not too much extended, as the manoeuvre might in that case be rendered intricate. But if the superiority of the enemy should prevent you from driving him back to any considerable distance, the infantry will then endeavour to keep the ground it has gained, and deploy for that purpose. If this cannot be accomplished, the troops must be covered with their shields, and the rear ranks must keep up a brisk fire, while the cannon, which will have been drawn into the line, continues to fire with cartridge.

When an attack of this sort is undertaken at a certain distance from the front of the army, the troops that are next to the light corps must not fail to advance by the march en echelon, in order to preserve the order of battle. By means of this disposition, the General will be more able to derive advantage from the charge, and the flanks of the troops which execute it will be less exposed.

If the attack be made against a body of cavalry, it must be conducted in the manner already mentioned; with this simple difference, that the movements must be made in a more compact manner; the intervals between the corps must be less; and at the

* If, during the march, or charge, any little break should have occurred among the troops, great caution must be observed in correcting the line, lest by too much nicety, you check the fire of your men. Should the enemy threaten the flanks of the infantry, the latter will advance steadily forward, as it is the duty of the cavalry to protect the wings.
onset, when you arrive within a moderate distance, the cannon must be fired as well as the musketry.

Should you act on the defensive, and, as it frequently happens, some part of your line be exposed, it is evident that light troops ought to be employed in preference to any others.

If the ground be calculated for infantry evolutions, the light troops belonging to it must be made use of in the following order: those belonging to the first line must be drawn up three deep, and those belonging to the others six deep, with sufficient distance between the corps, to enable them to form up, should necessity require. The cavalry must always be so stationed as to co-operate with the infantry.

As all attacks are preceded by a very destructive discharge of cannon, especially since the artillery has been so considerably increased, advantage must be taken of the inequalities of the ground to cover your troops. Under these circumstances they are posted either a little in front, or somewhat in rear of the ground which they are to occupy when the two armies meet. If what we have proposed should be found impracticable, they must lie upon the ground, or be drawn out of musket reach.* This must, however, be done in such a manner as to have them always ready at hand whenever the enemy advances to attack.

The first line will, under cover of their shields, pour in a quick and well directed fire. Several pieces of artillery must be planted between the different corps to assist the musketry. If the first line should give way, the second must instantly be thrown into columns,† and must march through the intervals of the first in order to form and vigorously charge the enemy. If there should be a third line, it will follow the second in the order in which it

* Human blood should always be spared as much as possible.
† The flanks must be covered with shields.
stood, and the first will form under the protection of
the last. If the second line which is now become
the first should not succeed in repelling the enemy,
the third having formed column, will charge and be
supported by the first, and so on alternately; each
line, as it is forced to give way rallying behind the
others.

The cavalry in the mean time must watch the
flanks of the infantry, endeavour to turn those of the
enemy, or to harass him and take advantage of his
confusion. If the enemy should give way, the light
troops must pursue him vigorously, provided their
situation be such that they may safely act upon the
offensive, otherwise they must preserve their original
ground.

If the ground on which the cavalry is posted be the
weakest part of your position, some detachments of
dragoons must be added, which will serve to in-
crease the number of the lines, to extend or cover
them. Some corps of infantry must also be distrib-
uted in the intervals, with sufficient space to allow
room for the manoeuvres of the cavalry whom they
are to support.

EXPLANATION OF THE PLATES.

PLATE A.

FIGURE I.

I. represents the first attack which is made by light
troops in a regular engagement.

A. The position of the army.

B. First line of the enemy's army.

C. Light infantry posted behind hedges, and firing at
the enemy.

D. Troops belonging to the light infantry stationed in a
hollow way.

E. The artillery, and another body of light infantry
lying on the ground or covered with their shields, being in
an exposed situation.

F. Dragoons firing at the enemy's cavalry.

G. Some cavalry advancing to support and receive the
dragoons within their intervals, should the latter be pressed.
H. Places where the light troops are scattered in different parties, and in which they form, should the enemy advance to attack the army.

**FIGURE II.**

Represents the manner in which light troops may cover the flanks of the battalions, or heavy infantry.

A. The right wing of the heavy infantry.

B. Cavalry belonging to the right of the army.

C. Light infantry standing in column between the two lines, in order to follow their movements, and to fire upon the enemy’s flanks in cases of necessity.

D. Other light infantry, in a third line, stationed for the same purpose, and to support the two first.

E. Cavalry, defeated by the enemy’s cavalry.

G. Cavalry rallying under the fire of the infantry.

H. Light troops advancing to take the enemy’s cavalry in flank.

I. A part of the cavalry belonging to the second line, advancing to replace the light infantry, C.

K. Part of the second line facing to the rear of the army, to support the infantry, D.

L. Cavalry which is pressed by the enemy but which he dares not follow, lest he should be taken in flank by the cavalry, G.

**PLATE B.**

**FIGURE I.**

Represents the manner in which light troops may be employed for the purpose of turning or annoying the enemy’s flanks, and the use that may be made of light infantry.

A. The enemy’s cavalry drawn up.

B. The cavalry belonging to the left wing of the army, in its order of battle.

C. Light cavalry, in column, at the extremities of the two lines.

D. Offensive disposition or order which this cavalry may assume, when the infantry charges.

E. Defensive disposition or order which the same may take to cover the flanks of the infantry.

F. Disposition which may be made by the light infantry, in order to change briskly from the defensive to the offensive.
Use which may be made of Light Infantry, when neither Party has Cavalry.

G. The troops in echelon, for the purpose of attacking, the infantry on the right wing, H, of the enemy.

H. Light infantry in column, between the two lines, for the purpose of attacking, &c. at the commencement of the action.

K. Light infantry in a third line, for the purpose of supporting and seconding the infantry, L, by advancing towards M.

**Figure II.**

Represents the disposition of light troops, for the purpose of attacking a strong part of the enemy's position.

A. The army drawn up in order of battle.

B. Disposition of the enemy's infantry.

C. Light troops drawn up opposite to the point of attack.

D. Dragoons to support and second the attack.

E. Troops advancing to attack; the neighbouring corps supporting them in echelon.

F. The artillery, which, after having dismounted that of the enemy in the two villages, directs its fire against the point of attack.

G. The ground on which the second line incorporates itself with the first to strengthen its impression against the enemy.

H. Third line of dragoons, so stationed, that they may take advantage of the enemy's confusion, either by dashing into some break of the line, or by taking the broken line in flank, on the right or left.

I. Reserve to support the attacks that are made; or to secure a retreat, should they not prove successful.

**Figure III.**

Represents the disposition of light troops in a weak part of the position.

A. Weak part of the position.

B. First line, standing three deep, and strengthened by the artillery belonging to the three lines of light infantry.

C. Second line, standing six deep, forming column of
Reconnoitring a Post.

In reconnoitring a post, there are two principal things to be attended to, viz. the post itself, and the men who guard it. If it should not be very much in the rear of the enemy's army, it may be reconnoitred either by day or by night, secretly or openly; but if it should be a post of communication with the rear of the army, or in the center of its quarters, you must reconnoitre with few men, with the greatest secrecy, and during the night.

In order to reconnoitre any post thoroughly, such a post being in front or on the flanks of an enemy's army, it would be more advisable to send out a strong detachment, which might examine it in open day, than to attempt secretly to reconnoitre it by night; for in the former case it will be easy, by taking a turn around it, to see perfectly the different parts, and to calculate either its strength or weakness; to gain information of the country which surrounds it; and to choose the place best calculated to facilitate the approach to it, if there should be an intention to attack it. If it be proposed merely to examine it, some place should be discovered convenient for concealing the greater part of the troops, and the smaller number should make their appearance before it, so that those who guard it, observing but a small number of men, might be induced to leave their post, and attack them; which will afford an opportunity of knowing their number and description.

Sometimes upon the front or flanks of an enemy's camp, there are posts, consisting of large open wit-
lages filled with troops, the number of which cannot be exactly estimated; yet notwithstanding, if the General proposes to attack them, it becomes necessary for him to know the degree of resistance they can oppose, and thoroughly to ascertain their positions, that his dispositions may be regulated accordingly.

If a commanding officer of the light troops should be employed in reconnoitring, he should draw near to the post before day, and, if possible, dispose some weak troops of cavalry commanded by intelligent officers, not only to observe and judge accurately of every thing worthy attention round the post, but still further to discover every thing that actually passes within it. The infantry ranged in column upon the avenue should advance, as soon as the day appears, within 300 paces of the post, whilst two or three divisions which precede it, continuing to march, should advance briskly towards it, pushing forward as many as they can.

The small troops of cavalry should advance upon the first fire, and examine the post, its situation, its environs, the number of troops which the enemy ranges in battle upon the border of the village, and should withdraw readily to go and join again at 800 or 1000 paces in the rear of the infantry, which would speedily be pushed; and if the enemy should have many cavalry, he will employ them to surround, or at least to harass in the retreat. Perhaps the enemy may succeed in one of these objects, but the danger of this, as can be proved, is not only inconsiderable, but there are means also of extricating yourself from this difficulty.

There remains still another method of discovering the force which the enemy may have at his disposal in any open village; this is to feign an attack, in order to draw all his troops towards one side, whilst some intelligent officers (followed by three or four horsemen), who shall have turned the village, should introduce themselves by the back ways, and withdraw expe-
Of Ambuscades.

As soon as you are clear of the enemy, collect together the different observations which have been made, and add your own; and from this total extract the detail of information necessary to be communicated to the General.

Of Ambuscades.

As ambuscade is the principal, and ordinary mode employed in the expeditions intended to be here treated upon, it will be previously necessary to make known its dispositions and general principles, that they may be applied to each particular case, as far as circumstances will permit.

An ambuscade is a concealed disposition, near a place or way, by which it is known that the enemy will pass. It is of infinite consequence to procure certain and accurate information; the chief of the light troops, therefore, ought to spare no pains to procure trusty and intelligent emissaries. He should endeavour to conciliate to his interest the inhabitants of the country, by treating them with all possible mildness and humanity, and should compel his troops to observe the same conduct towards them. When the ambuscade is prepared, the troops should conduct themselves, as not to be perceived, and be able to fall upon the enemy unawares, whilst he can use at best but feeble means for his defence.

The ambuscade then is no more than a surprise, regulated according to the nature of the country. It can rarely be employed against considerable numbers, on account of the difficulty of finding places sufficient for the concealment of a force proportionably adequate, and because it is not reasonable to suppose that the enemy would neglect the precaution so essential in war, of examining the country previous to advancing.

Every country where troops may be concealed is proper for ambuscades: woods, hedges, walls,
OF AMBUSHES.

houses, villages, ravines, ditches, grass or standing corn, and even plains, where they are not entirely open, are proper places to spread a net for a negligent, presumptuous, or ignorant enemy.

Infantry or cavalry, and frequently both, according to the nature of the country, are employed in ambushes. As promptitude is required in execution and retreat, cavalry is generally wanted. In cases where both are necessary, the infantry may be mounted behind the cavalry. To arrive at the place of ambush without being discovered, the night should be chosen, or a rainy, stormy, or cold day, which prevents the inhabitants from being in the field; and when arrived at the place, the soldiers should enter one at a time, and by different places, that they may not be discovered by their steps.

When it is intended to surprise the enemy in a village, farm, castle, house, &c. the success of the enterprise will be more complete, if it be possible to form ambushes in several places, so as to block up all retreat. As soon as the enemy has reached the place where you wish to surprise him, without having discovered the ambushes, circumstances will dictate the periods most favourable for attacking him, and amongst the following the most convenient may be chosen: 1st. When the enemy is established, when he unbridles his horses, when he eats, or when he sleeps. 2d. The darkness of the night. 3d. When extreme cold compels him not to remove from, or to remain shut up in his post. 4th. A stormy time. 5th. In great heats, one or two hours after his arrival. 6th. In short, two or three hours before day, so as to have still a portion of the night to favour a retreat, in case of alarm. The break of day, and the approach of night, are periods the least favourable for attempting this enterprise, because at these periods, the enemy sends out upon discovery.

Before the attack a troop should be sent out upon a route, by which it is impossible for the enemy to escape; and, as soon as it has arrived either on
nearly so, march rapidly upon him, force his advanced guards, overthrow that which usually covers his post, destroy all those who assemble together, endeavour to carry off the commanding officer; and, when you experience no further resistance, make as many prisoners as you can, unite the detachment with dispatch, and retire with all possible diligence.

In ambuscades, upon the side of a road which the enemy must follow, a different mode of conduct will be necessary. When you are arrived at a proper place, if it be a wood, for instance, divide your troops into three parts, placing in the center the strongest, which is intended to fall upon the body of the enemy, and the two others upon the wings, at a convenient distance from the former; these are intended to surround the enemy from van to rear. Afterwards station, among the most tufted trees upon the side of the way, the necessary sentinels to give you notice, by dumb signals repeated from one to another, as far as the three divisions, of the approach of the enemy; and no precautions, relative to security, should be neglected.

If there should be woods upon the two sides of the way, it will be necessary that you may dart upon the enemy from all quarters, to station opposite and upon the other side a small detachment, which should watch, like the rest, the arrival of the enemy, and the moment favourable for charging him; this should be that where he may be attacked at once in his advanced and rear guards. The greatest silence should be observed, and the soldiers should not even be permitted to smoke. The soldiers should also frequently be called over, to see that no one has deserted: in this case, the ambuscading party should instantly move off, to avoid being betrayed.

If the enemy should arrive, preceded by a feeble advanced guard, it should be permitted to pass, for the surprise of the whole body will be afterwards more easy and more certain; but should the ad-
vanced guard be numerous, it will be necessary to charge it. The rear guard, however strong it may be, should always be surrounded and charged vigorously. A signal should be agreed upon, at which the different detachments should charge, together or separately.

As soon as the detachments of the wings are ready to attack the van or rear guard of the enemy, advance directly with that of the center to engage his flank, and charges him briskly, without giving him time to look about him. If the surprise has been well managed, the enemy is thrown completely into confusion, and nothing more is required than to kill or make prisoners. Great care should be taken, and orders should be previously given for that purpose, not to pursue the fugitives, as this would occupy too much time. After the prisoners and the detachments are collected together, the troops should withdraw.

If upon the approach of the enemy, it should be perceived that he has patrols upon his flanks, the project of surprising him, must not merely upon this account be renounced. In that case, it becomes necessary to fall back with the advanced sentinels towards the wood, and whilst there concealed, by means of soldiers lying upon the ground, or behind tufted trees, the moment should be observed when the enemy is sufficiently occupied; to fall upon him. The surprise will not perhaps be so complete; but the enemy may always be made to experience a check.

If it should become necessary to form an ambuscade, behind walls, hedges, or bushes, all dispositions should be as nearly similar as circumstances will permit, to that which has been above detailed. With respect to ambuscades in ravines, fosses, or scattered houses, as no precise instructions can be given, practice, which always instructs much better than theory, must be the only guide.

Ambuscades by night proceed upon the same
principles as those by day; in this case it only becomes necessary to place the assailants nearer the place which the enemy is to pass, in order to fall upon him more readily, and for the better discovery of the reciprocal movements.

Under this species of ambuscade are also comprehended all the traps laid down for the enemy, to draw him towards the ambush,* by presenting to him easy captures, by feigning a retreat, or making a manœuvre which appears to lay you open.

The enemy having become circumspect from having been led into ambuscades, may be yet drawn into them in this manner, particularly if he is fiery and audacious; but the success of these snares depending uniformly upon the capacity of the officer conducting them, no further particulars can be given relative to this subject.

**Best Mode of surprising Convoys, or Military Stores, conveyed by Water Carriage.**

It is extremely easy for a small body of well disciplined and determined troops to seize upon and carry off convoys and military stores, that are put on board boats and barges, for the purpose of being conveyed to an enemy's depot. The party engaged upon this service has only to ascertain the exact time of their departure, and the hour at which they will arrive opposite the spot from whence the attack is to be made. You must always lie in wait for them under the cover of a wood, high banks, &c. where the river turns off, and at some distance from their main army, but succours should be sent when the attack commences.

When all these necessary precautions have been taken, a detachment, composed of dragoons and

* The capacity of the Hungarians, who trust entirely to the speed of their horses, renders them very subject to fall into this kind of snare.
light infantry, adequate in point of strength to the object in view, should be ordered to march at night; that your design may be concealed, this detachment must proceed through some indirect quarter of the country to the spot where the ambuscade is to be formed: you must, moreover, contrive to reach this spot by dusk, or during the night, to avoid being observed by any of the inhabitants. Patroons are next to be pushed forward, and so posted as to discover the approach of the enemy, and be the means of securing you from any sudden surprise. The main detachment must be under arms, and observe the most profound silence.

As soon as the convoys get within reach, the attack must be commenced with cannon, if the river be broad, and with musketry if it should be narrow. In either case the fire should be directed against the first boat or barge, and be continued without intermission, until the men on board discover a manifest intention to surrender. Should the escort make any opposition, you must operate along the banks, and attack the barge or boat until she yields or sinks. You must particularly endeavour to destroy the helm. When there is occasion for musketry, the best marksmen should be selected for the duty. The dragoons will instantly dismount and second the infantry, whilst a few men, detached for that purpose, should follow them with their horses.

If the river should wind off at the point where the attack is made, you must take care to have some pieces of ordnance so planted that they may rake the boats fore and aft, which will speedily prevent the escort from attempting to push by. The same operation must be observed with regard to the other boats or barges, should it be found necessary, which in all probability will not be the case, as the surrender of the leading boat or barge, will naturally produce that of the rest.

When the boats surrender, you must instantly
SEIZING A MILITARY CHEST.

disarm the several escorts, and if you should not be strong enough to carry off the arms, they must be thrown into the river.

When all have been taken possession of, the best and most portable articles must be selected, and the rest with the boats, be sunk. The latter may be saved, if they should be thought useful: whenever it is apprehended, that succours may be sent for the protection of the convoy, carriages should be provided to carry off the stores.

Should the ground you have to tread back or retreat upon, not be very extensive or intricate, the prisoners may be divided amongst the dragoons, each taking charge of three or four, whose arms must be tied; but if the prisoners should be the means of retarding the march, they should be left at a certain distance, especially on the approach of the enemy, in which latter case, the foot soldiers must mount behind the dragoons.

If the enemy should be at too great a distance to come to the assistance of the convoy, the whole detachment should be commanded to cross the river, and after having attacked the escort and killed or dispersed the men, they should take possession of the boats. When the river is to be crossed, you must provide against accidents, and secure your retreat by leaving behind a small portion of your own troops.

The best Method of seizing a Military Chest.

Army remittances, or regimental monies, which are generally comprehended under the head military chest, or caisse militaire, may be seized upon either openly or by ambuscade, during the march of an escort, or whilst it is quartered in a village. The different means by which this object may be effected, depend upon the force you may have with you, the strength of the escort, the nature of the country through which it passes, and the situation of the place where it may occasionally halt.
Military remittances and regimental stores, are generally well guarded; they are often, indeed, carried to the army, when a considerable convoy is marching towards head-quarters, in which case the escort of the treasure takes the lead. Under these circumstances, the seizing of the treasure brings on an obstinate engagement, the ultimate issue of which is so precarious, that it is not always prudent to hazard the affair, unless you should have positive intelligence that the convoy is to halt at night in a spot which may be easily forced, or that the enemy is ill guarded; in both of which cases your business will be to surprise the escort. But if military monies should be sent under the protection of two or three hundred men, who must go through several days march before they can reach the enemy's quarters, you may then attack in a variety of ways; and if the first attempt should fail, you may hang upon its flanks, take advantage of the ground, and make continual attacks until the whole be seized and the escort be destroyed.

If you intend to attack a treasure openly, and upon first sight of it, you should make a secret march with a detachment proportioned to the escort, so managing the length of each day's march, that there should be but a small distance to go at the last, so as not to be fatigued when it is necessary to fight, and so as to find, on the contrary, the escort harassed, or not in a condition to oppose any considerable resistance.

When you are sufficiently near the enemy to be perceived, unite to your detachment the advanced guard, and the flankers or patrols of the flanks, which might tend to discover you too soon; march at a brisk rate, and as soon as you see the escort, redouble your speed, arrange your disposition whilst upon the march; regulate this according to that of the enemy; first attack the weakest part, overturn it, and afterwards fall briskly upon the main body, without giving the enemy time to look about him.
SEIZING A MILITARY CHEST.

It sometimes may be more advisable to begin with this, particularly if it be preceded or followed by strong advanced or rear guards; in that case, some small troops are dispatched to amuse and prevent them from coming to succour it.

If you should be upon the enemy before he has made his disposition for defence, you will have reason to expect complete success. You should therefore choose for the attack that place in the road where the treasure is to pass, that appears most favourable for approaching and surprising it: woods, defiles, &c. are very proper for this purpose. If the first onset should not be completely successful, you should constantly harass the escort, to fatigue and keep it continually in alarm, until a defile, or other favourable obstacle, affords you an opportunity to recommence with advantage a fresh attack. The van guard, rear guard, and flanks of the enemy, should be charged together or separately, and you should always so hover round him, as not to lose the opportunity to hem it in, or to destroy it.

These kinds of expeditions are so much more advantageous to be undertaken, as the enemy cannot hardly move to any distance from his treasure (through fear of exposing it) to pursue you, if he should have succeeded in driving you back.

If you should find it impossible to succeed in the day, pretend to retreat, and send a spy to reconnoitre the place where the enemy is to pass the night, and the dispositions for defence which he has made, or is capable of making. Proceed then on your way secretly under the cover of darkness, towards the rendezvous which shall have been pointed out by the spy, and which should be near the enemy, but so as that it is impossible for him to discover you.

Regulate your enterprise according to the report which shall have been brought to you. It is probable that your adversary will deliver himself up to sleep with greater confidence of security, as your retreat may have left him in the opinion, that beaten
back in various attempts, you have absolutely withdrawn yourself. Enter them briskly by the different openings which you have forced. Surprise is in this instance much more effectual, as you can attack the enemy at the very moment when he is asleep.

It must be presumed, that an escort attacked thus vigorously, and after so many renewed onsets, will be at length beaten, especially if the charges have been directed by a skilful and experienced officer; but as it is necessary to employ in enterprises of vigorous effort, a detachment too numerous to evade discovery, and that the risk of losing many men and horses is considerable; it is more advisable to use the ambuscade, which requires fewer troops, and affords besides, the advantage of surprise, which is sometimes preferable to open force.

As soon as the treasure is carried off, you should withdraw with all possible diligence, without losing time in pursuing the fugitives. If the waggons are too heavily laden, others should be taken in the villages through which you may pass, and by thus diminishing the loading of all, the march will become more easy. To render your retreat secure, it is advisable to take a different road from that which you followed to attack the treasure, and let a considerable detachment march before to secure its safe arrival in the camp.

Of Marching.

[Plate F. Fig. 1, 2, 3, and 4.—Plate G. Fig. 1, and 2.]

Before we detail the principles of marching, it will be necessary to explain the mode of arranging the troops to perform it. With respect to this, there are three general cases, which will occasion as many variations: namely, when the enemy is upon the front, rear, or flanks of the march.

In the first case, if the country be open, the cavalry, followed by half the artillery and some infantry, should commence the march: the remainder of the
infantry, artillery, train, and baggage* should follow. If the country is intersected, part of the infantry and artillery, and a detachment of cavalry, should precede the remainder of the troops, the train and baggage.

If the enemy should be in the rear, and the country open, the baggage and train, escorted by the infantry, should march first; the remainder of the corps should follow, and the cavalry should close the march. If the country is intersected, this disposition of the troops should be inverted.

If the enemy should be on the flank, and in an open country, the cavalry, supported by a small detachment of infantry, and one half of the artillery, should ride upon the flank of the march of the infantry which they cover; the train and baggage escorted by the infantry, marching upon the flank of the infantry upon the side opposite to the enemy. If the country is intersected, the infantry should cover the march. In all these cases, infantry and cavalry are reciprocally joined together; because these two bodies should mutually support each other. The cavalry often has occasion for some marksmen whom they may take behind them, in cases where they cannot follow; and it is sometimes necessary for the infantry to be seconded by the cavalry. Another reason which renders this combination useful in advanced and rear guards is, that the two bodies united are better able to resist the enemy, and to afford to the whole body time to arrive at, or obtain a respectable position; besides, in passing over an intersected country, the infantry examines it, and if it be an open country, this duty is performed by the cavalry.

In all cases, if a river or brook is to be passed, the train, part of the artillery, with a detachment of

* By the word train, is understood the small boats, and ammunition wagons; and by that of baggage, the small number of horses allowed to each officer for carrying his necessaries.
infantry and cavalry, should go before, so that when the body of the troops arrives, they may immediately employ the means of accelerating the passage, and not be obliged to wait for the necessary articles, should the difficulties of the roads or other obstacles retard their march. In general, immediately upon the arrival of the train, and the troops which escort it, the necessary preparations to cross the river or brook should be made, unless the superiority of the enemy should render it necessary to wait the arrival of the whole body.

Prudence requires to march always as if the enemy were at hand. It would be more advisable to march in the order of battle than in column; but as it is seldom possible to advance upon an extended front, we are almost always compelled to adopt the latter. It becomes then necessary that the order of march should be so disposed, that by a simple and short deployment, the order of battle may be formed without giving any favourable opportunity to the enemy. To render a system of deployment admissible, it becomes necessary, that in every instance of a march or a manœuvre, the troops should be found in a respectable situation for defence, by which they may not only resist the enemy, but even drive him back if he should attempt to molest the deployment; for this purpose it becomes necessary, that all the troops should follow in good order, and that no person should quit his rank and file. This ought to be guarded with particular attention, as the soldier generally considers his own convenience, without dreaming of the consequences which his negligence may occasion.

Troops during a march ought neither to be too close nor too open; they should observe a just medium; the observation of this maxim is important; nevertheless, if it could be clearer, the latter inconvenience is less dangerous than the former; for in case of being too open, the facility of motion is preserved,
which would become impossible, if soldiers were crowded one upon another.

The uniformity of motion becomes further indispensable in marching; without this it becomes necessary to halt, and to run alternately, which fatigues the soldier more in two hours, than if he had been marched six in a well regulated pace. Too frequent halts are also as fatiguing as continual marching.

Marches performed by numerous troops afford the best opportunity for observing the effect of a continual succession of motion and rest; a succession ridiculous and pernicious, the true cause of which is ignorance in principles. If, after having marched quick for some time, the soldier makes an halt, he grows cold, and the perspiration being suddenly stopped, occasions diseases. He is exposed to the same inconvenience by being permitted to drink water when he is hot.

Care should be taken not to be exposed in places which cannot be discovered by the eyes, without having previously examined the ground upon the front and the flanks of the march, by patrols of cavalry in the plain, and infantry in a country covered and intersected. The woods, hollow ways, ravines, valleys, villages, &c. are so many favourable quarters for ambuscades, and security depends upon discovery more or less effectually made. It would be much better, for greater security, never to march without being surrounded by patrols, even upon the open plain; for there may be hollows not easily perceived, where the enemy may be concealed with so much more confidence, as these irregularities of the ground which do not strike the eye, are not generally suspected.

It is particularly dangerous to enter a village, without any other examinations than that of a patrols, whether on foot or on horseback. The inhabitants ought to be questioned relative to the distance of the enemy, and the houses should be visited; for sometimes the enemy will suffer the advanced guard
to pass, that he may more readily surprise the whole body. Mere reports also should be distrusted; those from whom they came, may be of an understanding with the enemy, for the purpose of leading into error, or to deceive with respect to the number of the troops which they have seen desile.

To traverse the passages with security, cavalry should be sent thither, who should wait the arrival of the whole body. If it be necessary to march in the night, it should be slowly, that no person may be separated. If narrow places are to be passed, or such where it is impossible to march upon an extended front, and it should be absolutely necessary to desile, an halt should be made from time to time, to re-establish order among the troops, and particular attention should be paid to augment their front, as soon as the passage becomes sufficiently wide for that purpose.

To conceal a march, or the object of it, from the enemy, all the avenues should be well guarded and closed up, and no person should be permitted to go out. The troops divided into different detachments, should immediately depart by different roads, with an order to all the particular commanders to repair at a fixed hour to the place of rendezvous. All high roads should be cautiously avoided; the troops should remain concealed by day in woods, or other covered places, and march only by night. The soldiers should not be suffered either to make a fire, or to smoke; they should march with all possible silence; and every thing which must tend to discover the march should be avoided.

In all marches, but particularly secret ones, the necessary provisions should be carried with the army, such as biscuit for the men, and hay, iron, &c. for the horses.

In forced marches, part of the infantry should be mounted behind the cavalry; and the rest in such carriages as can be procured for the occasion.

In marching with intent to surprise, it should be observed, that a strong van-guard which advances at
OF MARCHING.

A distance from the main body, only serves to discover a march; this, when reviewed at about a league from him, it will be necessary to draw in the advanced guard, within 100 or 200 paces at most, towards the column; and reduce it to a non-commissioned officer and a few soldiers. The flanks or flanking patrols, should also be drawn in; and all should re-enter the main body when the disposition is made for falling upon the enemy.

A corps of cavalry upon a march extends itself much more than infantry, and will require more time to form itself in order of battle; to avoid a surprise, therefore, it will be necessary to lengthen the advanced guard and flanking in proportion, and to have all the defiles, hollow-ways, &c. which are to be passed, well examined. Great care should be taken, that the horse do not double upon the file, which might be attended with the most fatal consequences. If obstacles should be met with, a turn should be taken to avoid them. When the cavalry passes through water, the horsemen should be ordered not to stop for the purpose of watering their horses. The cavalry march generally by two, or by four, but when the enemy is near, they should march with precaution, and by squadrons. The defiles should be passed upon a gallop, and as soon as the head of the body is beyond them, it should form again, and afterwards march leisurely, or halt, until the whole body has either passed or joined. In other instances the march of the cavalry is the same as has been before pointed out.

Upon approaching the place you intended to arrive at, make your whole troop halt at a certain distance, to let it breathe a little, and get its arms in order, distribute, and explain clearly the orders you have to give; make your dispositions agreeable to the locality and your dangers, and afterwards march in silence to execute them.

In all marches, either of the army, or a detached body near the enemy, the light troops should secure...
it, by posting themselves forward in the woods or defiles which it may have to pass.

Of Camps and Quarters.

The light troops never encamp, except when they are brought near to the army, or when they are to occupy for some time a position, where it becomes impossible for them to be sheltered without the means of tents. But when they either go into camp, or cantonment, this should be done in such a manner, that they may be able to assemble readily. The observance of this maxim can in no case be neglected, without encountering great risks.

In raising a tent, two stakes should be fixed in the ground, about 11 feet distance from each other, upon which a third should be tied across, at five feet from the earth; two cloaks should be stretched out on each side, the broad part of which should be placed above, and fastened at the bottom, by means of small girths; each tent should be eleven feet long, seven broad, and five in height: according to these dimensions, the cloaks which touch, cross each other about six inches.

In a body of light troops, consisting of 384 infantry, and 192 cavalry, not including the officers and non-commissioned officers, there will be 128 stakes, 192 cloaks, and 712 men to be lodged, including the inferior officers, and the workmen destined for the service of the machines.

As 25 stakes* and 48 cloaks, are sufficient to form twelve tents, disposed in a line, and touching one another; 48 of these should be erected, in every one of which 14 or 15 men may be made to enter, until the whole corps is provided; but the soldiers upon service not occupying any place in the tents, all these may occupy them easily.

* Five stakes will then serve for two tents, because those planted between the two, support both at the same time.
The tents erected upon the same line, and divided from 12 to 12, will form four divisions between each of which there should be left a passage, from 12 to 15 feet, so as to be able to traverse the camp with ease. The two openings which remain at the extremities of each division of tents, should be closed by shields, which should be arranged like a wall, by placing them one upon the other, and supporting them with the remaining stakes, or with branches of trees. It would be a shorter method, if they are to be met with, to support the flanks of the tents by walls or hedges.

Every soldier should remark exactly where his arms are placed, so that a corps of light troops may encamp, decamp, put itself under arms, and even march off at a moment's notice.

The blending of infantry and dragoons together will contribute to establish between the light troops, both foot and horse, an union and reciprocal reliance, which is at once so rare, and at the same time so essential, between these two bodies.

The horses of the dragoons should be at picket behind each tent, having their heads turned towards the flanks of the camp, in the center of which, and in the rear of the troops, should be placed the train and the machines. The marquee of the different officers, should be placed upon the same line, and upon a front equally extended as that occupied by the tents of the soldiers. The commanders should encamp behind the officers.

Such is the best mode of encamping for a body of light troops. When the camp is required to have a narrow front, either may be chosen according to the circumstances of the ground. The four large tents should form as many files, the ends of one of which should be turned towards the head of the camp. The horses should be placed between the two first files, on the right and left. Between the two files of the center, there will remain a broad and entirely unobstructed street, at the end of which, in going towards
the tail of the camp, the machines and the implements should be deposited. The officers should erect their tents in the rear.

If a camp should be established in a place inclosed, the nature of the place should determine the form of it. Openings sufficiently spacious should nevertheless be contrived, and the different parts of the camp should be so disposed, that in going out of the tents, the troops should be in possession of a defensive position, from whence they might repulse the enemy, if he should make an attempt to force them.

For the security of the camp and its police, a guard should be established in front; one in the rear, and three sentinels upon each flank. The dragoons should furnish such advanced vedettes as may be deemed necessary. We speak not here of small posts, which it may be necessary to detach: their species, quantity, force, and position, depend upon the localities, and upon existing circumstances; but it will be necessary to have always ready in advance, a picket of each body ready to march.

When an army is established in a town or village, it must never be too much extended; for in case of alarm it would become difficult to assemble the troops, and the enemy would in such case be induced to surprise it, on account of the facility which would be thus afforded for doing so. The best method is to choose a place proper for containing the whole corps, and thereby to make a vigorous resistance. This object may be fulfilled by occupying a large building, or a row of houses situated near to each other. If these cannot be found, the churches and church-yards should be occupied, which are generally posts capable of defence. This precaution of uniting the whole body in a cantonment, is so much more prudent, as a great number of examples prove, that those who have neglected to do this, have been punished by the carrying off or total defeat of the whole of their troops. If there should be no post capable of containing the whole corps, it will be more
safe to encamp on this side, or in the interior of the town or village; and in all cases to keep the locality of the troops collected,* continually accoutred, and the arms in good condition. For however good might be the discipline of the corps, it would be still imprudent to rely too much upon it: all men, but particularly soldiers, take their ease whenever they have an opportunity; besides, it is not reasonable to flatter one's self that by night, in a place unknown, during the tumult occasioned by a surprise, where frequently fear and uncertainty confuse them, they should, at the very first signal, appear at the stated rendezvous. For this reason, as well in camps as quarters, a place of assembling known to all the troops, should be determined upon, who should also be instructed in all the ways which lead to it; and whatever may be the alarm, whether true or false, the troops should always run readily to the place of rendezvous. Even false alarms ought never to be neglected, because real ones may happen eventually. A commander would do well upon the first noise, to send upon all the roads of his post patroles to reconnoitre, and commanded by officers incapable of imposing, who should see with their own eyes what is necessary, in order to take those measures which may be most agreeable to circumstances.

Although light troops seldom encamp, it becomes nevertheless necessary to give some general precepts relative to the camp which they may occupy. As nothing is of more importance than the preservation of soldiers, care should be taken, as far as circumstances will permit, to find some situation, healthy, elevated, out of the way of sudden inundations, shaded, abundant in forage, and in the neighbourhood of good water. It is moreover necessary, that it should not be overlooked, but easy to be guarded, disencumbered of every obstacle that may prevent

* If the soldiers are permitted to go to any distance, it should be only a small number at a time.
the communication between the troops and those who may arrive to succour them: it is further necessary, that there should be many ways to open upon the enemy, or to withdraw from him. The camp, as much as is possible, should be in the neighbourhood of an advantageous post, which may serve for a retreat in case of necessity.

Being arrived in the camp, it becomes necessary to reconnoitre the environs and the ways which lead thither, so that no person can approach without being discovered. It is necessary also to send parties towards the enemy, and to place some sentinels upon the advanced heights, or in the open places. The sentinels should have posts fixed upon for the day, and others for the night, and be particularly alert in the latter. It is necessary, as much as possible, that the sentinels should be placed in sight of each other, so that no person can pass between them without being seen.

If it be important that a body of light troops should maintain themselves in a position little fortified by nature, this defect should be supplied by art, in covering its fronts and flanks with several small redoubts, or redans, or with an intrenchment upon which artillery can be established upon the most advantageous places. This precaution will place out of the reach of surprise. If the intrenchment should be far distant from the enemy, advance towards him very small parties, so that if he should march upon you, you may be apprised of it in time. If the enemy be near you, it will be difficult for him to conceal his movements, if you are sufficiently vigilant.

In this place it becomes necessary to speak of light troops, when armies encamp or occupy quarters. When the army arrives in its camp, its light troops ought to cover it from those attacks or enterprises which may at that time be formed by those of the enemy. They should lay in ambush in advantageous places, to fall from thence upon the enemy,
Camps and Quarters.

If he should attempt to kill, or carry off, the soldiers who might be detached to fetch wood, straw, and water. If there should be any thing to fear from a detachment encamped or cantoned near the new camp, it will be necessary to mask it in such a manner that it cannot injure, nor even attack it so as to divest it. When the army is established, the light troops ought incessantly to be occupied with the mode of keeping at a distance those of the enemy, so that they may find it impossible to raise alarms, or execute their little incursions which constitute their characteristic.

A commanding officer of light troops, if he be an intelligent man, will avail himself of various circumstances to obtain advantage of the enemy, as soon as he arrives at, and is fixed in his camp.

An army arriving in camp, immediately goes to seek what is necessary, which renders it incapable of sustaining with advantage a well concerted attack. This is the reason why the light troops ought to lay in ambush in the environs of the enemy's new camp, to disturb him in different quarters. The General may cause his light troops to be supported by a corps established in echelon, between their post and the army; this will have, in such case, the double advantage to render the enterprise more certain, and to augment the enemy's disorder.

As soon as the enemy is established in his camp, the commander of the light troops should take advantage of a heavy rain, particularly when there is an appearance that it will continue several hours, which generally happens when it commences after midnight, or by day-break; at that time he may dart upon the enemy in different quarters, taking care not to halt a long time, so as to expose himself to be cut off in his retreat, the place of which should be previously pointed out to the various detachments, which, after having obtained their aim, should retire with all convenient speed, to guard themselves from the enemy's cavalry, which would not fail to pursue...
them. It is an excellent precaution to bring forward a few infantry, which may be placed behind hedges, or other intrenchments, and who may protect the cavalry by their fire.

When the enemy must occupy a camp for a long period, the light troops ought to harass him continually, by attacking him at the same time upon several sides; they should post themselves in such a manner as to cut off his convoys, forage, provisions, and even the refreshments which may be furnished by the neighbouring villages; they should destroy his ovens to deprive him of bread; they should alarm often, and put him upon the alert during the night, by way of fatiguing him, &c. Sufficient compensation will be obtained for the pains these enterprises may require; for the enemy will not only be reduced to the last extremity, but deserters and sickness will weaken him considerably, whilst the army will be exempt from these evils.

Mode of passing Rivers.

When the enemy wishes to prevent the passage of a river, he guards or destroys the bridges, and causes all the boats to be brought towards his own side; this conduct renders enterprises upon the other side of a river difficult, unless the river be fordable.

If all the soldiers knew how to swim, the passing of rivers would become less difficult; but this method of passing them would be attended with very great inconveniences: it is not at all times practicable; it wets the muskets, which there may be occasion to make use of immediately afterwards; in short, it renders the soldier numb and cold. For these reasons, in all cases of necessity, recourse should be had to more convenient methods.

If it be required to pass a river extremely broad, it will be necessary to order all the boats which can be found to go down to the mouths of the rivulets which fall into it upon your side, there to embark and pass together, or, which would be still more advan-
MODE OF PASSING RIVERS.

Visable, to pass by two or three divisions, supported by each other.

If you should not have any boats, and there should be some that are ill guarded on the other side, you should send over ten or twelve men in portable boats to fetch them. If these should be wanting, sufficient wood should be collected, that the troops may construct the necessary boats. They should be constructed of six planks, supported on each side and at the bottom by the necessary props, upon which these are to be nailed: the joints should be filled with potter's clay or moss, and they should be well secured, both within and without. Four men can transport one of these (upon the bank of a river), capable of holding seven or eight soldiers. Five or six of these small boats should be placed by the side of each other, which will form a bark, upon which you may pass over, and the pikes and shields may steer it. Nothing is more easy than the construction of these boats: planks are to be found everywhere, and wood for constructing the sides, with which an hundred boats of any required dimensions may be constructed in a few hours. A small plank nailed to a pole will serve both as oar and rudder.

If there should be neither time nor opportunity for constructing boats, rafts should be made instead of them: these may be formed of casks, tubs, coppers, and other hollow utensils, which are light and capable of being stopped up. The following is the method of making one of these: after having closed hermetically all the utensils which are intended to be used, they are disposed in the form of a long square, with an angle at the head to break the force of the current; the heaviest bodies are placed behind, and the smallest before, towards the point: these are bound together by cords or oziers, and afterwards each row is fastened in every direction; upon the top of these are nailed planks or barn-doors; a large plank, in form of a rudder, and nailed to a pole, is placed behind, and afterwards others, smaller and
narrower, are made use of for the sides. These should be surrounded by rails, even if they were made but of ropes,—such may be found in barns, but particularly in belfries: great use may be made of these, by fastening to one end of them a large stone or a mill-stone, which is cast into the river where the current is strongest, and in this manner the raft becomes a flying bridge, which will easily and frequently convey many persons from one side of the river to the other. Thirty casks of ordinary size will form a raft ten feet broad and twenty feet long, which will carry over sixty men commodiously, and without any danger. When larger casks can be procured, it will be so much the better. If you should have to engage the enemy upon a descent, you may blind with fascines the side of the raft which fronts it, and afterwards throw down this blind to serve as a bridge. Upon occasion it is better to construct many smaller rafts than one large one, which is more unwieldy and difficult to steer in a broad or rapid river.

Such is the species of rafts the most ready and easy to construct: the necessary materials are common, and may be found in the neighbourhood. One hundred casks will be sufficient to carry over at one time two hundred men, and upon occasion two hundred and fifty.

**Method of constructing a Bridge of Boats.**

It is evident that the different passages above described may, if there be no cords, be effected upon rivers of any breadth. The portable boats will frequently save going round about, and form immediately a flying-bridge, or, what is still much better, a bridge of boats.

To construct these, the boats are fixed in the stream from distance to distance, by cords, to which are attached large stones, or other heavy bodies, which are sunk to the bottom of the water. These boats are joined together by small beams or ladders,
which are afterwards covered with planks. Five ladders, twenty feet in length, laid upon four small boats, are enough to enable the infantry to pass a river one hundred feet broad. Over a large river one boat and two ladders will make a bridge; but it is more advisable to lay down several ladders, one by the side of the other. It will be perceived that this is attended with very little trouble; for planks, ropes, and ladders, are to be had in every village: the trouble is next to nothing, and the time employed very little. Supposing a bridge of this kind were only the breadth of four ladders, covered with strong planks, a whole body of men, stores, artillery, and even horses, may be made to pass over it; but if the ladders were too weak to support the weight of the latter, they might be made to pass through the water, holding them by the bridle.

Sometimes a storm will form in a short time an unexpected barrier, by the torrents which it occasions. To pass these, as well as large rivers, the slope of the banks must be increased, if their declivities are too sudden. In this case one or two wagons should be put down, covered afterwards with planks or barn-doors, and you will have in an instant a bridge constructed, upon which the cavalry may pass, leading the horses through the water.

The shields simply will afford the means of passing small rivers; it is sufficient for this purpose to be furnished with two long ropes, one of which must be fastened upon the opposite bank to a tree or a strong stake; upon the rope each shield is suspended by its handles, to which hangs a soldier; by loosening afterwards the cord on your side, the current will naturally convey them to the other side, and thus they will pass without danger and without trouble. The second rope is used to draw back the shields for the use of other soldiers, and so on until all have passed.
Method of passing a River upon a pressing Emergency, when neither Bridge, Raft, nor Ropes, can be procured.

If you are in a situation extremely urgent, and can procure neither bridge, raft, nor rope immediately, put your portable boats into the water, and two rowers to each; let twenty soldiers hang round, and thus pass to the opposite bank; moreover, each shield will serve for two foot soldiers, * and by this method more than three hundred men may be carried over at a time, namely, eighty-eight in and about the boats, and two hundred and eighty upon the shields. Two voyages will be more than sufficient to transport all the infantry of a corps beyond the river.

As for the dragoons, all their horses naturally swim, and if the aid of art be added, no other can be an insurmountable obstacle to cavalry. The attention required in this case will be to cut the river diagonally to turn the head of the horse against the current, holding it elevated, and bending forward upon the horse. If these modes of passing rivers were frequently practised, they would be no more than a game of sport. The Chevalier Folard has laid down different methods for constructing rafts, and a method for the cavalry to pass rivers, which consists in giving to each horseman two leathern bottles, well sewed together, and filled with air; by this method a horse will swim long and easily. An ample description of this method may be seen in his Commentary upon Polybius, which is unfortunately but little attended to, although the plan is most excellent.

* These soldiers should place themselves one behind the other, forming a chain upon a double file. It is to be observed, however, that this secondary method should only be resorted to in desperate cases.
General Rules for the Passage of Rivers.

Amongst operations of war, whether upon a larger or a smaller scale, the passage of rivers is particularly important. Those who are most conversant in this practice may make distant excursions, cause consternation everywhere, and levy contributions; they may direct enterprises against fortresses, depots, magazines of provision and forage, stores, &c. and, in short, may execute with facility and success all those strokes which may present themselves in the cause of war. Nothing stops an army accustomed to this; it appears and disappears like a flash of lightning; that which was an obstacle becomes a means of support, because it is always an obstacle to the enemy.

If you should have the choice of a place for passing, such place should be chosen where the bed of the river is narrowest, because the current being there stronger, the passage will be more expeditious. Find out also those banks which are of gradual descent, to enable the men and horses to go in and come out of the water more readily.

In all passages the following order should be adopted, if you pass on the side of the enemy: establish the artillery and catapultas upon your bank to batter that which is opposite; a part of the dragoons, followed by a portion of the infantry with its pikemen, should then pass, who should go and occupy the avenues and awe the enemy's post; the remainder should follow in divisions, and the artillery and train last of all.

In crossing a river in retreat, the artillery should first be made to pass, and should be ordered upon the opposite bank to favour the retreat; the dragoons should come afterwards, and lastly the infantry. Those who have passed first should endeavour to find secret and covered places, from whence they can fire upon the enemy, if they cannot cover themselves with their shields, keeping themselves collected together in an order the most advantageous.
and agreeable to the local advantages which may be afforded.

If in a similar retreat the enemy should pursue closely, a place should then be sought of difficult access; the avenues to which should be guarded by infantry to defend the passage; it should afterwards withdraw, throw itself into portable boats, and pass under cover of the artillery posted upon the opposite bank: it is also further sustained by the main body, which being advantageously posted and covered by its shields, may fire with success. If a strong place, from whence you may fire under cover, should be chosen for a passage, superior force can neither compel you to retreat, nor molest you.

If the enemy is posted on the other side, make without hesitation a strong march above or below the post which he occupies, and take the night to effect your passage. If the enemy is posted in several places to wait for you there, or if he has reached you, march on until you have found a village upon the bank of the river, there put yourself in a state of defence, and employ your men at the same time in constructing a large and solid raft, and pass in the night to the other side, if there be none, or a few only of the enemy. If the enemy should be in force, descend by the current until you find a place, or a moment favourable for disembarking.

If the village should not furnish the necessary materials for the construction of a raft, you should let your men go along with the current in the small boats, and with their shields: there is not much to be hazarded in this, for you will soon be out of sight of the enemy. If he should pursue, you should make many turnings, or make haste to reach and land expeditiously in some bend of the river, even although you should there meet and be compelled to re-encounter a part of the enemy. The worst that can be done will be to re-embark, should the enterprise appear difficult.

But if it should be indispensable for you to pass,
hesitate not to do it before him; you will sustain little injury from his fire; it is uncertain in the daytime; by night it is much more so; and you may answer it by that of your troops, who have the advantage of being covered by their shields. Besides, bold, extraordinary, prompt, and unforeseen enterprises, are always attended with success. To be indecisive in critical situations, is to contribute to your own defeat.

Upon a little reflection we shall see first, that by the means pointed out for passing rivers, enterprises may be formed even against fortified towns situate upon their banks, and against those which may be surrounded by ditches filled with water. The former are generally weak upon the side of the river: during the night the bank may be easily gained, afterwards there is little to do but to gain a passage over the rampart or walls; the advantage of ditches, therefore, will be lost to the enemy through the aid of shields and small boats.

It is necessary here to observe, that the light troops having a greater facility of passing rivers, if it should be necessary that a river should be passed by an army, and it should be obliged to occupy much time in throwing over bridges, they should be sent to establish themselves on the other side in advantageous parts situate near the bank, such as woods, hedges, houses, villages, from whence they may prevent the enemy from molesting the establishment of the bridges and the passage of the river. This precaution becomes so much more important, as advantage may be taken of these places to prepare ambuscades or batteries, and establish themselves in force. If there should be no advantageous post to be occupied beyond the river, the light troops should construct redoubts in lieu of it. When the enemy himself makes the movements abovementioned, the commander of the light troops should form an ambuscade upon the opposite bank of the river, in the most advantageous places for prevent-
EXPLANATION OF PLATE E.

ING, or at least retarding the passage, and thereby give time for the arrival of the army.

EXPLANATION OF PLATE E.

FIGURE 1.

Representing the Method of Reconnoitring Troops posted in a Village in front of the Enemy's Army.

A. Position of the enemy's army.
B. Large village filled with troops, the number and description of which in it is intended to ascertain.
D. Infantry employed to examine the village.
E. Small posts of cavalry intended to pass the enemy's posts when the infantry advances to examine the village, and who should afterwards approach the flanks of the village to reconnoitre it.
F. Post where the cavalry should join to cover the retreat of the infantry.

FIGURE 2.

Representation of an Ambuscade formed to surprise the Enemy in a Village.

A. Infantry concealed in a wood.
B. Infantry concealed in a ravine.
C. Detachment of the aforesaid troops to march in the moment of attack, and shut up the outlets of the village.

FIGURE 3.

Representation of an Ambuscade prepared for surprising the Enemy in his March.

A. Road which the enemy must follow.
B. Corps destined to make the principal effort.
C. Detachment of this corps to surround the enemy.
D. Troops posted to close every entrance from the enemy.
E. Advanced guard of the enemy which is permitted to pass.
F. March of the enemy's main body.
G. The enemy's rear guard, which is charged in the rear.
EXPLANATION OF PLATE F.

FIGURE 4.

Representing the Attack of a Convoy transported over a River.

A. Concealed body which should advance to the bank of the river, as soon as the boats B arrive within reach.

C. Cannon firing upon the first boat.

D. Little islands, behind which the enemy is concealed.

E. Place where the troops should pass to go and compel the enemy to surrender.

F. Troops which have passed the river.

G. Troops to facilitate their return.

EXPLANATION OF PLATE F.

FIGURE 1.

Representing a March in an open Country.

A. Small body detached from the advanced guard.

B. The advanced guard.

C. Detachment of infantry, with the artillery to second the advanced guard.

D. The cavalry.

E. The residue of the machines and artillery.

F. The infantry.

G. The train.

H. The rear guard of cavalry.

I. Flankers of cavalry.

FIGURE 2.

Representing a March in an intersected Country.

A. Small troop of cavalry opening its march at a distance.

B. Advanced guard of infantry, accompanied by machines.

C. The infantry.

D. The cavalry.

E. The train.

F. Rear guard of infantry.

G. Flankers of infantry.

FIGURE 3.

Representing a retrograde March in an open Country.

A. Small advanced guard of cavalry.

B. Escort of infantry for the stores.
EXPLANATION OF PLATE G.

C. The train.
D. The infantry.
E. The machines.
F. The cavalry.
G. Rear guard of cavalry.
H. Small troops of cavalry closing the march.
I. Flankers of cavalry.

FIGURE 4.

Representation of a retrograde March in an intersected Country.

A. Small troop of cavalry advancing at a distance.
B. Advanced guard of infantry.
C. The military stores (equipages).
D. The cavalry.
E. The infantry.
F. The machines.
G. Rear guard of infantry.
H. Small troop of infantry closing the march.
I. Flankers of infantry.

EXPLANATION OF PLATE G.

FIGURE 1.

Representing a March from the Flank in an open Country.

A. Small troop of cavalry advancing at a distance.
B. Advanced guard of cavalry.
C. The cavalry.
D. Rear guard of the cavalry.
E. Small troop which close the march.
F. Flankers of cavalry.
G. The enemy.
H. Detachment of infantry and artillery to sustain the cavalry.
I. Small troop detached from the advanced guard of infantry.
K. Advanced guard of infantry.
L. Remainder of machines.
M. The infantry.
N. Rear guard of infantry.
O. Small troop closing the march of infantry.
P. Baggage, escorted by infantry.
**EXPLANATION OF PLATE 6.**

**FIGURE 2.**

_Representation of a March from the Flank in an intersected Country._

A. The enemy.
B. Flankers of infantry.
C. Small troop detached from the advanced guard of infantry.
D. The advanced guard of infantry.
E. The machines.
F. The infantry.
G. The rear guard of infantry.
H. Small troop detached from the rear guard of infantry.
I. Small troops detached from the advanced guard of cavalry.
K. Advanced guard of cavalry.
L. The cavalry.
M. Rear guard of cavalry.
N. Small troop detached from this rear guard.
O. The baggage.
P. Infantry escorting the baggage.

**FIGURE 3.**

_Representing the Manner of Encamping with an extended Front._

A. The guards of the camp.
B. The four grand tents.
C. All the horses of the corps.
D. The machines.
E. Marquees of the officers.
F. Tents of the particular commanders.
G. Tent of the Commander-in-chief.
H. Sentinels for the police of the camp.
I. Sentinel before the tent of the Commander-in-chief.

**FIGURE 4.**

_Representing the Manner of Encamping in a narrow Front._

A. The guards of the camp.
B. The four grand tents.
C. All the horses of the corps.
D. The train and machines.
E. Marquees of the officers.
EXPLANATION OF PLATE H.

F. Tents of the principal commanders.
G. Tent of the Commander-in-chief.
H. Sentinels for the police of the camp.
I. Sentinel before the tent of the Commander-in-chief.

EXPLANATION OF PLATE H.

FIGURE 1.

Shewing the Arrangements which are made for the purpose of Crossing a River on the Enemy's Side.

A. First division of troops appointed to go and examine the enemy's post, and to post itself to favour the passage.

B. and C. Second and third divisions posted behind the hedges to cover by their fire and that of the artillery the passage of the first division, and intended afterwards to pass in the same order.

D. Wood in which the enemy is supposed to be posted.

E. Hedges where the first division is posted on arriving beyond the river.

F. Dragoons posting themselves under the protection of infantry. These are posted on foot behind the hedges G. If it is impracticable, to remain on horseback in the plain.

FIGURE 2.

Representing the Disposition for the Passage of a River in Retreat.

A. Place chosen for the passage.

B. Place where the troops should land, after having gone along with the current of the river.

C. First half of the dragoons who have passed the river at the same time with the artillery, and who are posted behind the hedges to cover by their fire the retreat of the rest of the corps.

D. Horses of the dragoons C.

E. Second half of the dragoons, disposed defensively.

F. Ground where the remainder of the troops are to come to, and to form in succession.

G. Eminence supposed to be occupied by the enemy.

H. Redoubts which, if there be time to construct them, will render the passage safe and unmolested.
EXERCISE OF RIFLE CORPS AND OTHER LIGHT TROOPS IN THE FIELD.

It is by the rapidity of their movement that riflemen and light troops are distinguished: their peculiar province is to act in extended order.

File movements are in frequent use among them: in forming to the front, the inversion of files makes no difference; it matters not whether the right or left is leading.

Riflemen and light troops move in the field by signal from the bugle horn, and it is of great importance that the signals should be well defined and clearly understood, because there is no other method of conveying orders and intelligence from distance to distance, at least not with so much precision and dispatch. The officers and men employed should be masters of every signal which is used.

The manœuvres common to riflemen and light troops are extending and closing from and to any given point, firing, advancing, and retreating, forming the chain, and setting an advanced guard.

But there are other duties belonging to the service of riflemen exclusively, of which nothing but practice can convey an adequate idea.

Of Extending and Closing.

The files may extend from right, left, or center, according to circumstances, and to any number of paces: the rear rank men conform to the movement of their file leaders.

The usual distance of extended order is two paces: if it be meant to extend the files to a greater distance, either to cover the front of a corps, to mask a manœuvre, or for any other purpose, the commanding officer signifies it before the signal to extend is made.

In extending to the right, upon the signal, or word of command for that purpose, the whole face to the right except the left hand file, and step off in
quick time with *trailed* arms, the front rank being well locked up, and the rear rank men looking over their left shoulders, in order to halt their file leaders when at the required distance, for the accuracy of which the latter are alone responsible.

The men shoulder their arms as soon as they front, if extended at the common distance; but if they are extended more than two paces, they keep their arms trailed.

Both ranks dress, as soon as they are fronted, from the point which they extended from, and the rear rank men take a half pace to the right, in order, if necessary, to fire without impediment through the intervals of the front rank; in marching to the front, however, they cover again correctly.

In extending to the left, the files face of course to the left, the rear rank men looking over their right shoulders, and observing the same rules as before, the rear rank taking ground to the right of their file leaders.

In extending from the center, the wings face outwards, the center file standing fast; the rear rank men of the right wing conduct themselves as in extending to the right, and those of the left wing as in extending to the left.

The charge of the rear rank in this service is somewhat important; they are responsible for distance, and should they not calculate correctly, and halt their front rank men at their proper places, the line will be either too extensive, or not extended enough; some parts of it must be weaker than others, and the designs of the commanding officer may be consequently either partially or wholly frustrated.

In closing, every man faces and closes to the point from whence the signal is made, in quick time, or, occasionally, a gentle run, with arms trailed; they come up successively, and as they front they shoulder their rifles and dress.
Of Firing upon the Spot, both in close and extended Order, and Advancing and Retreating.

Both in close and extended order, the ranks fire alternately, it being a rule never to be departed from, that the whole are not to be unloaded at one and the same time.

Upon the signal to commence firing, the field officers and captains of the companies retire to the rear; the subalterns remaining in line.

In close order the senior officer in the rear of the company or division which is ordered to fire, gives the words "Rear rank, ready, present," and every man selects an object, and fires at his own discretion; when he has loaded, he touches his front rank man, as a signal for him to do the same, and as soon as the latter has fired and loaded, the former fires again, and so on alternately and independently until the cease firing is sounded.

This method is preferable to that of moving out so many files at a time from different parts of the line, as the line is preserved in good order, and the firing has a much better effect.

In extended order, the signal to commence firing is made, and the front rank begins independently without waiting for the word of command from any officer; the men of each file observe the same rules as in firing with closed ranks.

To fire in advancing, the signal to advance is followed immediately by the signal to fire.

The rear rank men pass by the right elbows of their file leaders, and move forward ten paces; when arrived at their ground, they select their object and fire. At this period the officers on the flanks of the front rank give a signal with their whistles, and the front rank move forward in the same way, passing by the left elbow of their rear rank men, and so on alternately.

The front rank is under the guidance of the subalterns, and the rear rank under non-commissioned
officers; the captains of companies are between the ranks.

As soon as the men have fired, but not before, the officers and non-commissioned officers must be careful to dress them as quickly as possible, and correct the distances, where correction is necessary.

To fire in retreating, the signal to fire is sounded, followed by the signal to retreat.

The front rank (i.e. the rank which happens to be in front) fires and retreats twenty paces to the rear of the other, in the following manner: — each man, as soon as he has fired, swings his rifle round under the left arm, the barrel downwards, and faces to the right about, then retreats twenty paces behind his rear rank, and fronts by coming to the left about, bringing his rifle at the same time down to his priming position.

When the leaders of the rear rank see the front rank formed and loading in their rear, they sound their whistles, and the rear rank follows the same movements as the other, and so on alternately.

Both in firing, advancing, and retreating, arms are trailed; when the halt is sounded, each rank preserves its own ground, facing towards the enemy. The officers and non-commissioned officers, in giving the signals, never move out of their places; they are at all times the points on which the rank must dress.

In every other respect, the rules which relate to firing in advancing must be strictly followed.

Of Skirmishing.

It is a general rule that never more than one-half of a body of riflemen must be sent forward to skirmish, the other half remains formed and ready to support.

When there is only one company, the right or left platoon, according to the discretion of the commanding officer, advances in quick-time sixty paces, from whence half of it moves forward eighty paces.
AND LIGHT TROOPS IN THE FIELD.

Further, and extends its files so as to cover completely the front of the main body from which it is detached; whenever the right platoon advances to skirmish, the half right platoon must be pushed on in their front, and extend themselves to the left, and so vice versa.

In this disposition they advance and retreat, keeping their relative distances: on the signals to commence firing, &c. the skirmishers conduct themselves as in firing upon the spot, advancing and retreating, &c. upon the common principles, and when the halt is sounded, the whole corps halts, facing the enemy, and the skirmishers cease firing, but keep their ground.

On the signal to close, the skirmishers close to the point from which they extended, and fall back without delay on the quarter platoon, or intermediate reserve in their rear; on the second signal to close, the latter reserve falls back upon the main body and forms in line.

With a view to the operations of a battalion, it is impossible to define the precise number of men which ought to be employed in skirmishing, as this depends on local circumstances entirely, and so does the distance at which the advanced platoons ought to be sent forward.

It is better, generally speaking, to detach from the flanks than from the center; the practice of advancing the right or left platoons of companies, and thus leaving successive intervals throughout the line, is bad upon every principle, and ought never to be resorted to on any occasion.

It is not, however, meant to be denied, that a necessity sometimes exists of detaching from the center rather than from the flanks, but in this event the detachment should be sent wholly from one point, and the wings immediately closed.

Should the skirmishers meet with a superior force which prevents their retreating in good order, and according to established rules, they must of course
get back as well and as fast as they can, taking the precaution of clearing the front of the main body in their rear, in order to give it an open field for its operations; the moment they are clear, the main body commences firing in close order, and thus covers their retreat.

The arms of the reserves are supported or slung, while those of the skirmishers are generally trailed.

Of the Chain.

In skirmishing, the men are dispersed from one another, and therefore they require a stronger reserve, in order to guard them from accidents, than a chain which consists of small divisions, never less than four men each, whose mutual dependence and exertions give strength and energy to all their operations.

The object of a chain is to scour a tract of country, by means of these divisions or small bodies, clearing the woods and inclosures of the enemy, and occupying, as far as circumstances will allow, every favourable position; the duty of a chain is consequently more permanent than that of the skirmishers.

When one company only is employed, three-fourths of it advance one hundred and twenty paces to form the chain, by extending, when they arrive at their ground, either from the right, left, or center, according to circumstances, in divisions of two files each, at ten paces from one another, the remainder being formed in the rear, as a support, as nearly behind the center of the chain as may be.

Where several companies are employed, such a proportion may be detached for this, and, generally speaking, for any other purpose, as is consistent with the views of the commanding officer.

The chain, with its reserve, moves forward and retreats, regard being had to the preservation of the distance and alignment, upon the usual principles. To fire upon the spot, upon the signal to commence
firing, the right hand man of each division advances three paces, selects his objects, and having fired returns to his place; the other three men perform the same successively, and by this means the firing is kept up without intermission, as long as circumstances require it; independent of this mode of firing, the ranks fire alternately, advancing and retreating, precisely the same as when skirmishing, the two front or two rear rank men of each division of the chain always moving together.

The chain may change its front, by previously facing to either flank, and forming in a new alignment; the reserves at the same time filing from the right or left to the front, and taking up a parallel position in its rear. Skirmishers may do the same.

On the signal to close, the men close to the point from which they extended, and resume their places in the line.

*Of the Advanced Guard.*

One hundred men are sufficient to form an advanced guard for the strongest body of troops: It may be composed of detachments, like all other guards, of so many men from each company.

The complement of officers attached to it, is one captain and three lieutenants.

An advanced guard is divided into four sections, numbered from the center to the flanks: No. 1, is stationed five hundred paces by day and three hundred by night, immediately in front of the column of troops to which it forms the advance, and is considered as a central or rallying point to the other sections: No. 2, is detached two hundred paces in front of No. 1, with a party of a serjeant and six men pushed on one hundred paces further, to form the head of the guard: Nos. 3 and 4 are detached two hundred paces to the right and left of No. 1, with which they keep up a regular communication by means of small detachments or patroles, and they send out on their outward flanks, to the distance of
one hundred paces, scouts in as large a proportion as
their numbers will allow, in order to guard against
surprise: they also send forward, one hundred paces
to their front, a non-commissioned officer and six
men, who extend themselves in skirmishing order
for a similar purpose.

The duty of an advanced guard is to insure the
safety of a column by scouring the whole country
in its front, penetrating through woods and in-
closures, and searching into villages.

The captain of the guard is the channel of com-
mutation between the commander of the column,
and the officers who are under his own personal
command; and it is to him alone that the officers
commanding the sections of the guard transmit in-
telligence and an account of their observations.

In moving forward or retreating, the sections must
be careful to preserve their distances from one an-
other and the general alignment, as well as circum-
stances will admit; on the other hand, the scouts
must keep a sharp look out on all sides of them, and
never lose sight of the sections from which they are
detached, but join them immediately on the signal
to close being sounded; on the second signal to
close, the sections Nos. 2, 3, and 4, close, and form
to No. 1.

A rear guard is nothing more than an advanced
guard reversed: flank guards are formed upon the
same principles: all guards of this nature are in-
tended for the security of troops upon the march,
and they consequently face outwards from the co-
lumn towards the enemy, as soon as the signal to
halt is made.

Of the Rifle-Corps, the Arms and Accoutrements,
Manœuvres, and Manual Exercise.

Corps of riflemen having long constituted a part of
the military establishments on the Continent, and
during the disastrous war with the colonies, the exe-
cution done by the American and Hessian riflemen, or
Yagers, who, posted behind thickets, and scattered wide in the country, frequently picked off the officer, and galled and annoyed the king's troops in their march, constitutes a permanent feature in the military history of that period; and in the more recent expedition to Holland, the dauntless courage and steady perseverance of British troops were, in many instances, exclusive of the loss of many of our gallant officers, ineffectually opposed to the rapid movements, and too fatally certain fire of the enemy's scattered riflemen.

The uniform of the officers, is a jacket of dark green cloth, with black velvet collar and cuffs, trimmed with silver lace; dark green pantaloons, and half-boots: their arms and other appointments are a helmet, a sabre, and pouch, containing a pistol and ammunition; to the pouch-belt is affixed a whistle, suspended by a chain, which is used as a call to the men in performing the different movements, and operations of the corps.

The privates are armed with a rifle-gun, the barrel of which is brown, and is two feet and an half in length; a sword, which may be used separately as such, or may be fixed on the rifle as a bayonet; a pouch for cartridges, and a powder-horn suspended from a cord flung over the shoulder. The sergeant's appointments are the same as the privates, from whom they are only distinguished by a whistle on the pouch-belt. They do not wear knapsacks, but carry a sort of small leather portmanteau which is strapped to their shoulders.

The arms are of the best manufacture, and no expense has been spared in contributing to their perfection. Their rifles will throw a ball, with the utmost precision, to the distance of 300 yards, and as every shot from a rifleman ought to succeed, it is intended generally to load with a greased, rag, and running ball, which is found by experience to give a juster range than loading with cartridge.

All the operations are executed by the sound of
the bugle, as the principle object in their extended movements is to combine the most perfect regularity with the facility of forming rapidly, at any point which the emergencies of the service may render necessary.

Of carrying the Rifle.

The rifle is to be carried in the right hand at arm's length, as in advanced arms, the cock resting upon the little finger, the thumb upon the guard and forefinger under it, the upper part of the barrel close in the hollow of the shoulder, and the butt pressing upon the thigh.

The several orders, viz. Present Arms, Order Arms, Shoulder Arms, Support Arms, Carry Arms, Trail Arms, Shoulder Arms. From the Order to Trail Arms, and from the Trail to Order Arms, are precisely the same with the rifle as with the musket.

Firing at the Target.

In selecting these instances in which riflemen act exclusively as such, we shall separate these manoeuvres which are peculiar to them, from those which they practise in common with other light corps, observing only, that when a company of riflemen is to act with closed ranks and files, they follow the same regulations as are adopted for the infantry in general, and before the soldier is instructed in the manoeuvres of light troops, he should be instructed in all the manoeuvres practised by the regular infantry.

It is not very frequently that riflemen are required to act in close order; and in this corps, whenever it is practicable, therefore, the officers should oblige the men to load with the powder measure and loose ball: loading with loose ball and firing at the target, will, therefore, constitute the principal instructions for recruits.

In addition to his other exercise, the rifle recruit must be constantly exercised in firing at the target, the dimensions of which ought to be at least five
feet in diameter; in order that he may become acquainted with his rifle, he should be first taught to fire without a rest, and should begin to fire at the target at the distance of fifty yards, which he may increase by degrees to three hundred.

It is particularly necessary that the rifleman should be made acquainted with the nature of the sights and aim of his rifle: he should also be taught to use the plaster (a piece of greased leather or rag) in loading, with a loose ball, and how to force it down the barrel, observing that it should lay close upon the powder without being forced down so as to bruise the grains.

The target being painted in circles, and of dimensions to be easily hit, at the different distances according to his proficiency in firing, the rifleman will thereby be enabled to see his fault and to correct it. The officer also should take care that during the practice every man should learn the proper charge for his rifle, and correct it accordingly.

Riflemen should also be practised to fire and load as they lay on the ground.

Of Priming and Loading, and Firing at the Target.

Words of command.—1. The company will prime and load.

At this word the fugleman steps out in front.

2. Prepare to load.—For this the fugleman gives the time in two motions.

At the 2d motion, the rifleman half faces to the right, and in the motion brings down the rifle to an horizontal direction, just above the right hip, the left hand supports it at the swell of the stock, the elbow resting against the side, the right thumb against the hammer, the knuckles upwards, and elbow pressing against the butt, the lock inclining a little to the body, to prevent the powder from falling out.

The officer now warns the men in going through the loading motions—to wait for the word of command, at which caution the fugleman falls in.
At the word *One.*—The pan is pushed open by
the right thumb, the right hand then seizes the car-
tridge with the three first fingers.

*Two.*—The cartridge is brought to the mouth, and
placed between the two first right double teeth, the
end twisted off and brought close to the pan.

*Three.*—The priming is shaken into the pan; in
this the head must be bent to see that the powder be
properly lodged; the pan is shut by the third and
little finger, the right hand then slides behind the
cock, and holds the small part of the stock between
the third and little finger and ball of the hand.

*Four.*—The rifleman half faces to the left; the
rifle is brought to the ground with the barrel out-
wards by sliding it with care through the left hand,
which then seizes it near the muzzle, the thumb
stretched along the stock; the butt is placed between
the heels, the barrel between the knees, which must
be bent for that purpose; the cartridge is put into
the barrel, and the ram-rod seized with the fore-
finger and thumb of the right hand.

*Rod.*—The ramrod is drawn quite out by the
right hand, the left quits the rifle, and grasps the
ramrod the breadth of a hand from the bottom,
which is sunk one inch into the barrel.

*Horn.*—The cartridge is to be forced down with
both hands, the left then seizes the rifle about six
inches from the muzzle, the rifleman stands upright
again, draws out the ramrod with the right hand, and
puts the end into the piece.

*Return.*—The ramrod is to be returned by the
right hand which then seizes the rifle below the
left.

*Shoulder.*—The right hand brings the rifle to the
right shoulder, turning the guard outwards, the left
seizes it above the hammer-spring, till the right has
its proper hold round the small of the stock, when
the left is drawn quickly to the left thigh.

As soon as the recruits are sufficiently perfect in
these distinct and separate words of command, they
should be accustomed to go through the motions with the following words of command only:

1. The company will prime and load.—At which the fuleman steps in front.

2. Prepare to load.—The fuleman gives the time to this motion.

3. Load.—The fuleman falls in.

All the motions in loading as prescribed above, are here to be performed, and as it is of much more importance that a rifle should be properly than expeditiously loaded, particular attention ought here to be paid by the officer, that no single motion be omitted.

Of making Ready and Presenting.

Riflemen should at first be accustomed to make ready and present methodically; and as they will seldom be in a situation to fire by word of command, they should be thoroughly practised in this manœuvre.

The firings may be divided under three heads, viz. in Advancing, in Retreating, and on the Spot.

Of Firing in Advancing.

The commanding officer first orders the signal—to march to be sounded, and immediately after the signal—to fire.

On this the rear rank moves briskly six paces before the front rank, each man having passed to the right of his file leader, makes ready, takes his aim, and fires; and as soon as he has loaded again, trails his rifle.

When the serjeant of the front rank sees that the rear rank has fired, he steps in front, gives a signal with his whistle, upon which the front rank moves briskly six paces before the rear rank, each man then presents, takes aim, and fires; following the directions which have been given to the rear rank. Thus each rank continues alternately firing and advancing. When the firing in advancing is
to cease, the commanding officer orders the signal for *halt*, after which not a shot must be heard.

**Of Firing in Retreating.**

At the signal of the bugle to *commence firing*, immediately followed by the signal to *retreat*, the first rank (or that which happens to be in front) makes ready, takes aim, and fires, goes to the right about, marches with a quick step twelve paces in the rear of the second rank, fronts, and loads. As soon as the serjeant on the flank of the second rank sees that the first is formed and loading, he steps two paces to the front, and gives the signal with his whistle, upon which the second rank makes ready, takes aim, and fires; then faces to the right about, marches with a quick step twelve paces into the rear of the first, fronts, and loads. In this manner both ranks retire supporting each other; when the fire in retreating is to cease, the commanding officer orders the signal for *halt* to be sounded.

**Of Firing on the Spot, with closed Ranks.**

1. *The company will fire.* 2. *Company.*—At this word the right hand file of each platoon takes three quick paces to the front, the rear rank man steps to the right of his file leader.

3. *Ready.*—At this word, the rifle is brought by the right-hand before the center of the body, the left seize it, so that the little finger rests upon the hammer-spring, and the thumb stretched along the stock, raising it to the height of the mouth, the right thumb on the cock, and four fingers under the guard; when cocked, which must be done gently, the right hand grasps the small of the stock.

4. *Present.*—The rifleman half faces to the right, the butt is placed in the hollow of the right shoulder, the right foot steps back about 18 inches behind the left, the left knee is bent, the body brought well forward, the left hand without having quitted its hold, supports the rifle close before the lock, the right
elbow raised even with the shoulder, the fore-finger on the trigger, the head bent, and cheek resting on that of the rifle, the left eye shut, the right taking aim through the sight; as soon as the rifleman has fixed upon his object, he fires without waiting for any command. When he has fired, the right hand quits its hold in facing to the right about, the left swings the rifle round into an horizontal position with the barrel downwards; the rifleman resumes his post in the platoon, in fronting to the left about, brings his rifle into the positions to prime and load, half cocks, and proceeds to load, going through all the above motions without waiting further for the words of command.

When the riflemen are perfect in this, they will be instructed; that at the signal of the bugle to commence firing, two right hand files of each platoon or section, according as the company may be told off, are immediately to take three paces to the front, the rear rank men step to the right of their file leaders, present, and each fires as he gets a proper aim, then resumes his place in the company and loads again: when the two first have fired, the two next advance, and so on through the company.

This mode of firing is adopted to prevent the whole from being unloaded at the same time; when, therefore, the company has fired once, according to the above regulations, every file, on being loaded again, will advance three paces, and each man will take his aim and fire, and then immediately resume his place in the company, road, &c. The officers must invariably remain in the line during the firing, and are on no account to stir from the spot; and as soon as the bugle shall sound the signal to cease firing, and every man is loaded and shouldered, they may dress their platoons.
ON THE ATTACK OF A DETACHMENT OF FOOT IN AN INTERSECTED COUNTRY.

The most preferable, most powerful, and most decisive mode of attack is, no doubt, to advance in line, to charge by whole or half divisions, or battalions, to move on with the doubling step, and with fixed bayonets to break into the enemy's line; but the nature of the ground does not admit of this mode of attack in an intersected country, where prudence requires that tirailleurs be sent before to cover our march, and reconnoitre, previous to the attack, the movement, position, and strength of the enemy.

In this case, therefore, according to the nature of the ground and our position, two companies of a battalion, for instance, are sent on that service; each of these companies detaches one or two divisions to serve as tirailleurs. These tirailleurs are to be divided into even and uneven men, and should be told that they must support each other by their fire, so that when one fires the other must have loaded; that they must avail themselves of every favourable circumstance which the nature of the ground may offer, and take shelter behind a tree, wall, hedge, &c. that they must challenge one another, both to keep up their spirits, and to advance, halt, fall back, or move to the right and left on the same line; and that they must take advantage of every movement of the enemy to annoy them. If, for example, the enemy's tirailleurs should move to the right, and try to gain the left flank of our tirailleurs, the latter must endeavour to gain the left of the enemy, by which means they will find it more easy to compel them to fall back than by extending their left flank, whereby they would weaken themselves; or if they should perceive, that, by the above movement, the enemy uncover their center, they must force it, and fall on the flanks of the enemy's tirailleurs to the right and left. The troops which
are destined to support them will take care to cover their retreat. If one of the tirailleurs, in a broken and much intersected country, should chance upon a foot-path, defile, ditch, &c. which leads to the enemy's flank or rear, he calls out to his comrades, This way!—Thirty and forty, nay, fifteen and twenty men, may frequently on such an occasion make a diversion, attended with important results, while, on the contrary, when one, two, or three men, move on silently, they can do nothing at all. The weaker they are on such an occasion, the greater should be the noise they make on advancing against the enemy's flank or rear; they should fire much, though they can take no aim. Yet, this sole case excepted, they should never fire at random, and of three or four shots, one at least should tell. The tirailleurs should be selected from the most trusty and most able men; they should be good marksmen, and have the best firelocks. If any sharp-shooters are with the corps, they should be distributed on the most advantageous points, and each sharp-shooter attended by one or two tirailleurs.

The other divisions of the two companies, divided into flanks and center, follow the tirailleurs at the distance of eighty paces, in close order, to relieve, and, in case of need, to support them.

The officers and non-commissioned officers, who belong to the divisions of tirailleurs are to march at a small distance in their rear, in order to inspire the men and direct their movements.

The four remaining companies of the battalion, supposed to consist of six, follow at the distance of eighty paces in rear of the support-divisions, or of one hundred and sixty paces from the tirailleurs, either divided into companies, or in line, to give support where it is wanted, or to manœuvre on the flanks of the enemy's tirailleurs, and, as much as circumstances will admit, to annoy and harass the enemy's corps opposed to ours.
ON THE COLUMN OF ROUTE.

Of all the various branches of military instructions, there is none more important than that which relates to the column of route. If this instruction be not founded on just principles, it will frequently happen that the rear of a column in march will be obliged to run, in order to regain its distance, or the head to stop that the rear may have time to come up; the column occupying too large a space will not be able to resist an unexpected attack, the march will last several hours longer than if it were made in due order; the troops will be harassed, and the commanding General, unable to calculate the time in which a column is to march over a given ground, will be at a loss to combine with precision the collateral march of several columns.

The common pace of a column in march, when the roads are good and the country flat and even, should be of from 85 to 90 paces; under such circumstances, this place may be easily kept up, whatever may be the depth of the column. But, if the roads be heavy and cumbersome, or the column is to march over ploughed ground, or over mountains, it must move on at the rate of about seventy-six steps in a minute. It is for the commander of a column to regulate its pace according to existing circumstances. A column, composed of one regiment only, may of a brigade, may be easily carried on at a pace of ninety to a hundred steps in a minute, if required.

The most certain mean of marching well, consists in the column preserving a perfect equality and regularity of movement; if it meets with any obstacle, which obliges one or more divisions to slacken or shorten its steps, the original uniform pace must be resumed as soon as the obstacle is cleared.

A division must never leave too large an interval between its head and the rear of the preceding di-
vision; but it may sometimes be necessary to shorten the distance, in order to retard the march, as will appear from the following remarks:

If the head division, for instance, meets with a difficult passage, a rapid declivity, or any other obstacle whatever, whereby it is necessitated to slacken or shorten its pace, the next following division must not do the same, but, on the contrary, preserve its uniform step until it reaches the same spot, although it should be obliged to close up hard to the preceding division; the third division must observe the same rule in regard to the second, and the fourth with respect to the third, and so on to the rear of the column.

If, instead of observing this rule, all the divisions of the column were to slacken or shorten their pace at the same time as the head division, it would naturally follow, that, supposing the column to be 600 fathoms in length, the rear division slackened or shortened its pace at the distance of 600 fathoms from the obstacle in question, and in order to prevent the column from lengthening out, the head division would be further obliged to continue marching at the slackened pace, 600 fathoms beyond the above obstacle. How much the march of a column meeting with several such obstacles would be retarded in this case, may be easily conceived.

Again, if the distance, or intervals between the different divisions, were constantly to be preserved, without the least deviation, it would necessarily happen, that if the head division slackened or slackened its pace, the second division, not perceiving it, but after one or two steps would shorten its distance; the third, fourth, and all following divisions doing the same, it must naturally result from thence, that every division would afterwards be obliged to mark time, or shorten its steps, until the proper distance be regained, which could not but be attended with much loss of time and delay, and produce continual wavings and undulations in the column.

All these inconveniencies will be avoided, if every
division preserves an equal pace, until the moment when it meets the obstacle whereby it is necessitated to slacken or shorten its steps; the proper distances may afterwards be easily regained; because every division resuming its primitive pace, as soon as the obstacle is cleared, while the next following is obliged to slacken and shorten its steps, on passing the same: it will naturally happen, that the first, or head division of the column, gains distance from the second in the same proportion as the second had closed up to the first; which—taking place successively in regard to all the divisions, each of them at the moment it has cleared the obstacle in question, will have regained its proper distance from the preceding division.

By this means a column can never be lengthened out; but when it meets with a height or mountain that part of the column which is ascending will have shortened its distance, in proportion as it shall be obliged to slacken or shorten its pace on ascending; so, that if it had been necessitated to retard its pace by a sixth, for instance, a sixth part of the space necessary for forming in order of battle, will be wanting in regard to every division of that part of the column, while the divisions of the rest of the column which are yet marching in the plain, or have already ascended the height, will have their proper intervals; if at this time the column were obliged to form line to a flank, each of the divisions, whose intervals should not be equal to the extent of their front, would have nothing to do but to break off one or two files, according to the want of ground, which could not be attended with the least inconvenience, as these supernumerary files of each battalion might form one or two platoons, to be posted as a reserve in the rear of their battalions, which might serve to reinforce such parts of the line as should stand in need of support.

If instead of forming line to a flank, the column were obliged to form in order of battle, either to front or
COLUMN OF ROUTE.

rear, it would be able to execute this evolution in less time in proportion to the lesser depth of its order of formation; so, that in every point of view, the above method appears preferable to any other, inasmuch as it renders the march of a column more expeditious and less fatiguing, without exposing it to the least danger in case of an attack.

Whenever the head of a column has to descend a height, it should preserve the same pace at which it marched in the plain.

When the commander of a column judges it necessary to quicken or slacken its pace, he must send orders to the commanders of the different battalions, to accelerate or slacken their pace by that of the preceding division, and he must himself insensibly quicken or slacken the pace of the head battalion, until it perfectly answers his views.

If a column be composed of several battalions, the commander should always have an aid-de-camp in rear of the column, that if the rear should find it difficult to follow, he may be speedily informed of that circumstance.

If the column is marching by platoons, and some files only are obliged to break off from want of room, the commanders of the platoons may order the files to file off to the right and left, and form in rear of the platoon; but, if the pass be so narrow as to render it necessary that the front be diminished by half, in this case it will be most advisable to break off by sections.

The sections must always step and lengthen out their pace when they oblique, either to break off or form platoon; and this must likewise be observed by the files which are to form in rear of the platoon, or to return into line. When the platoons break off or form successively, it is a point of the utmost importance that no division slackens or shortens its pace, while the preceding one performs that movement, as otherwise the column would lengthen out.

It is an incontrovertible military maxim, that a
column can never march on a less front than six files, without being subject to the inconvenience of lengthening out. If a column of route were to march on a front of three files, it would occupy the space which it takes up in order of battle, and in case of an unexpected attack, it would run the hazard of being defeated before it were able to form. From these considerations it is indispensably necessary, that whenever the nature of the ground does not allow to march on a front of six files in the vicinity of the enemy, the march be executed with the cadenced step and in close column.

If the column should meet with a pass so extremely narrow as not to be passed but by one or two files in front, the commandant of the column must order the files to pass, closed up as much as possible, and without the least loss of time; the sections must form as soon as they have passed; the head must move on until there be sufficient room between it and the defile for the whole column to form in close order: this being done, it must halt until the rear has completely cleared the defile.

INSTRUCTIONS FOR THE FORMATION, FIELD-EXERCISE, AND MOVEMENTS OF THE TROOPS INTRODUCED INTO THE AUSTRIAN SERVICE.

1. Formation of a Square, by running up by Files.

The word being given—Attention, the battalion will form a square to the rear, both wings to the right, face. The six center divisions stand fast, and both wings face to the right at the same time.

Here the further command is given.—The battalion will run up by files, to the right and left, march. Both wings put themselves in motion at the same time, and the right wheels from the halt to the left, and the left to the right, preserving carefully their front, that not the least opening may happen,
and that the commander of the battalion may every moment be able, during the filing up, to give the command—halt, front—and present every where a compact line to the enemy, if he should gallop up to attack, which cannot be done, if for the purpose of moving quickly up by files, the battalion faced to the right and left, as in this case, it must either move very slowly, or have openings every where. Both wings form in this manner, each in six divisions, and as soon as a division is formed, the commander gives the word—front, dress—and the rank-firing can immediately be commenced.

To form in line, from a square, the command is given—Attention—the battalion will break the square, and form in line—to the right, left—march—and the line is formed by wheeling up, in the usual manner, as nothing is now to be apprehended from the enemy.

2. March by Files, from the Center.

On the word being given—Attention—the battalion will march off from the center—to the right, left, face—the whole face, except the two officers in the center, with their flank and covering-men; on the command—march—the center files which have not faced, step off forwards, the rest wheel successively, and the center rank men deploy inwards, together with their file-leaders. While the two center divisions are thus filing off, the music and pioneers deploy in after them, and then follows the closing up of the other divisions.

3. Formation of a Square from the March in File.

As soon as a defile, or other obstacle, is cleared, the head of the column receives the command—to the right, left, march—from which moment it takes very short steps, and the whole march to the right and left to form line to front, the other divisions file up on the right and left, to form the flanks; as the head division takes very short steps, the rest may remain
perfectly closed. The flanks being thus formed, the other divisions march likewise to the right and left, and form on the rear.

4. **Marching up by reverse deploying, and wheeling about.**

Suppose a column, which has marched off from the right, to find itself, in the case of marching up and forming, not on the head, but rear division. For performing this evolution, give the command—*To the right and left about, wheel, march*—Further—*Attention—the column will deploy to the left and wheel to the right about, march.* The deploying is then performed in the usual manner; as the first division takes its ground by the head division, the former wheels to the right about, and the same is done by all the other divisions, as soon as its flank division is uncovered.

This march can be performed by the infantry from close column, as well as open order, if only a previous caution be given of so doing.

The cavalry perform the same movement in the usual manner, with this exception only, that the commander of a division, next to the word *front,* gives not the command, *march,* but, *to the right about, wheel.*

If the divisions have marched off by the left, everything is done inversely. They may march up from the center equally well. In this case give the command—*Attention—the column will march up from the center, right wing to the right wheel*—and further—*Attention, the column will deploy to the left, and the right wing wheel to the right, march.*—This marching up from the center can be performed equally well, for the purpose of fronting to the rear, in which case the right wing receives the command to wheel to the left, both wings deploy to the right, and all the divisions of the left wheel to the left about.

In general, no case can possibly happen in which this way of marching up cannot be resorted to. It
saves much trouble, and is attended with the additional advantage of our being able, every instant, to march up and form both to the front and rear.

5. Attack of Infantry.

The troops marching in line, the word is given—Halt, an attack will be made, whole battalion, make ready, march—march—Hereupon the battalion having advanced, at the deploy step, within about sixty paces from the enemy, the command is given—halt—and instantly after—present, fire, march—march.—After the firing, the firelock is brought to the recover, without being half-cocked; the battalion advances again at the deploy-step, halts at the word halt, brings down the firelock, and closes with the enemy.

6. Formation in two or three Ranks.

From the unequal strength of the different battalions and divisions, the following principle has been laid down for forming either two or three deep. Whenever a division of horse or foot, if drawn up three deep, forms no more than six files, they are to be-formed two deep, but when the divisions contain upwards of six files, the formation in three ranks is to be preserved; yet, on marching up, the third or rear rank is to be formed into companies, and these into a battalion of three companies, which is to be drawn up as a reserve corps of 60 or 80 paces. The advantages to be derived from this mode of formation cannot but be obvious to every military man. It is, however, necessary that the third rank should be well exercised in quickly forming companies during the march, so that the commander of the battalion may have nothing to do, but the word—Third rank, halt, form your companies.

7. Advance with Tirailleurs.

If a corps, for instance a battalion, is to attack the enemy in a broken and intersected country, the tirailleurs should never consist of more than a third of the
8. Charge during the Advance.

When a charge is to be made while the troops are advancing, they are in future to march in line, and on the word halt, the platoons, half companies, half divisions, divisions, or battalions, charge on the halt; and having completed the charge, they march again. The charge-step censes of course, since it was introduced for no other purpose, but the better to preserve the connexion among the divisions, which were constantly broken; but now that this breaking off has no longer place, it would be ridiculous to expose the troops longer than is necessary, to the enemy's fire, by advancing at the charge-step. In a charge by battalion, the word—battalion, march—ceases also, since the battalion has already marched to the point where it can make a good use of its fire. Should, however, to attain this point, any further advance be required, in this case, on the caution—battalion or division, march—it advances at the deploy-step.

9. Charge by Section formed in Ranks.

The first time the section fire as formerly, but afterwards the fire is continued by the two contiguous sections supporting each other, with this caution, however, that the two front ranks fire first, and then the two rear ranks. On the first fire, the flank divisions begin firing, afterwards one gives the word—platoon—when the adjoining one makes ready.
10. Formation of a Square.

Instead of the mode of forming a square hitherto observed, it is in future, to be formed by files two deep; for instance if it is to be formed to rear, from battalion marching in line, the three inward divisions of the right and left wing, on the word—to the right, face—face to the right; on the word—march—the six divisions of the right wing, nearest to the center, file, in quickest time, into the right face, and the six inward divisions of the left wing, into the left face, and the outward three divisions of the right and left wing form the rear face. As soon as each division has filed into the flank and rear faces, the word is given—front—and the front-face as well as every other division, as soon as it has fronted, can reach the enemy, and its head is disengaged from the rear of the column, charges by platoons. The cannon are placed in front of the corners of the square, and the powder-carts and horses within it. The line is formed from the square on the word being given—half face to the right, left, march—so that each man is covered by his file-leaders. If the square is to be formed to front, the evolution is to be made in the same manner, yet without facing. The face which stands fast, faces to the right, and the filing divisions front as soon as they have filed in.

When the line is to be formed from square, the face which stands fast, faces to the left; all the other divisions file in with inverse front, and dress as soon as they have filed in.

It is however to be observed, that it is not intended here that the troops should, in a strict sense, march by files, but that each man of the right wing should march with his right shoulder close to the left of his sidesman, after having faced to the right, whereby the line is not broken in the same degree as by filing; and besides, during the marching up, the troops can halt, if required, front, and keep off the
enemy's horse, though the line should not be straight, but form a semi-circle or angle.

As to the defence of the square, it is indispensably requisite, as it is in general in every defence against horse, that the infantry, which composes the square, should be cool and collected, and that the troops should be convinced that their safety depends less on firing, than on carefully preserving their fire, until it is sure to do execution. When the cavalry advance, the infantry present, and if the former retreat, bring down the firelock. There are numerous instances of infantry, which behaved in this cool and collected manner, having been respected by the enemy's horse; but if on the contrary, foot-soldiers throw away their fire, during the time they prime and load again, a determined cavalry are sure to succeed.

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**ON THE DEFENCE OF POSTS.**

*WHEN* an officer intrusted with the defence of a detached post, has taken every precaution which prudence suggests, in reconnoitring the adjacent country, he ought to take possession of it in the following manner:—The infantry remain under arms in the middle of the post, while the commanding-officer, escorted by a small detachment of horse, makes the necessary arrangements for the safety of his post.

Having examined the places proper for his guard, defence, and retreat, as well as the dangerous points by which the enemy can make approaches secretly to surprise him, he should choose the most convenient in front of this post, for fixing his grand guard, which must face the enemy. He must point out the heights for this guard to place their vedettes, and regulate the number, according to the exigencies of the situation. In a covered country you should not be sparing of them, and reinforce every guard. Fifty paces in front of the grand guard, a subaltern officer,
or an under officer, with eight or twelve horse, should be always ready to go and reconnoitre, when the vedettes have discovered any hostile party.

The grand guard being fixed, you should form another in the middle of the village, called the ordinary guard, composed of cavalry and infantry, placing sentries at the entrances, and vedettes all round, the last within sight of each other. A picket should also be fixed before the quarters of the commanding officer, which should be near the ordinary guard, and the whole corps. In the day, half the cavalry of the picket must keep their horses bridled, and ready to mount; but if the enemy be near, they must remain on horseback, and the other half unbridled until the hour of relief.

If there be any dangerous place, capable of covering the approaches of the enemy, in the environs of the post, and out of the circuit of the patroles, a guard should be placed there, more or less strong, according to the importance of the place, and care should be taken to preserve the communication. The guards and pickets being placed, the detachments sent out on the road must be called in, and go to work, to lodge the party in the gardens that open upon the country, and the commanding officer's quarters, beating down the hedges, filling up the ditches, and levelling a piece of ground, large enough for the formation of the whole corps. The horses must be put in barns contiguous to the gardens; and if there should be no barns, sheds may be substituted, open on one side, that the horses may go out altogether in case of an alarm.

The officers should occupy the houses in the neighbourhood of the sheds, and one of each company remain day and night with the company, to prevent any of the men from entering the village, without leave, upon any pretence whatever. The commander of the corps must inform the officers of the place he has chosen for the rendezvous, in case of a retreat, which place should be at some distance from the vil-
lage, and on the side to which it appears to him most convenient to retreat. At sun-set the grand guard must return to the post, and join the picket; one half of each must mount alternately till day-break, when the grand guard returns to the place they occupied the preceding day. The sentries and vedettes should be doubled, and all the passages shut up with wagons, placed in two rows, except one for sallying out in case of a retreat, and made sufficiently wide for the passage of the patrole, or the whole of the cavalry.

The corporals of the ordinary guard should lead the relief of the vedettes every hour, and go with the parties they have relieved, to the distance of about an English mile, to examine the environs. Besides this, the captain of the grand guard, should send two patroles in the night: to fill up the intervals, they should set out about half an hour after the corporals, and make the same round. On returning to the post, the corporals must make their report to the officers of the ordinary, and the conductors of the patroles to the captain of the grand guard.

A little before sun-set, or sun-rise, a grand patrole, detached from the corps, should be sent, under the conduct of an officer, to search the whole environs of the post minutely, especially the dangerous places, because at these times the enemy are most likely to attempt a surprise. If the patroles discover them, they will be in a state to repulse them, or at least to harass them, till the commanding officer, upon the first notice, draws up the whole corps. The officers should take great care to instruct the sentries in their duty, explaining it to them every time of their mounting, and forbid them to smoke, as the least fire can be easily perceived in the dark, and serve to direct the approaches of the enemy. No sentry must move more than fifty paces to the right, and as many to the left of his post, or ever go under cover, however bad the weather may be. No soldier must be allowed to go out of the post without leave of the
ON THE DEFENCE OF POSTS.

commanding officer; and in order to prevent desertion and marauding, the sentries and vedettes must be charged to let no soldier pass on any pretence whatever.

The vedettes must stop all passengers, and take them to the next sentry, who must call a corporal to conduct them to the commanding officer. If there be a great number passing at once, the vedette, at the challenge, must hasten to stop them at a hundred paces, till the officer has sent to reconnoitre them; but if he find them to be a party of the enemy, he must fire on them, and retire. At the first alarm, the grand guard and picket ought to mount, and each of them to detach a subaltern officer immediately, at the head of the best mounted horsemen, to encounter the enemy; the rest of the grand guard, and cavalry of the picket, must follow immediately, led by their captains, to sustain the first detachments, to repulse and keep back the enemy as long as possible, and to give time to the commanding officer to form the whole corps.

If the commanding officer observes that the enemy are not in great force, he must, without the least hesitation, put himself at the head of his cavalry, and instantly charge the enemy, pouring in upon them with his whole force, which is the best way to succeed; and in the mean time the infantry should form to sustain the horse. A very material circumstance should not be forgotten here, which is, that at the setting out of the detachments of the grand guard and picket, all the infantry belonging to the latter should march immediately to the place appointed for the rendezvous, in case of a retreat, and a strong detachment of cavalry should follow to occupy the place. If it is at the entrance of a wood or some covered place, which the enemy may occupy, and thereby cut off your retreat, you must prevent it by placing the infantry of the picket in the post, to remain there day and night, with a lieutenant, at the head of twenty horsemen, to clear the ground around
If the enemy is too superior in numbers, and appears determined to form an attack on that side, the commanding officer should get there before, with all his force, to oppose him, until all his detachment join, and then regulate his retreat in such a manner, as to fall back without confusion and disorder.

In order the better to secure a post, which you expect to occupy for some time, and where you foresee that the enemy will probably disturb you, it will be proper immediately to employ some of your people, with the inhabitants of the neighbouring villages, to throw up intrenchments in the most dangerous places, to make abatis in the woods, to place horses in the fords, and to dig pits at the entries, without defence. If a bridge should happen to be in front or on the flanks of the post, by which the enemy can facilitate his approach or retreat, it must be instantly destroyed, unless you should find it of service to you, in which case it should be defended by a strong guard.

To regulate the attack and defence most advantageously, you should take care to observe the places by which the enemy can approach, and form a plan of operations for cutting off, or taking in flank, the different routes which he can attempt, you should conform your officers of your plan, and not fail to listen to the advice of those, whose talents and experience render them competent judges of your design. These arrangements will be of great use in surprising the enemy’s parties, which may come from time to time to reconnoitre the post. If the enemy approaches in the night, take care how you attack him; you cannot reconnoitre his force, and you must suppose that he is informed of yours.

Do not suffer any suspicious women to approach the soldiers, their visits are dangerous to your people, and the enemy frequently employ them to discover your strength. Let no deserter stop in your place; and if he comes in the night, keep him until daybreak, and then send him to the main body of the
army. Every party that approaches your post will profess to belong to you; but if they are not provided with a proper passport from the General, or if you do not know any of the officers, trust neither to their word nor their uniforms; desiring them to return the way they came, telling them, that if they do not, you must treat them as enemies, and take care that your party remain under arms until they are out of sight of all their guards. This conduct will render other detachments attentive. The commanding officer must oblige all the officers to remain near their command, and to regulate their meals, so that some of them may observe the men, while the rest are at table.

An experienced officer is well convinced that he cannot be too cautious of the schemes of the enemy, who frequently will cause false alarms, to lead you to relax in your vigilance, or decoy you into deceitful security, of which sooner or later, you become the dupe. We are not of the opinion of those military men who despise false alarms, and who, to spare their people, are so infatuated as not to take arms until they are sure of the approach of the enemy; on the contrary, we think ourselves authorised by experience, to insist on preparing for action at the least noise of the vedettes. Even if it be another party of your own army which draws near your post, as soon as you are acquainted with it, you ought to reconnoitre them, and to follow and receive them with all the attention which war requires. I am very far from apprehending that the service, such as we have directed for the safety of the post, can fatigue a corps too much; so far from it, the observance of our directions will greatly contribute to harden the troops against fatigue, augment their courage, vigilance, and address, whilst inaction benumbs the body, and enervates the mind.
ACCOUNT OF THE MODE OF STRENGTHENING OR FORTIFYING A CORDON ON THE FRONTIERS OF A COUNTRY.

[Illustrated by an Engraving.]

THE roads leading by 12, between A and B, are passable for artillery and horse, every other part of the country is accessible for infantry. From B to G the frontiers are over a pretty high chain of mountains, intersected only by eight roads, which for the most part are rather narrow. The frontiers here make a sweep, and from A to B the country is very open. The enemy may therefore attack the cordon here in several points, and for this reason it is occupied by a strong force, consisting of twelve battalions and fifteen squadrons.

The mountain D is inaccessible; the left wing of the cordon appuyed to this mountain is therefore covered by it, as well as its rear.

Two battalions are stationed in the village E; the first rendezvous at arms is in 21. Here is but one guard, which throws itself into the village, as soon as the signal of alarm is given. The second battalion has no place of arms; it moves in 22 to the place of alarm, from whence it supports the rendezvous at arms, 21, 23, and 24. By 25 is a block-house for about twenty men, who observe the roads 26 and 27, that the enemy may the less be able to steal along the foot of the mountain, and gain the height 28; for the same purpose the roads 26 and 27 are in part rendered inaccessible by abattis. In the wood, as well as on the mountain, block-houses are erected for about twenty men, which command the abattis, over the communication between the two places of arms 21 and 23, and block up the roads which run on both sides of the wood.

The village F is occupied by one battalion, the rendezvous of which is on the height 23. In the
village G, another battalion is stationed, whose rendezvous at arms is in 24.

In the villages H and I are two battalions, which have but one place of rendezvous in 30 to cover its communication with that in 24, and to block up the roads which meet in the low ground. The block-house 31 is erected for about fifteen or twenty men. The block-houses 32 and 33 cover the night quarters of the battalion, which in the day time takes its post nearly at the utmost extremity of the village, but at night withdraws into its smallest part, in rear of the block-houses. An additional advantage derived from these block-houses is, that we can maintain our position longer on the height, if we should intend to fall on the rear of the attacking enemy, through the wood by 39, from the quarters N and O.

Two battalions are stationed in the villages K and L, to support the different rendezvous 23, 24, and 30, which have their alarm-posts in 34 and 35. This part of the country is therefore occupied by eight battalions; four of which are stationed in 21, 23, 24, and 30, and the other four in the quarters of support, E, K, I, and L.

This force is required here on account of the open ground, and because the enemy is likely to direct most of his attacks against this point, and to attack the town M. The frontiers from M to C, along the high and thickly-wooded mountain, are more inaccessible. Most of these narrow roads can be rendered impassable; for which reason the village N is occupied with one, and the village C with two battalions; the first has its rendezvous in 36, and the other two in 37 and 38.

The block-house 39 covers the entrance of the wood, and the communication through it as far as 33, and also the night quarters in the village N.

In the town M is stationed a battalion to support these two quarters, and to cover the battery and magazine, which have both been established in the town for the subsistence of the troops of the cordon. Neither
this town, nor the surrounding villages admit of being fortified, on account of their low situation. In order, however, that the magazines may be duly covered, a rendezvous at arms has been erected for the battalion in 41, which covers this side of the town. In case of need, the battalion posted in L moves into the redoubt 40. The block-houses 43, 44, and 45 must prevent the enemy from bringing up any howitzers for the purpose of burning the magazine of hay and straw. If the troops are not sufficiently strong, the quarters of support in E and F may be omitted, and the village O occupied by one battalion; in this case, strong block-houses may also be erected instead of redoubts 37 and 35. Near 46, about eight hundred paces above 25, an officer is posted with thirty horse, who places two vedettes in 47 and 48, one of whom observes the vale as far as 6, together with the road and low ground 2, and the other stands in 48, on the road which proceeds from 5, and fronts towards the wood. As the two vedettes are upwards of one thousand two hundred paces distant from their pickets, an alarm-post has been placed by A, in this manner, that it can be discerned by the picket, as well as by the two vedettes. The officer sends a patrol on the road 1, till within five hundred paces from the borders, which returns by 2, and further through the village to 4, 5, and 6, and so on through the forest to the picket.

By 49, about one thousand paces above 23, is the second picket, which is of the same strength as the former, and has three vedettes in 50, 51, and 52. Near 53 an officer is posted with forty horses, who detaches a non-commissioned officer with sixteen horse to 54. The picket, which remains yet twenty-four horse strong, places three vedettes in 55, 56, and 57, and an alarm-post a, which never loses sight of the three vedettes. The non-commissioned officer in 54 has likewise three vedettes in 58, 59, and 60. The vedette in 59 serves also as an alarm-post, as from the height we can overlook the two others.
The officer sends patroles to 10, 11, and 12, along the frontiers to 13, which return in the same manner, making a march of five English miles. In 61 is a picket comprised of sixty horse, one officer of which takes post in 62, with twenty horse; a non-commissioned officer is placed with twelve horse in 63; and the first officer remains with twenty-eight horse in 61. The picket 62 places three double vedettes in 64, 65, and 66, and has an alarm-post by d. The principal picket 61 has a double vedette by 67, and an alarm-post by e, in sight both of the vedette and the alarm-post in d; when the weather is clear, it discovers the vedettes 64, 65, and 66. The non-commissioned officer in 63 has two double vedettes in 68; one in the road, and the other in 69. The patroles set out from 64; one proceeds by 39, beyond the frontiers in 14. It is six horses strong, and steals half through the wood, along the frontiers to 13, passes the vedette 60; and returns to the picket. The other half sets out from 14 to the right, proceeds to 15 and 16; passes the vedettes 66 and 17, and returns the same way.

A second patrole, consisting of three horse, is sent to 18, 19, and 20, passes round the redoubts and returns. To prevent the interruption of trade, the roads 10 and 20 are left open, and the vedettes 57 and 68 must send all persons to the picket who enter the country that way. As no passage is suffered in any other place, it will be more easy to discover, by means of patroles, every one who has passed the frontiers. At twilight the pickets fall back, namely, that in 46, behind the houses in 70; and those in 49 to 74, where a temporary barrack is erected to receive them. That in P calls in the detachment from 54, and takes post by the house 72; the others act upon the same plan. The garrison of E, in night-time, withdraws into closer night quarters behind the picket 70, and the garrison of the village F behind the abattis, while that of the village N retreats between 39 and 36; a picket takes post in the
last houses, not yet occupied by the soldiers. At night-fall the pickets send small patroles of three men, to the distance of about one thousand paces around their quarters, and not further; for if the enemy should even steal between the different posts which form the cordon, this proves not on his part any intention of making a serious attack, which can only be done to advantage about break of day. No alarm-signals should therefore be given immediately, since too frequent alarms greatly harass and fatigue the troops. But after midnight the pickets of horse push the larger patroles as far as the frontiers, and the garrisons of the redoubts and block-houses send also small patroles of three men to each other. All the garrisons, as guards of the villages and redoubts should, during the long winter nights, be relieved in the morning three hours before break of day; but the guard relieved should remain till break of day, and until all the patroles have returned and reported that everything is quiet. All the night quarters must be alert when the guard is mounted. The troops which form the cordon are relieved every month: they remain the first month in the support quarters, and retire the second month into actual winter quarters. As in winter the roads are frequently rendered impassable for columns, as well as patroles, by a fall of snow, all the roads of communication, as well as those which lead beyond the frontiers, must be cleared by the inhabitants of the neighbouring villages, and great attention paid to this being carefully done, as the safety and defence of the cordon depends in a great measure on that point. The horse-artillery which belongs to the cordon is posted in the villages situated close in rear of the support quarters. The cavalry are quartered in the villages surrounding the horse-artillery, and thence relieve their pickets. They hasten together with the horse-artillery to succour the different quarters and posts, as soon as the signal is given. The cannon of the advanced battalion are mounted in
REMARKS ON LINES, &c.

the rendezvous at arms, or places of parade; but
those of the rear battalion and horse-artillery are,
while the snow lies deep, fastened on sledges, that
they may be transported with greater expedition to
any place where they may be wanted.

REMARKS UPON LINES OF OFFENSIVE OPERATION.

[Embellished with Engravings.]

THE invention of powder and the introduction of
fire-arms have necessarily rendered an immense
quantity of ammunition requisite. It has progress-
ively been found that a great extension is the con-
sequence of this new method of warfare, and that an
army is formidable now only in proportion to the
quantity and rapidity of firing which it is enabled
to execute. This discovery has gradually led to a
variation in tactics. It is now considered how to
extend and lengthen one's forces, and to occupy a
vast space of ground. We perceive, that in this
system the quantity of soldiers produces the same
effect as formerly resulted from the quality. In
consequence of this, all the powers of Europe are
anxious only to augment their troops; they have
sent into the field innumerable bodies of men, and
in addition to the enormous baggage which the am-
munition necessarily requires to follow an army,
they have added the no less important one of neces-
sary subsistence for so great a number of men and
horses. The countries into which they penetrate
soon become incapable of victualling such a multi-
tude, and they are hence necessitated to construct
magazines, as well for the preservation of existence,
by furnishing food, as the execution of war, by se-
curing ammunition. The health and vigour of
armies depend on the number of these store-places,
on their safety, and on the facility with which they
may be reached; hence, before opening a campaign,
the first object is to establish and supply them. In
order to be safe from the inroads of the enemy, it is
previously ascertained and maturely considered what positions are the most eligible and secure; and at the same time, attention is paid to the means of manœuvring, so as to cover them, to quit them with the greatest precaution, and unceasingly to maintain that intercourse with them which constitutes the strength of an army, and guarantees its success. Hence field plans have been formed; strong places have been traced as fundamental points; and, in a word, a basis has been fixed for the establishment of magazines, from whence have proceeded the lines of operation, the ultimate object of which has been at once to protect retreats, and to favour and assist attacks.

The utility of this basis, its conformation, and its dimensions, considering the importance of these things in the present system of war, arrest our attention in a special manner, and will therefore form the principal object of our researches.

But, while we are obliged to calculate with so much precision the basis of the lines of operation, it is also requisite that we should fix, with equal certainty, the precise extent of their influence. The aim of modern warfare is no longer that general and vague object of conquering the enemy and driving them as far off as possible, but it is conquering them in a certain point, expelling them from a certain position, pursuing them to some other, and to suspend our triumphs at a proper time, which last should proceed not from any calculations relative to the enemy, over whom it is impossible not to maintain an ascendancy, but from self-considerations, and being attentive not to exhaust ourselves. Every military or warlike operation consists, at present, of three principal parts: the subject or basis of operation; the line of operation; and the object. In the course of the following remarks it will be demonstrated that every operation, in order to be effectual, should be founded on many subjects, approximate to each other, and situated nearly in the same line.

As a basis is established only in order to possess
permanent and fixed magazines, and as they are the places where the magazines are enclosed, which constitute the military basis, from whence every operation should proceed to produce a proper effect, it is evident that when an army is encamped very near a principal magazine there is no line of operation; for an army in this position is thoroughly secure, it is at the source of its existence, it is victualled without convoy, and consequently stands in need of no manœuvres to secure its provisions from the attacks of the enemy.

But, on the contrary, the lines of operation commence immediately an army is any distance from its magazines, for it is the convoy which, properly speaking, form these lines; and the very reason why they ought to be previously traced is, that the convoys may be secure; but when these precautions are unnecessary, then the lines of operation disappear, and are confounded with the basis.

From hence it follows that the lines of operation are always directed in front against the enemy's country. I say against the enemy's country, and not against the enemy himself; for those places which contain the very essence of the military energy of their adversary should always be, rather than the men, the object of modern war. Thus, marching in front, with regard to the operations, is not always marching in the direction of the figure of the soldiers, viz. towards that point to which the heads of columns are turned; but rather where the moral figure of the army, (if I may so speak), or the soul of him who leads them onwards, directs its attention.

The lines of operation, according to the legitimate meaning of this term, are therefore of an offensive nature. If we examine, by the means of figures, the method of operating, in order to proceed and seek one's adversary even in his center, we shall perceive better than by any other process, the proper and decided character of the modern system of warfare.

We shall first consider the case where a line of
operation, proceeding from an agent or single center, directs itself towards a certain object in advancing into the enemy's country.

Let the subject be A, (fig. 1.) B the object, and C the army proceeding to operate from the subject towards the object. It is clear that if the enemy D opposes the line of operations A B, advances on the rear of the army C, without directly interfering with the corps E, this movement would be a false attack, merely to keep this corps in its place; and the army C would hence be constrained not only to halt its march, but also to turn its offensive into defensive operations, which would be foreign to its intention: for the line of operation A B being the only road by which their convoys could reach them, it is of the utmost importance that this line should not be broken by the enemy D; for in that case, having no longer any means of receiving supplies of provisions, and convoys from their own magazines being, as we have already said, the only method of supporting modern armies, it follows, in the present supposed case, that the situation of the army C would be like a man who, having placed all his fortune in a hazardous enterprise, trembles for fear of the least accident. The lines of operation of an army are like the muscles of the human body, on which depend the motions of the limbs. When any individual member possesses only one muscle as its principal power of motion, the privation of which would render it impotent and useless, it is doubly essential to secure this muscle from every possibility of danger; in the same manner a single offensive line becomes to an army marching towards an object, a part peculiarly sensible and tender, which cannot be too much secured from coming in contact with the enemy.

If the army C occupies always the important post B, which is the object of the operation, it has nothing else to do than to detach some men to succour he corps E, in case the enemy should attack this
OF OFFENSIVE OPERATION.

point, so as to protect the line A B, and to maintain a communication with A; but in this case it will weaken itself at the post B in such a manner, that probably it would be unable to resist a direct attack: but if, not being masters of the post B, it is intended to besiege it, want of sufficient forces would render it impossible to continue it. If B is an intrenched post, from which it is necessary to drive the enemy, the army C could not venture this attack. Lastly, if this army has not yet attempted the post B, and is merely marching in order to reach it, then its progress would suddenly be interrupted, and this diversion of the enemy against its line of operation would completely prevent every ultimate offensive operation on its part.

Suppose, however, that the army C is determined to maintain the post B obstinately, without being in the least moved by reiterated attacks against his line of operation A B, he would run the danger of seeing his communication cut off, not only with A, but also with the detached corps E; for the space between E and C would necessarily be large enough to permit of the enemy sending a detachment into this interval, and to operate not only in the rear of C, but also on the flanks of E, in such a manner as totally to drive away this last corps. It may be said that the enemy D might be engaged by E, and that then the line of operation A B would be secured, and the flanks as well as the rear of the army free and undisturbed; but in this case all is not equal.

If E is beaten, the army C is ruined; if, on the contrary, the enemy is repulsed by E, his retreat, as well as his provisions, &c., in his own country are always secured to him; for he would have in F, G, H, I, a certain quantity of magazines which would never be touched by the army C. This army might perhaps attack a magazine in K, and take it from the enemy; but the others, and particularly G, H, I, are too far in the rear of D for C possibly to approach them. But it will be said, suppose the enemy has
no magazines in these different places? then it is their fault, and they cannot be in a condition to come to action. I speak only of such things as ought naturally to take place; such as are consistent with sound reason. I therefore maintain that the enemy D, in his operations against the rear of C, is always secure in his communications with his magazines; thus, the more D detaches his forces against A, or the more he advances himself in front, precisely so much the more should C weaken himself; with regard to the object B, by deploying in the rear, in order not to be separated from A; but the enemy D might likewise make a diversion on the point L, into the country of the army C, where, if they choose, they might attack A, in case this point were weak enough to be carried with celerity; for, in the event of a regular siege, C would promptly come in the rear to save A. The line of operation A'B might also be vulnerable on the side M; for the enemy always possess the advantage of collecting his forces in his country. Upon this hypothesis the army C would be compelled to station a corps near N, and to assume the defensive figure of a long square, (carre longue) instead of offensive operations, which were their object. This army would then be found in a position altogether unfavourable; and such is the serious inconvenience of acting in front on a single line, which differs very little from the straight line.

It is difficult to determine in a precise manner how far an army should separate itself from its magazines, when penetrating into an enemy's country, so as to secure itself from all the disadvantages and inconveniences which we have just indicated, because they depend upon a variety of circumstances. I may, however, venture to fix it as a principle, that it should never be more than three days march, and that in a less distance the danger is not so considerable, provided that, by a single retrograde motion, the army can cover its rear and flanks and protect its
convoys. But in this case the advantage of an offensive operation would be of very inferior importance, even when attacking a fortress of the first order; and the army attacking should always be apprehensive of diversions in its country and on its flanks, because the enemy would not be far from their magazines. If they have, in order to cover their country, a range of fortresses, or a military basis, and the enemy have one also, then things would be equal, and the fortresses might be reciprocally besieged.

I know it will be said and maintained, that if they have on their frontiers a range of fortresses which constitute a military basis, they are secure from every kind of danger, even of acting only on a single line, for the garrisons of these places would threaten the rear of the enemy, if they advanced too far in front, as in the example of D; and even if they have no line of operation opened, they risk nothing in proceeding, if they are always careful in reserving the power of retiring into their fortresses. Upon this hypothesis an enterprise would have a sufficient basis, provided there were in the rear various lines of operation from which convoys might be procured, even if not wanted, and while they are sufficiently supplied with the provisions of a single magazine but this is not the thing now under consideration. I consider and admit only one single line of operation, whether when there exists no magazine near a point, as A, for example, or whether when separated from the fortresses where these magazines are contained by the enemy's works; thus, in the example cited, the fortress L, of the enemy D, renders useless to the army C those magazines which are situated in the fortress O, for the first obstructs the line of operation which C intended to open from the second. It is evident that the enemy would not fail to construct a fortress opposite, and in opposition to all which might front him, in the same manner as a body of troops is always opposed to an opposite.
body of the enemy's; in order to restrict its motions. In general the following rule may be considered as decisive:—"Those magazines which an army finds to be separated from them by the enemy's fortresses, may be considered as not existing with regard to them."

It will therefore be necessary, in order to give a basis to the line of operation A B, to erect, independent of A, various fortresses along the same line, and in its vicinity. This rule is equally valid, even if A should be itself a fortress, and without any opposite one in the enemy's country, and is used for that reason by the army C as a point of departure, or a subject of the operations; or even whether it be a fortress conquered at the commencement of the war from the enemy D.

What has been said above sufficiently authorizes me to conclude this article with the following positive maxim of Strategy, viz.

"That in a defensive war we must not oppose ourselves directly to the enemy, nor endure patiently his enterprises and attacks, but choose our position literally (de côté); and that we should leave the front of the enemy entire, while we ourselves assume the offensive, directing various attempts towards his rear and flanks, and particularly careful in adopting hostile measures against his convoys. Such is the conduct to be observed, whether we wish to divert the attention of the enemy, or to prevent him from thinking on his rear and flanks; or whether we wish to hem him in his posts, whilst, with the greater part of our disposable force; we attack his provisions, &c. even in his own country; which operations, as may easily be conceived, should always be carried on in the rear."

*Lines of Operation inclosed within an acute Angle; a Segment of a Circle of Sixty Degrees, or less.*

The disadvantages of such a basis of operation are nearly equally as great as those just examined.
When the two principal roads, by which convoys arrive, form with each other, and relatively to the object of operation, an angle of sixty degrees, or even less, the basis is not sufficient.

The army D. (fig. 2.) can make no progress against the object C, when the enemy E, opposed to the line of operation B C, approaches a triangular point A C B; for D is compelled to detach immediately a corps in the rear towards F, in order to cover the line of operation B C, not being able to intercept, in any manner, the communication of E with his magazines, inasmuch as they are, or ought to be, somewhere near G. The army D is therefore obliged (supposing there to be only one line of operation), in consequence of this movement of the enemy in his rear, to assume the defensive. There is, however, this advantage, that E is not able to break A C; for, if he would advance as far as his corps, he would be himself in danger of being attacked by the corps D, and cut off from the magazines which he has situated about G. It might, however, happen that the enemy E may penetrate as far as the other side of the triangle A C B, by crossing it; a movement which would certainly embarrass A C, though, at the same time, B C would be completely liberated. The enemy E should also have magazines at H, (being in his own country) as, by this point, it would be easy to break the line A C, by means of a corps I, which he should detach for that purpose; in this case, D would be compelled to send forces to act against this corps. It may readily be perceived, that the same suppositions are assumed here as were considered in the preceding article, and it will consequently be needless to repeat them.

The angle which forms the summit being very sharp, each line of operation which extends from the basis towards the object, as in the present instance the line K C, might be easily broken by a party of the enemy, at the same moment as the two sides
BC and AC; consequently lines of operation of this kind have not a sufficient basis.

But, in fact, could not the enemy E place himself in the rear of the army D, in such a manner as totally to intercept the communication with his basis AB, and to have this basis behind himself? This would be a decisive operation, and might be effected without much danger; for he could procure his provisions from his flanks GH; and it would be easy for him to retain, by means of small corps of observation, the garrisons belonging to the fortresses A, K, B, situated in the basis, provided these garrisons were not numerous; a precaution which would always secure him from being surrounded. Thus, in the event of the enemy E being totally beaten, and driven from this extraordinary position by the army D, it could not be relied upon that his destruction is certain; for he would always be far enough from the fortresses A, K, B, to retreat, without danger, in the environs of II and G.

With regard to the army D, the most eligible conduct which it could adopt, in order to escape from its dangerous position, would be to make at the moment of a desperate attack, a movement towards the magazines possessed by the enemy, in the places GH. But if the lines of operation of the army D have a sufficient basis, they would not be exposed to the chance of being thus completely surrounded.

All that the army D would gain, by having for its basis a segment of a circle of sixty degrees or less, as A, E, B, (fig. 3.) compared with the basis in a right line of the triangle, (fig. 2.) would be, that the two lines AC and BC, which describe the segment, being shorter than the sides AC, BC, of (fig. 2.) the army would be much nearer to its principal magazines A, B. But this advantage would be rendered nugatory by this circumstance, that the shorter the lines AC, BC are, so much nearer are the points A, B to each other, if the angle C has no more than
sixty degrees. But, according to the greater proximity of the fortresses $A$, $B$, will be the shortness of the basis, and the enemy will be induced to take no more trouble about these two fortresses than if they were only one. It may, therefore, easily be conceived that the opening of the angle $C$, which I shall hereafter call the objective angle, is decisive, with regard to the greater or less security of the operation.

As to the rest, the sections of the circle $AB$ cannot be determined but by a third point $E$. The fortress $E$ will certainly be found perfectly secure from the attacks of the enemy by $AB$; but the lines of the convoys $EC$ is not more safe than the line $KC$ of, (fig. 2.) consequently it is the same as if $C$ did not exist, and that $A$, $C$, $B$, were not a rectangular triangle, the basis of which would be the line $AB$. The cause, therefore, which, in the present case, endangers the line $EC$, is the smallness of the objective angle $C$.

On diverging Lines of Operation.

According to all rule it is indispensably necessary, if we wish to occupy a country without defence, to have lines of operation diverging from a central point to a circumference, or from a smaller to a larger section, or even from a right line to a circumference. The Tartars follow this method when they wish completely to overrun and destroy a country. But the Tartars never trouble themselves with lines of operation, of which they do not stand in need. They carry their provisions on their horses, which is going still further than the Romans, who used to have them in their camps. The Tartars know only the lines of marching, and the following is the method which they adopt when they spread over a country with their countless hordes. A troop divides itself into two, which is again subdivided into four, and thus they proceed to separate in proportion to their progress, until they entirely cover a whole country.
Baron Tott says, he has seen them ravage New Servia in this manner.

This alone proves that they know nothing of the art of war, except to common offensive hostilities, by these diverging operations; for they will not secure you from being invested, the rear and flanks being always exposed. Your lines of operation are not in any manner defended, while on the contrary the enemy has nothing to fear with regard to his own. The subsequent observations, illustrated by figures, will sufficiently demonstrate the truth of these assertions.

The line of operation C D (fig. 4.) is in fact better covered by C E and C F, that is, by the corps which are near E and F, than is an operation on two lines in an acute triangle, as in the preceding hypothesis. But all the lines of operation, parting from C towards E D F, and directed against these points, are not against the enemy A B, who can take them in the rear, intercept the convoys, while its retreat to its usual posts A B, is always thoroughly secure. If, added to this, the fortress C is not able to sustain a long-siege, all the men detached in front must fall back and retreat, in order to avoid complete destruction, immediately as the enemy proceeding from A B undertakes any thing against C.

But this is not all. If the enemy has no men near A and B, and he only marches with those he may have near E and F towards the points A B, in the form of a periphery, the detachments sent by C, towards the points E, D, F, would be obliged suddenly to make a defensive movement in a parallel manner towards A and B, and to form a narrower circle round the point C.

The enemy, placed as abovementioned, would always possess the advantage, by uniting a number together, of falling upon any of those who might be separated from the point C, and crush them, if they were not at too great a distance.

The enemy, considering the extent of their basis,
LINES OF OPERATION.

Which comprehends the whole segment of the circle A B, has nothing to fear, either with regard to their rear or provisions. They can never, according to this hypothesis, run the risk of being broken. But the corps separated from C has not the same advantage; for, if they concentrate themselves, they expose their convoys, and will ultimately see themselves reduced to a single line of operation.

The consequence of dividing a force against many objects is, that it is impossible to act against any with proper energy. We weaken ourselves by such conduct, and enable the enemy to destroy us progressively: success can only be the consequence of attacking any point with a force superior to that of the enemy. The mass of the soldiery decides everything; but it will remain a truism, that strength proceeds from unity, and weakness from separation. It is precisely the same as with a man who undertakes a thousand enterprises at once; none of them succeed.

If, in order to cover our lines of operation from the attacks of the enemy, from the posts A B, we resolve upon collecting in single or isolated bodies, and form, as it were, a wall of troops C D (fig. 5.) against the periphery A B, the stupidity of such conduct, which would produce weakness in a point that we should be unable to defend, and the certain result of which must be the necessity of fighting en detail, is so palpable, that it is useless to enlarge upon it any further in this place.

Two corps, D E (fig. 6.) for example, would doubtless be sufficient to observe and restrain the two fortresses A, B, and at the same time those troops which, being posted in the environs, might fall upon the rear of those who were carrying on their operations towards F, G, H. But this would be to fall into the fault of too much dividing the forces: and the army acting offensively, in the direction of F, G, H, would be hence too much weakened. In other respects, the principal consideration here is,
that if the enemy, placed at F, G, H, forms his troops into the periphery A B, by advancing them towards these two points, all the men intended for the offensive operation must fall back on the detachments D E, and thus turn the offensive warfare into a fruitless defensive one.

If the diverging lines of operation have their basis on two strong places C C (fig. 7.) situated so near each other, that the lines of operation issuing from these points, form with the object G, only an angle of sixty degrees, still nothing would be rectified by that; for the detachment sent on the offensive against G would suffer all the disadvantages already noticed in the preceding article of an offensive operation formed within an acute triangle; and the separate forces, as F, G, H, would have to support all the inconveniences of diverging operations.

In all other respects, the objects towards which operations of this nature are directed, should have, one with another, such a situation, that a line, supposed to intersect them, should possess as near as possible the appearance of the fourth of the circle, which I have designated in the figures by the letters A B. It is at this segment where the lines of operation should terminate, which, like so many rays, proceed from the fortress, the principal point of operation, as from a center. It is difficult for a diverging operation to have more than one; it can hardly be made to diverge from two; but, supposing this last case, it would be necessary that the central fortresses should be situated very near each other.

On the other hand, it is very clear that the enemy, proceeding from A to B, (fig. 8.) might make a diversion into the country of the army C, whilst he operated offensively against the points D, E, F; for this mode of defence might appear more easy and feasible than to advance in the rear of D, E, F, to cut off his convoys, or to undertake any thing else against C.

The army attacking, proceeding from this point,
would probably have some strong places opposite the two fortresses A, B, of the enemy; but, on the supposition that they had none, their country would remain open; in consequence of which their places would be susceptible of being attacked. Still, however, the enemy would possess the resource (and it would be the most eligible proceeding for him to adopt) of forming an enterprise against C, or against the lines of operation.

Every reader, after these observations, must conclude with me, that before advancing towards the segment A B, it is necessary to become master of the fortresses which, according to my hypothesis, should be at the extremities of A B. This operation would be uncertain if the lines of convoy all proceed from C; in this case, the enemy posted at D, E, F, (fig. 9:) would disquiet them, by advancing as far as G or H, according as A or B were besieged; but the natural road for the convoys would be from I or K; that is, from the country of the besieging army, which would certainly have, near one of these two points, a fortress serving as its magazine. After that I always regard the capture of A or B as possible; it would create a greater number of difficulties if neither I nor K were fortified; for if the operating army besiege B, the enemy occupying A might make a diversion into the country of this army at K, and fall upon the rear, if not prevented by the interposition of any strong place.

Master of A and B, and having (to make use of a trivial expression) plenty of elbow-room, they might form their basis on A, B, C, and begin from thence their line of operation. It is, however, likewise necessary that A and B be at a convenient distance from each other; in order that the lines of operation proceeding from these two points, when in contact with its object, might form an angle of more than sixty degrees. If there be sufficient force to besiege A and B, both at once, it will be advisable to attempt it, because it should always be a standing maxim to
undertake as much at a time as it is possible; but that will seldom be the case; and, in the present instance (supposing that there is no urgent reason for acting in a contrary manner), the rule would be to attack the strongest place first, and for this reason, that, at the commencement of a campaign an army is more alert and vigorous, and better disposed than towards the end.

We may conclude this by establishing in the following words this principle of Strategy: "That if the basis be sufficiently long, so that the two lines of operation of these extremities form, at the point of contact with its object, an angle of more than sixty degrees, one may advance in front with all possible security; but that under any other circumstances it would be highly imprudent."

Lines of Operation inclosed within an obtuse Triangle, or in a Segment of a Circle of Ninety Degrees and more.

If, as we have seen, the operations on a single line, as well as those inclosed within an acute-triangle, are insufficient to answer the end of an offensive war; if diverging operations are no better founded in reason; if it be necessary to establish a basis of a certain length; and if, in the greater part of circumstances, it is imprudent to advance in front on parallel lines of operation; in short, if there absolutely exist a principal point indispensably necessary to be first subdued before undertaking any other enterprise, then it is indubitably evident that there is no other choice among the different figures than a triangle, the two sides of which, formed by the two lines of operation, make at the point of contact with the object a right angle, an obtuse angle, or a segment of a circle of an equivalent measurement. Such is the most perfect of all plans of offensive operations; but this proposition requires to be demonstrated.

The army E, (fig. 10.) operating from the basis
ADBE, of the rectangular triangle ACB, towards the object C, has nothing to apprehend or fear either of being broken, or of its convoys being carried off, for the enemy F might certainly break the lines of operation BC, or AC, according to which side he arrived at; yet he could not possibly touch the line CD, or any other situated between B and D, or between A and D. For, if he advance in the rear of the army E, by crossing the lines of operation at the extremities BC and AC, he would himself be attacked in his principal posts, which last could not possibly be otherwise placed than at GHI; but if the enemy advances as far as the line CD, or even to the point K, the army E might very easily intercept by a detachment its retreat to G, and the fortress B might likewise cut them off at the same time at H and I. By this means he would himself fall into the very snare which he had laid for others.

If it be an obtuse triangle, as ACB, (fig. 11.) the army E is so much the more secure in its operations against the object C; thus, the larger the objective angle, formed by the two lines of operation at the extremities, when in contact with the object is, so much the longer consequently is the basis, and the attacking army can pursue its operations against the object which it has in view with a proportionate increase of safety; for he has nothing to fear either with regard to any diversions of the enemy in the rear, or any enterprises against his convoys. The enemy F would himself be cut off from his magazines, G, H, I, and a detachment issuing from the fortress B, would soon compel him to return quickly within his basis. But even when he should again dare to cross the line CB, and, on the other side, the line AC, (fig. 10.) the army E would always possess the line of operation CD; and, in general, all the lines of operation issuing from the basis between the points of the extremities AB, by which means this army E would pursue its intentions without any intervening obstacle. However long the basis may be, or
however obtuse the objective angle, still the two lines of operation at the extremities are always exposed to the enemy; but when there is no other strong places in the basis than the two terminating points, an army acting offensively would nevertheless be enabled to fix there with great security a number of magazines from which they might draw their convoys, it being sufficient for this that the basis be long enough, viz. that the dimensions of the objective angle be at least ninety degrees.

The enemy cannot make any incursion into the country of the army E; for it is as impossible for him to penetrate between A and B, as in a curtain between two bastions. We may perhaps succeed on the side of B, but then the basis of the army E is superior to his, a circumstance which places him in an awkward predicament, and which fully demonstrates the importance of having a sufficiently extensive basis, and defended by good fortresses.

I have not determined with immutable accuracy the measure of the objective angle, because it was sufficient to indicate the principle which may serve on every occasion as a rule. Existing circumstances will necessarily modify this principle. I have not, therefore, marked out the limits between bad and good within a few degrees; a greater nicety would have been pedantic. Thus I have said that operations inclosed with an angle of sixty degrees, or even less, are decidedly of no use, though I was justified in adding, that in most cases they were not effective if under ninety.

A more scrupulous precision would have been inconsistent with nature. At ninety degrees the basis of an operation may be considered as essentially good, though I have asserted, that those only which form with the objective angle an obtuse triangle ought to be considered as decidedly so. It is impossible to determine but according to local circumstances, how many degrees the objective angle ought to have. Perhaps it may be said that, ac-
cording to my opinion, it will be sufficient to have recourse to an astrolabe, to ascertain whether it will be prudent to commence a siege, or whether an army be secure from the possibility of being separated from its convoys in a given position. To this I reply, that it is certainly very necessary to measure the objective angle on a map, and to weigh every thing maturely previous to engaging in an offensive operation; as to the rest, I consider them as mere pleasures, which do not require from me any serious notice.

If the army E operate in the segment of a circle, such as A D B, (fig. 12.) the only advantage which this figure will concede over a right angle-triangle is, that the part situated between the circular basis and the dotted line A B, is absolutely impenetrable to the enemy, a circumstance which effectually secures the lines of operation drawn between the two points of the extremities A B. On the other hand, it is a disadvantage that the lines of operation are much longer than the space which can exist between the dotted line A, and the segment A D B, than they would be, if this line A B were the basis; for the greater the length of the line of operation, the arrival of transports is proportionally irregular and uncertain, and the expense greater. It would therefore be more eligible if the dotted line A B were the basis, and D more approximate to the object of its operations.

If the segment of the basis be curved, so that the objective angle appears entirely obtuse (fig. 13.) then all the lines of operation are perfectly protected; but the same effect would take place if the basis were straight, (fig. 14.) because the safety of offensive operations depends entirely on the opening of the objective angle. If the segment be salient towards the enemy, there is only one part which can serve as a basis to a given operation. In figure 15, it is not A B which is the basis; for, strictly speaking, it is d, e, since A and d on one side, and B and e on the
other, are on the same line of operation, and the
army acting towards C would procure whatever he
might require from the magazines nearest to the
points d, e. Thus the opening of the objective angle
essentially determines the success of an offensive
operation, though so much depends upon the direc-
tion of the basis that it is not altogether an indif-
ferent consideration.

The following principle may be deduced from all
the researches above brought forward on this sub-
ject. "Previous to acting offensively against a cer-
tain object, a sufficient basis must be secured, in
order that the objective angle, formed by the two
lines of operation at the extremities, may at
least measure the fourth of the circumference, so as
to be thus enabled to operate in a triangle, or in a
segment of a circle of the same dimension."

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ON FIELD-WORKS, AND HOW THEY SHOULD BE
DESCRIBED.

[Illustrated by an Engraving.]

1. FIELD-WORKS are of different kinds. There
are flches; redoubts that are round, or with
many faces; redoubts in the shape of stars;* tetes-
de-ponts; intrenchments, behind which troops are
encamped, &c.

It is unnecessary for an officer who wishes to con-
struct these kind of works to describe them by geo-
metrical means, which require calculations and ma-
thematical instruments. There is a much easier me-
thod, less complicated, and which contains more
practice; there must be a chord of about fifty fa-
thoms, at the end of which should be marked a scale
of twenty feet, and the remainder should be divided

* These are seldom used, and do not deserve much atten-
tion.
into measures of six feet each. A number of pegs will be necessary to mark the angles, and that is all which is requisite to describe field-works.

2. With regard to the works which flank themselves, that is to say where a line is protected by the fire of another, the best defence is that where there are right angles; it is then necessary to make them with great exactitude; the cord which we have just been speaking of will answer the purpose. You take the length of twelve feet of it, in proceeding thus, Pl. 1, fig. 1: you suppose, for example, a line A B, at the two extremities of which you would make right angles in the front; you extend three feet of cord upon that line c d; you put four of it at the point where the angle should be made, d e, and you lastly join the remaining five out of the twelve feet, to the point c, which is the end of the cord; by these means you make exactly a right angle. You proceed in the same manner, when you intend to do it on the other side of the line, or more properly speaking, behind Pl. 1, fig. 2.

But there is no occasion for this practice, except where you wish to have the angles precisely right; otherwise the coup-d’œil is sufficient, and with a little custom you will be able to make them without having recourse to a string.*

3. In all field-works it is a matter of indifference whether the angles are exactly right, that is to say 90 degrees, or whether they are more or less extended; for it is always a good defence as long as the angles are not too acute, Pl. 1. fig. 3, nor too obtuse, Pl. 1. fig. 4.

4. A salient angle must never have less than 60 degrees, for it would become too acute: the observation of the eye is sufficient to avoid this defect; but

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* It is even better, more especially in the works of field-fortification, that the angles should be at more than 90 degrees, rather than less. The author admits it hereafter.
when you are not possessed of it, it is necessary to measure the angle in question, which is done in the following manner: Pl. 1. fig. 5, at the extremity of the line where it ought to be made, you describe one which is exactly right; you are to mark the top of it with the peg a, to which you affix a cord or pack-thread of the length of five or six feet: you tie at the end of that pack-thread another little peg, which you make use of to draw from one line to the other, the arc b c, which contains the 90 degrees of the right angle: you divide that arc into three equal parts with the cord, and you mark each division with a peg, d; it is then easy to make an angle of 60 degrees, each of the three divisions of the arc b c containing 30 of them, and two together 60. The least that can be given to a rentrant angle is 90 degrees; if the angle were less, the two lines, instead of mutually defending themselves, would annoy each other with their fire; also a rentrant angle must not have more than 120 degrees, in order that the fire of the two lines may cross well.* The salient angles are marked in the Plate 1. fig. 6. by a, b, c, d, and the rentrant angles by e, f, g.

5. The soldiers in field works ought not to be more than two deep; the reason of it is evident: if they were three, as is customary, how could the third rank fire without being embarrassed by the first, who are so near the breast-work that they cannot kneel down? So, to be able to determine the extent of a

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* It is designed that the capitals may be better defended, a direct defence may be added to cross-firing procured by fires parallel to the capital, in describing the breast-work en encrenailles. We have given in the elements of fortification, examples as various as new upon the method of procuring a direct defence for salient angles: we will give some of the examples in the course of our notes upon this work.

† I think it would be better to place them in a single rank, and to take care of a reserve, though the work should be a little larger, which often procures advantages which one ought not to neglect making use of.
work, it should be previously known how many men the detachment consists of that is to defend it; then a calculation may be easily made, in reckoning for each file two deep an ordinary pace, or two feet; a person would also do well to know how to trace quickly, to exercise himself in measuring paces in length, for he will avoid the trouble of measuring the lines with a string.

When artillery is to be placed in a work, six paces must be allowed for each field-piece, and eight for one of twelve. It is in observing these rules that you find the necessary extent of a work. Each front of a fleche, p, e, for the defence of which forty men are designed, which make twenty files, will be ten paces; and if two pieces of cannon are to be placed there, it will be sixteen paces.

Each line of a square redoubt for 200 men, or for 100 files, will consist of 25 paces; and if there is cannon, an addition must be made for each piece, according to its caliber, allowing as many paces as we have just said.

It is of great consequence that the size of a redoubt should be exactly proportioned to the number of men that is to be employed in it; for if it is too extensive, it is not in your power to strengthen and defend it sufficiently, and the enemy will make himself master of it with little trouble and loss. It is not so dangerous to make it too little; for those soldiers who do not find room, can act as a reserve, and a support to that place which the enemy attacks most briskly: yet the least circumference that a square redoubt can have within, is eighty paces; for if it was less, the soldiers who defend it would incommodate each other, and would be too much exposed if the enemy threw their grenades there.

6. When a work is of such extent that two or more battalions are necessary to defend it, a reserve must be taken care of, for which in general the sixth part of the detachment is designed. In first getting off this sixth part from them which are close to the
breast-work. That if, for example, a redoubt for 1200 men was to be raised, it should only be large enough for a thousand, keeping two hundred for the reserve, which should be placed in the center, when it is necessary to defend the work, so that it may be in readiness to act everywhere.*

7. The following is the manner of describing a fleche, for example, for sixty men, or thirty files, and two pieces of cannon:

1. The detachment being arrived at the place which it was ordered to march to, it is divided into two platoons, and they are placed in the form of a fleche, so that they make a right angle. Pl. II. fig. 1. a.

2. The cord is extended the length of the soldiers, and quite close to them, and a line b is drawn, adding to each face six paces for the cannon. That line will denote the interior side of the parapet, to which six feet of thickness must be given in the fleches, which is done only to protect the infantry guards placed at the head of the encampment.

3. The thickness c of the parapet, is described parallelly, that is to say, every where at an equal distance from the line b, which is performed like the first, by means of a cord.

4. Two feet from the line c another parallel line is drawn, to mark the berm d, which is that part of the plain that is not moved, because it should sustain the parapet, which, without that, would tumble down.

5. The fossé e is made six feet wide, the earth of which is taken to make the parapet with.

6. Within the fleche, and four feet from the line b another line is marked for the banquette f, upon which the soldiers get when it is necessary for them

* A work capable of containing 1200 men, would no longer be a redoubt; it would be a fort sufficiently important to be worth while to send the engineers to make a draft of, and narrowly to inspect its construction.
to defend the work; from eight to ten feet width is allowed for that raised bank, where the cannon is placed. The fleche being constructed, the detachment and the artillery is to be disposed of in the following manner, Pl. 11. fig. 2.

a. b. Fifteen files, or thirty men, line the right face.

c. d. Fifteen files, or thirty men, line the left face.

e. A piece of cannon on the right face.

f. A piece of cannon on the left face.

8. There is another method of describing a fleche. Supposing the like number of sixty men, with two pieces of cannon to defend it:

1. The detachment being arrived at the place to which it was ordered, is ranged two deep, in an exact right line, Pl. 11. fig. 3. a. b.

2. They are divided into two platoons, and in the middle center, an inferior officer, c, is put, who in marching in front of it, takes as many steps as there are files in each of the platoons: he places his halberd, or a stake, at the place where he stops, d, which will make the angle of the fleche.

3. From this marked point is described a line to the right wing of the detachment, d b, and another to the left, d a, which will denote the line of the parapet for the two faces. You will then proceed as to the other lines, in the same manner as it has been already shewn.

9. To make a square redoubt, you must do thus: Suppose that two hundred men and two pieces of cannon were designed for its defence, you must previously find out the number of paces that the line of parapet should have, and reckon in this manner:

Two hundred men, two deep, make a hundred files, for which must be allowed 100 paces.

For the cannon, at six paces for each piece

\[ \text{Total, 112 paces,} \]

which, divided into four, make twenty-eight paces,
or the length of each line of that square redoubt, Pl. 111. After this calculation:

1. Draw a right line, twenty-eight paces long, a, b.

2. Make a right angle at each end, c and d.

3. Extend the lines which mark these two angles to twenty-eight paces; the means by which you discover three faces of the redoubt; that is, a b, a e, and b f; the fourth, e f, presents itself immediately, and closes the work.*

The entrance of a redoubt is made in that face which is the least exposed to an attack; the width of five paces is allotted for that purpose, so that the cannon can conveniently pass: but when there is no cannon, three or four paces is sufficient. This entrance is masked from within by a traverse, g, larger on each side, by three or four paces, than the entrance itself, to prevent that division of men, who line the parapet, from being attacked in the rear. It is however necessary, that the traverse should be at such a distance from the entrance, that there may be no inconvenience in the passage. It is also masked on the outside by a fleche, h; this is a common practice when the redoubts are very great; in this case, it must be constructed in such a manner, that the fossé of the fleche may be defended by the fire of the face before which it is elevated.

10. It is necessary that the parapet of a redoubt should be stronger, and its fossé wider and deeper than those of the little fleches that are made at the head of the camp, to establish the guard there; without that precaution, the enemy's cannon would destroy the work in a very short time. It is necessary to know, that you may be prepared to avoid a similar accident, that a cannon bullet from three to six

* When we shall have explained the qualities of the round redoubt that we have brought to perfection, every one will be convinced of the immense advantages it has over the square redoubts, or pentagons, &c.
pounds, enters three or four feet into earth newly thrown up; and a bullet of twelve, eight feet. That experiment determines the thickness of a parapet of a field work; and the least that can be allowed it, if it is to resist a cannon-shot, is twelve feet: it is made even fourteen feet thick, when the post is very important. Two feet will be wanted for the berm, when the work is in loamy or clayey earth, and three when it is sandy. In general, the fossé is allowed as many feet in width as the parapet has in thickness: when the latter is, for example, twelve feet, the fossé will be as much. From four to five paces in breadth is necessary for the banquettes.*

All that has just been said, is explained in the Pl. 4. and 5. In the first the parapet of the redoubt is twelve feet, the berm two, the fossé twelve, and the raised bank four.

11. That proportion between the thickness of the parapet and the breadth of the fossé, is sufficiently just, as long as it is intended for the first to be six feet high, and the latter six feet deep; which is sufficient for field-works. When it is intended to make them stronger, another proportion must be found, by calculation; but calculation belonging rather to the business of a geometrical than forming part of the duty of an infantry officer, the latter may keep to the measure which has just been fixed upon.

12. The fossé ought to be at least six feet deep; but when a strong soil, or a spring, prevent digging down so much, there must be an addition to the width, so that there may be earth enough for the parapet.

* With a moment's reflection one will conceive, that if, as it is very possible, there should be brought into the field, pieces of eighteen, or even twenty four, which would not weigh more than those of twelve, and which would carry farther than the pieces actually in use, it would be necessary to increase the proportions of the parapets of the works of field-fortification.
That of the traverse, or of the fleche, which covers the entrance of a redoubt, has not occasion for more than eight feet of thickness, and its fossé eight in width; it is even better not to have any fossé for the traverse, but to elevate it with turf, in order that the passage may be less encumbered.

13. The lines of the square redoubts having no other defence than their own fire, and not being protected by that of the contiguous lines, it must be remedied by placing them in such a situation, that the ground may afford them advantages, that is to say, by constructing them upon heights, or with one or two of their faces to a rivulet, a morass, a precipice, a hollow-way, &c. or by covering them with abattis, with chevaux-de-frizes, with trous-de-loups, with fugades, &c.

14. The principal care which is requisite, in describing a redoubt, is to examine well which is its weakest side; that is to say, where the enemy could approach with the most facility; you must not then present to this side an angle, which is the weakest part in all the works, but a face. In the Pl. 6. for example, the face, a b, masks the defile c, that the enemy can get possession of by two ways, d and e. In the Plate 7. the face, f g, enfilades the ravine, which is upon the left, h, and the face, g i, that which is upon the right, l. It must be particularly noticed, that the works constructed to hinder the passage of a defile, must be within musket-shot; otherwise the labour will be in vain, and the enemy will most probably debouche, notwithstanding the works.

15. It is not quite necessary to make the redoubts exactly square, and no ill arises from it, if, for example, they are made in rhomb, Pl. 8. fig. 1. or if one face is longer than another, Pl. 8. fig. 2. for it is the ground upon which these works are to be elevated, and that which is round about it, which gives the shape. That if, for example, it was thought
proper to establish one on a height, the lines must
be traced in such a manner, that the whole of the
declivity, and even the foot of it, on every side of
the work, would be exposed to the fire of the mus-
ketry, from those who defend it; or that at least
they would be able to discover every thing 500 paces
from their post. When that advantage can be pro-
cured, it is of little consequence whether the redoubt
has four or more faces, as in the Pl. 9. for it is suf-
cient to be able to defend well the surrounding
ground; and on these occasions, all scrupulous pre-
cision of regularity may be omitted, without per-
ceiving any harm from it.*

16. Another method of hindering the enemy from
deploying out of a defile, is by presenting to him a
cross or double fire; which can be done in two
ways: where a redoubt is constructed, Pl. 10, the
face of which opposed to the defile is tenalled,
that is to say, making an angle a, so that the defile
b, may be exposed to the cross-fire of the two lines,
and that the enemy cannot otherwise pass, and the
village c, and the bridge d, and the dyke e, are un-
der the fire of the musketry of the work.

The other way is, to mask the defile by two redoubts which reciprocally protect each other, Pl. 11,
and each of which defends the pass in question by
the fire of one of its faces, b and c. One may do more,
and join these two redoubts by a line, d, at each ex-
tremity of which passes must be left from thirty to
forty paces wide; so that if unfortunately the enemy
should force the defile, a sortie might be made, to
fall upon the advanced guard of the troops deploy-
ing, and make them retreat, upon which the post is
regained. To favour these sorties, the passes must

* This precept is exceedingly good. To fulfil better the inten-
tion of the author, instead of raising the platform of the elevation,
you would often be obliged to throw up an intrenchment at the
entrance of the gate, at a little beyond the platform, or midway
towards the platform, according to the circumstances and the
position.
not be masked by traverses, as in redoubts, but simply by chevaux-de-frises, which are removed upon necessity.*

There are circumstances when it would be right to strengthen these redoubts by lines to a difficult ground, when it is apprehended that the enemy might turn you, and attack you in the rear. For example, a line which ends in a morass, f, in which a rivulet runs, has been added to that of the left; another line has been added to the redoubt on the right, and extended as far the deep ravine g, into which trees have been felled. Care must be taken that the length of these lines does not exceed the ordinary range of a musket-shot, which is about three hundred paces. When the distance of the redoubt, from the point of appuy, is greater, the lines must be broken to give them a cross-fire, and consequently a better defence. In the works designed to dispute an enemy’s passage through a defile, you should particularly observe to present to him a greater front than he can occupy to make the attack.

17. There is yet another sort of works which defend very well the passage of the defiles, above all when there is no cannon: they are called redoubts en crenaillère, because the line of their parapet is notched as a pot-hook, or a great saw. Their advantage consists in rendering the passage of a defile more difficult, opposing to it a greater number of musket-shots than redoubts in common.† The following

* Traverses would be much better than these chevaux-de-frizes, which could be easily broken by the enemy’s artillery. In order that these traverses might not incommode the active defence which the author proposes, one could excavate in steps or banquettes their traverse, and prolong as a glacis, the declivity of their parapets in such a manner that a column could easily run over their whole extent.

† That happens because the column of fire has for base the diagonal of the redoubt, instead of having one of the sides. It is known that the diagonal of a redoubt which had twelve toises of face should have seventeen of diagonal. The number of lines of fire is in that same proportion of twelve to seventeen.
are the rules for the construction of such a work, Pl. 12. Suppose that two hundred and forty men, or one hundred and twenty files were designed for its defence.

1. Draw the line of the parapet of a redoubt exactly square, a b c d, which presents an angle to the defile, and which is to each face as many paces as there are files to defend it.

2. Divide the faces of the front, that is to say, a b, and a d, into as many parts of twelve feet as you can, beginning with the point a, and mark these divisions with the pegs e.

3. Draw fleches on each side of these divisions of twelve feet, so that these last may make the base of it, and that each face of these little fleches may have eight feet and a half. This last operation is done with the assistance of the cord, upon which is marked a scale: take seventeen feet of it, the two ends of which join to those of each little division, by fixing a peg at the point of each fleche; which is explained in the plate.

4. Mark on the outside the thickness of the parapet, parallel to the lines a, b, and a, d; but at least fifteen feet must be allowed it, in order that it may not be too weak at the salient angles of the little fleches. The berm will be as usual two feet; and a space twelve feet wide and six deep will produce a sufficient quantity of earth for the parapet. It is unnecessary for the banquette to be parallel to the remaillers, but to the first line a b, and a d, Pl. 13.

18. There is also a sort of redoubts which are not closed behind, and which are made use of to mask the defiles which are in front of a camp, but at such a distance that they cannot be protected by the fire of the musketry. These works are also constructed to be able to sustain the advanced posts beyond the defiles; protect them when they retire, and prevent the pursuit of the enemy. They are placed alike upon the eminences which are sometimes met with under,
the cannon of the camp, so that the enemy cannot get possession of it. The detachment is supported which defends such a redoubt; and when, unfortunately, it is carried, the enemy has gained nothing, being exposed to the cannon of the camp, because the work is not closed behind; nevertheless, to defend the men who are there against a nocturnal surprise, the open side of the work is masked by a range of chevaux-de-frises, which are joined one to the other by camp-irons or by chains, and by trous-de-loups, when the wood or time allows it. There is no rule for the shape of these redoubts, the ground determines it; their extent ought always to be fixed by the number of soldiers destined to defend them, pl. 14. fig. 1, 2, 3, 4.

19. To make a star work, the following method must be observed:

1. First of all is drawn the line of a parapet of a redoubt exactly square.

2. Each face of it is equally divided into two parts.

3. These divisions are marked by pegs.

4. A string is drawn from a peg to the opposite peg, which will pass through the center.

5. You must take of this string, since each face of the square redoubt is towards the center, precisely an eighth of the length of a face. The Pl. 15 will explain what has just been said. It is supposed that two hundred and fifty-six men, or one hundred and twenty-eight files are designed to defend that star-work; which makes thirty-two files, and consequently thirty-two paces for each line of the redoubt e f g h; the eighth part of a face makes four paces, which is marked perpendicularly in the middle of each, and towards the center of the redoubt: these eighths are distinguished by pegs a b c d, and from these last are drawn straight lines to the angles e f g h; which gives the line of the parapet of the star-redoubt. As to the thickness of the para-
pet, the breadth of the berm, the fosse, and the ban-quette, their measure is left fixed higher, tracing them parallel with the star.

By these kinds of works a cross-fire is obtained, and consequently the advantage of one line protecting another. The entrance will be equally made upon that side which is the least exposed, and always in a salient angle, 1. When it is masked by a traverse, it must be broken, 1, as the face is which is before it. In this example thirty-two files have been reckoned for the defence of each face of the square redoubt, but afterwards having made a star of it, and by that means the interior line of the parapet having more extent, it might be thought that the detachment designed for the defence of that work would not be sufficiently strong to line all the parapet: nevertheless this change of figure is of so little consequence on this occasion, that by opening the files a little more than common, it is completely remedied.

ON THE QUANTITY AND QUALITY OF THE DIFFERENT MATERIALS WHICH ARE REQUIRED IN THE CONSTRUCTION OF FIELD-FORTIFICATIONS.

1. EVERY common fascine which shall be made use of in the construction of field-works or fortifications must be ten feet long and one foot thick. A fascine is raised by means of six pickets, which are driven obliquely into the earth, so that two together form the shape of a cross. These pickets are tied with willows or birch twigs. It is upon supporters or tresses of this kind that fascines are made, which are properly faggots bound together with rods, at intervals of one foot each in breadth. Six men are required to finish each machine; viz. two to cut the branches, two to gather them up, and two to bind the fascines. Six men may with great ease make twelve fascines in an hour;
the smaller sort of willows or birch twigs are best calculated for this work. The fascines are fastened to the parapet, which would otherwise crumble and fall down: a redoubt, constructed en crêmaillère, must have fascines eight feet long.

2. There must be five pickets for each fascine, and each picket must be three or four feet long, an inch and a half thick, and sharp at one end; they serve to fasten the fascines to the parapet.

3. When you cannot procure wood for the fascines, the parapet must be covered or clothed with pieces of turf four inches thick, and a foot and a half square; these are fastened to the parapet with four small pickets eight inches long.

4. The fraises or pointed stakes must be eight feet long, five inches thick, and be sharp at the top. The beams upon which they are laid must be twelve feet long and six inches thick. These beams are spread horizontally along the parapet, and fraises are fixed to them with nails seven inches long; after which the beams are covered with earth. Two men will make twelve fraises in an hour.

5. The palisades by which the ditch or fosse of a work is fortified must be nine or ten feet long, and six inches thick; they must likewise be sharpened at the end. If you cannot procure them of these dimensions, you must use smaller ones; in which case you will have the precaution to mix a few large stakes.

6. The pickets which are fixed in wolf-holes must be six feet long, four inches thick, and sharp at the top.

7. The beams belonging to a chevaux-de-frize must be twelve feet long, and six inches broad. The spokes which are laid across must be seven feet long, four inches thick, and placed at the distance of six inches from each other. These chevaux-de-frizes are made use of to block up the entrances into redoubts, to close passages or gates, and sometimes they serve to obstruct the fosse.
8. Gabions are constructed of various sizes. Those which are intended for field-works must be three or four feet high, and contain two or three feet in diameter. These gabions are made by means of long stakes, three or four feet long, which are placed so as to form a circle, which is two or three feet in diameter. The pickets must be covered and bound in the same manner as hurdles are. Gabions are chiefly of use in embrasures. They are fixed close to each other, and are afterwards filled with earth. There are also gabions of one foot, with twelve inches diameter at the top, and eleven at the bottom. The bank of the parapet is lined with gabions of this construction, behind which troops may be stationed, so as to fire under cover through the intervals. A quantity of large wooden mallets, rammers, hatchets, axes, and grappling-irons, is required for this work.

INSTRUCTIONS FOR INTRENCHING AN ARMY IN THE NEIGHBOURHOOD OF A TOWN OR VILLAGE.

[Illustrated by an Engraving.]

In constructing or throwing up intrenchments the same rules must be observed that have been laid down for other works, as far as they regard the thickness of the parapet and the breadth of the fosse; but it is not possible to describe precisely the figure and shape of them, as they must wholly depend upon the nature of the ground; on which account it would be absurd to point out stated rules for regular intrenchments. The ground alters at every approach; the formation of your lines and angles must of course depend on that alone. Nevertheless, there are some general principles which may be nearly reduced to the following heads. It is necessary.

1. That the angles be neither too acute nor too obtuse with respect to the works which are contiguous to them in order.
2. That one line may be protected by another within musket-shot.

3. Where there are eminences the lines should be constructed in such a manner that the slope and foot of each eminence lie uncovered.

4. If that should not be practicable, on account of the steepness of the brow of the hill, or from its being interrupted by smaller heights, the greatest care must be taken to flank that side which is covered by the fire of any particular line.

5. The flanks of the retrenchment must, moreover, be well supported, to prevent the enemy from turning them.

6. The greatest precautions must be taken to throw obstacles in the way of the enemy, at whatever quarter an attack may appear practicable. These obstacles consist in chevaux-de-frizies, palisades, wolf-holes, abattis, mines, &c.*

7. When the ground is intersected and broken by hills or vallies, salient angles must be constructed on the first, and some artillery placed; and, on the other hand, re-entering angles be made in the gorges, in the vallies, in a word, wherever two eminences occasion a narrow bottom.

8. That small redoubts be erected, which must be closed at marked distances from each other, in order that if the enemy should force any part of the retrenchment, he may not be able to withstand the fire which would naturally be poured upon his flank, and that he necessarily should be forced to abandon the advantageous position which he has just attained.

9. That the ground to be so chosen as not to let any part of the intrenchment be commanded by the heights which may lie on its flanks or in front;

* The Prussians, with great reason, place much dependence on small mines for the protection of temporary fortifications. They have not, however, made many improvements in this branch of military science, although very few are wanting to render it perfect.
without this precaution the troops would be continually exposed to the enemy’s cannon.

10. That openings be left in several places, containing thirty to forty paces in breadth, to afford ground sufficient for the troops to advance with ease; these openings must always be made in the re-entering angles, and never in the salient ones, and they must be masked by fleches or arrows, or by traverses; otherwise they must be closed by chevaux-de-frises.*

11. Behind the intrenchment there must be good and practicable roads or avenues. If they should want repairing, no time must be lost to effect that indispensable measure. Without this precaution, it would be impossible to make a safe and orderly retreat.

* The author proposes in this article, (viz. 10.) that openings should be made at the distance of thirty or forty paces. Many disadvantages might, however, accrue from their being so wide. In the first place, it would be extremely hazardous for any body of men who are upon the defensive and not very numerous, from the circumstance of its being intrenched, to remain stationed in intervals of that latitude. The troops would be liable to be frequently surprised, and always to be harassed.

Such openings, from their width, would furnish means to the assailants to have perpetual cross-firings against the interior of the intrenchments, and to gall the troops employed for their defence.

It will be answered, that men from close or extended order must have large outlets, in order to afford them opportunities to deploy with ease and promptitude. This only proves that extended order is attended with great inconveniences, which the scattered or smaller one does not experience, since it can advance or deboûche with great ease through openings of ten or twelve paces.

It is to this distance that such intervals, in our humble opinion, ought to be limited; we would further recommend that they should be masked by traverses, in the same manner as those described in the foregoing page.

It will be obvious that traverses which are destined to mask cover sorties, and to facilitate the attack of the besieged, must never have a fosse, at least they should have them in very few instances indeed, except where the line of attack is extensive.
What we have thus generally stated is specifically detailed in the annexed plate. The right flank of the intrenched army is covered by a deep and marshy valley, into which runs a muddy rivulet that is not fordable. The right is appuyed by a mountain, on which a redoubt has been erected. The lines from this redoubt follow the circumference of the hill. In front of the latter is a wood, which is cut down, that it may not intercept the view of those who are stationed in the redoubt. The village of Weilheim stands at the foot of the mountain; in front of this place two fleches or arrows have been constructed, which are joined by the line. There are bridges of communication over the rivulet, in order to keep up a free intercourse between the camp and the redoubt on the mountain. In front of Weilheim is a height, having a gradual slope, and at its foot stands the village of Mansfeld, which is surrounded by defiles and by hollow roads. This eminence has been converted into an advanced post, fortified by a redoubt, in which are posted four hundred men, with some pieces of artillery. The back parts are closed by some chevaux-de-frises, in order that if the enemy should become master of this post, he may be instantly dislodged by the cannon from the intrenchment. The sole object of this advanced post is to prevent the enemy from taking ground upon it in the course of a night, from erecting batteries, and, by the advantage of such situation, from firing upon the camp. The retrenchment is constructed upon the eminences which lie between Weilheim and Stemmern; the lines are correspondent to, and follow their circumference, and are raised in such directions as mutually to support one another by their fire; there are likewise close works, as in the entrance into the village of Stemmern. The entrance is masked by a redoubt, which opens behind, and protected by the lines that have been formed upon the neighboring heights. The small wood which is in front of the village, is likewise cut down,
to afford an open view. From Stemmern the retrenchment continues as far as the high mountains which are covered by a thick wood. This wood effectually secures the left flank, as it is almost impassable. For greater security a great abattis, o, has been made across the wood, which is defended at appropriate distances by the infantry pickets, p. The gap or opening which appears behind the left of the camp, is masked by a redoubt q, which is erected upon a small eminence; a line of communication has been made from this last redoubt, as far as the left of the intrenchment. There are several passages, s, thirty paces wide in this place, which are shut by chevaux-de-frizes for the purpose of annoying the enemy, by ordering the cavalry to pursue when the former has been repulsed.* They encamp behind the intrenchment; the infantry in the first line and the cavalry in the second.† The village of Weilheim is occupied by two battalions, and the village of Stemmern by one battalion. Four roads are perceptible behind the camp, u, x, y, z, by which the troops, in case of necessity, may easily retreat.

The fortifying of posts of this description is generally entrusted to engineers. Every infantry officer ought, nevertheless, to be so far master of ground as to take advantage of that essential knowledge, by applying it on emergencies.

* The objection which we have started against wide openings, would appear to be done away by a supposition in this place that they are extremely useful to the operations of cavalry. But as cavalry, by the rapidity of its movements, can always advance much quicker than the infantry, we must still maintain that these openings ought not to exceed ten or twelve paces in width. The openings through which cavalry must advance can only be masked at some distance, as cavalry cannot, like infantry, pass over the traverses.

† Infantry officers ought to study the art of defence, particularly when it relates to field or temporary fortifications, in all its branches.
References to the Plate representing an Army intrenched in the Neighbourhood of a Town or Village.

A. A deep and marshy valley, with an unfordable rivulet across it.
B. A redoubt constructed on a mountain, by which the right wing is appuyed.
C. A small wood in front of the mountain.
D. A line which connects two fleches together at the foot of the mountain, where the village of Weilheim is situate.
E. A rivulet, over which are thrown bridges of communication, to facilitate an intercourse between the camp and the redoubt on the hill.
F. An eminance with a gentle declivity, at the foot of which is the village of Mansfeld, surrounded by defiles and hollow roads.
G. Defiles and hollow roads.
H. Lines which run along the circumference of the heights about Weilheim and Stemmern, forming a retrenchment: they are constructed so as to succour one another by a reciprocal fire.
I. Close works.
J. A redoubt which masks the entrance into Stemmern.
K. A small wood, cut down in order to obtain an uninterrupted view in front of Stemmern.
L. A thick wood which covers some high mountains, by which the left wing is supported or appuyed.
M. An abattis which is made across the wood for greater security, and is defended by infantry pickets.
N. Infantry pickets.
O. A redoubt on a small eminance, constructed for the purpose of covering the opening which is behind the left wing of the camp.
P. A line of communication from the last redoubt to the left of the retrenchment.
Q. Several outlets or passages, thirty feet broad, and closed in by chevaux-de-frizes, to afford an opportunity for the cavalry to advance, should the enemy be foiled in his attack against any part of the works.
R. The infantry and cavalry encamped behind the retrench-
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ment. The infantry in the first line, and the cavalry in the second.

U, X, Y, Z. Four roads behind the camp to facilitate the retreat of the army, should it be pressed.

Description of the annexed Plate, representing a Camp, with Inundations in Front.

Fig. 1. a, b. Two dykes, measuring forty paces in length, five feet in breadth, and as many in height. C, D, two rows of stakes, from four to five inches thick, which are driven into the rivulet.

E. The coffer which has been formed by means of these stakes, and has been filled up. It is eight feet in breadth.

F. The adjacent country, which is inundated by the rivulet being forced out of its natural current by the last dyke, and by a and b.

G. and H. The outlets which the rivulet seeks to continue its course.

I. Small creeks or ends of ditches dug about the ground. Fig. 2. Represents the current of a rivulet, with a dyke to occasion inundations. Camp, with the several dykes in front, which are calculated to produce inundations. The spaces between these dykes are called coffers, viz. No. 1, 2, 3, 4, 5.

THE MILITARY SURVEY REDUCED TO METHODS AND PRINCIPLES.

A GENERAL at the head of an army, whether encamped or on a march, should, if possible, see everything himself: trust not to others: for what can be preferable to the eyes of a master? Indeed it is almost impossible for the chief of an army properly to regulate the art of war, judge of the designs of an enemy, nor even of his own movements, if he is not perfectly acquainted with the country in which he makes war. A commander of an army, who neglects so important a knowledge, is unworthy of the name of General. This knowledge is not abso-
Military Survey Reduced

Lately required of the soldiers and officers under him; but to those of the latter, who are anxious to advance in the science of arms, and promote their fortune, it will be found necessary. This equally concerns the nobleman, whose title too frequently is all his merit, and gives him solely the right to command; and those who by unremitted application and dint of courage have exalted themselves. Either of these who would add to their titles the many virtues and qualities that may render them capable of conducting an army, should necessarily learn to take a military survey. This is the first rudiment of a General; it is no less so of every individual officer. It is this alone which in the science of arms requires most practice; it is this alone which facilitates the access to the height of war—which conducts us to the very summit.

He that would acquire this knowledge, must keep his imagination ever on the alert in war, in hunting, travelling, walking, and in riding. No sooner is he arrived at a camp, than he should calmly examine in his tent the map of the country where he is, and attentively consider the post which he occupies; he should also view the situation where the enemy is encamped; whether the two armies cover its places; if the line of communication is strictly observed, and runs on the same parallel according to the movements which either army makes; if one can possibly seize on an important post sooner than the other; whether the wings are well secured, and by what means; the chance of a surprise; the road to be taken for that purpose; the difficulties that may be encountered in the march; the time it will take for him to go to the enemy, or the enemy to advance to him; from whence the enemy is victualled; the possibility of intercepting his convoys, and the risk of having his own cut off; what position is to be taken should the enemy make a movement, either to the right or the left; or any other alteration in the disposition of their camp. Nothing can be more in-
structing than this—nothing can better form the mind and ripen the judgment. If it is not the military logic, it is at least its introduction. Though the map is the necessary first meditation, yet it is but an imperfect insight. A map conveys an idea of the country; but it is absolutely necessary to have a more certain information.

Projects of campaign, offensive as well as defensive, are formed in the cabinet. The map is consulted, this is the oracle to which they in general have recourse. It would be dangerous to take information from those who have great knowledge of the places, as it would, in fact, be divulging the designs in agitation. Thus it is delivered in a rude mass, leaving it to the General to bring it into due shape and preparation, according to the nature of the country where it is determined to carry the war. This manner appears too indecisive, too much abridged; for the project of a campaign, which is of no small importance, nor was it so conducted when such Generals as Turenne, Condé, Luxembourg, discussed and established it in the councils of war, from the actual knowledge they possessed of the country.

In the first place he should reconnoitre the situation of the camp, the extent of ground which the enemy occupies, its advantages and disadvantages. From thence he should pass to the field; of battle, view it collectively, and afterwards examine its particular parts and proportions. He will first see whether the wings are well supported; if by a rivulet, he should examine its bottom and banks, and find out whether they are good or bad, if fordable in every part, or in particular places only; if either of these is the case, it is to be put down as insufficiently protected, that the enemy may take advantage of it, and by fetching a compass turn the flank or rear of the wing.

In the next place, he must observe the ground in that quarter, if covered, or naked and flat, whe-
ther there are heights which may command the camp, and of the necessity of taking possession of those heights to cover this side, as if they should be of any avail against the enemy. Should the wing be covered by a morass, it should be sounded and examined whether its bottom be firm, and inquiry made of the inhabitants, if the course of the water can be turned into it, to render an attempt less practicable. These remarks should be committed to paper to meditate on at leisure, and the certain consequences may be drawn from the inspection of the ground.

The left wing should then be considered; if bounded by a village, he should make the tour to reconnoitre with the utmost precision. He should examine whether the houses are of stone, wood, or clay, if there are distant houses which the enemy may turn to account; whether it is important to fortify the village, or make trenches in the streets, only to support the houses; whether the church is good; whether the village is not commanded by some heights by which he may be turned; he will then frame in his mind the mode of attack, and the necessary defence. Nothing is more essential to the taking of a military survey, than this method.—After having deliberately examined and noticed every remark and observation on the side of each wing, he should traverse the whole front of the field of battle, from the extremity of one wing to the other.

If the army is encamped according to the ordinary method, the cavalry on the wings, and the infantry in the center; the nature of the ground opposed to the former should be carefully examined, if it is even covered, and forms a spacious plain to contain the wing of cavalry, it is not alone sufficient to determine the choice of it, the ground beyond it must be attentively considered, which the enemy may occupy; for the position of the one may serve as a rule for the regulation and disposition of the
other. If the enemy he is about to engage, or who meditates an attack upon him, has either before or behind him ground totally different in its nature, and favourable to the action of the infantry, it is easy to comprehend the arguments and rules of war, that should the enemy be driven to the covered places in his rear, the cavalry will no longer be of any service; thus, he cannot follow up his advantage, but may be repulsed by the very infantry which a skilful and judicious enemy has placed in these covered places for the support of his cavalry. This observation is a convincing proof of the necessity of supporting this wing by another of the second line of infantry; for, if the cavalry of the first line pushes as far as the enemy's infantry stationed in the covered places, there is no doubt of their rallying, in case of a defeat, under the fire of the infantry, and afterwards returning to the charge, and that the infantry will likewise place themselves between the squadrons; the results may be easily foreseen if there is no infantry to oppose them. When a wing of cavalry is supported by the second line of infantry, and platoons intermixed with the squadrons, they will be found capable, after having beaten the cavalry of the enemy, to force back its infantry, by quickly marching its own through the intervals of the squadrons. These reflections will readily occur from the inspection of the ground. Thus the cavalry, depending on itself, is of little import; and a General should always encamp the infantry near where he has placed the cavalry. This remark on so common a fault, is made with the intent of warning a General, if he is capable of profiting by so important an advice. It will, perhaps, be said, that these errors seldom occur; the answer is, they may be daily seen in the encampments, and when suddenly attacked, the troops are compelled to make manoeuvres, peculiarly dangerous, in presence of the enemy, by sometimes changing one wing, and replacing it by another. Many examples may be cited, even in the present time, as...
the subject abounds with instances and facts, but they are a less important than demonstrative an argument.

The ground in front of this wing (cavalry) having been well observed, the view should be extended towards that of the infantry, supposing it to be in the center. It is perceived that it is uneven, and will favour the acting of the infantry in some places, and in other parts permit the cavalry to be of great effect, supported by the infantry. After having examined the ground to the right of the infantry, and finding it is equally advantageous on either side, or at least proper for those kinds of troops, next survey the field of battle, and the ground which the two armies occupy on either side. He should suppose it different from that which has been just examined; for instance, if a small elevation of ground, gradually descending towards the enemy, it must be attentively examined; if the opposite ground forms a plain, it will of course be deemed a proper place for the erection of a battery; the enemy will not suffer this to remain undisturbed, fearful of being long incommoded, and to deliver themselves by a spirited effort on that side, will attack and endeavour to render themselves masters of it, and thus separate one wing from the other; this blow cannot be struck but by the infantry, supported by as many squadrons as the small plain can contain. It must consequently follow, that the infantry must be posted on this eminence, supported by the cavalry, to oppose a similar force.

If afterwards the ground is hilly, intermixed with small plains, inclosures, and houses, as much on one side as the other, in front of the infantry, carefully inspect it. If among these impediments there appears one which it is difficult to force on the side of the enemy, he may conclude that they will be posted there, and will not abandon such an advantage, and consequently it would be rashness to attack them in it. Some of these places he will suppose less provided with troops than others naturally not so
strong, near which the corps de reserve should be brought forward, and the places duly noticed most convenient and advantageous to erect batteries. If advancing still further to the left, and to the rivulet which covers it, he will observe if the country is level and open, fit for the operations of the cavalry; he will then remark that the cavalry is well placed according to the ordinary method, viewing, however, whether the banks of the stream are lined with hedges or tufts of trees; if on the other side, the borders are not lined in the same manner, he may judge that the enemy will there post their infantry, and keep up from thence a heavy fire on the flank or rear of this wing. He must endeavour to deprive the enemy of this advantage, not only by rooting out and cutting down the hedges, bushes, and trees, but will also place the infantry and dragoons on the flank of these two wings of cavalry.

ON THE ATTACK AND DEFENCE OF UNFORTIFIED HEIGHTS.

To conduct military operations in a mountainous and broken country, requires much greater abilities, a better coup-d'œil, and a more intimate acquaintance with the art of war, than any kind of warfare in an open level plain. In the former, much less depends on the superiority of numbers. A small army or corps, may take so advantageous a position, as to render superfluous the use of the shovel or pick-axe for defending it against an enemy of twice its strength; and should not this enemy find means by skilful and well-concerted movements to turn a corps thus posted, to interrupt its communication with its magazines, raise alarms for the safety of its strong places, or inspire it with apprehensions concerning the destruction of a remote part of the country, and then compel it to relinquish its position, the
major part of the campaign will, most likely, be lost in inactivity on the one side, while the other is gaining time to receive reinforcements, and acquire additional strength (which is of the utmost importance in a defensive war) and of consequence to improve its situation so far as to be able to convert defensive measures into offensive operations. Field-marshal Daun's camp at Ewanowitz, at the commencement of the campaign of 1758, and that of Prince Henry of Prussia in 1759, at Liebenthal and Strehle, fully prove the truth of the above assertion.

It is no easy matter to obtain a correct knowledge, and form a just idea of a hilly intersected country; neither is it attained without much practice, and a good natural coup-d'œil. The aspect of any given tract of country is so very different, if presented under different points of view, that you would scarcely know it to be the same. The roads have generally so many windings and turnings, that they are not only in a great measure hidden from our view, but they are also frequently represented on the map, twice as long as they would be in the same space in a level country. You will frequently find that from their depth and marshy bottoms, ravines and valleys appear impassable, while the brush-wood and meadow ground, which may escape an incorrect and superficial observer, made the contrary the case. Again, others seem to offer a safe and easy passage, and when tried, the horses plunge through the sedge, or old withered grass, which hide the morass, and the waggons or artillery sink into the mire.

The means of obtaining an accurate knowledge of these circumstances, and the manner in which a particular position, and its environs, or a tract of country are to be reconnoitred, being so fully and ably explained in the Field Engineer of the late celebrated Captain Tielke, an excellent translation of which has been published by Colonel Hewgill of the guards, we shall here confine ourselves to treat of the best
OF UNFORTIFIED HEIGHTS.

and most advantageous method of employing the different species of troops in hilly or mountainous positions.

I. On the Attack of Heights by Light Infantry.

No hill should be too steep for light infantry, and no road too rugged. It is a common saying among the sharp-shooters of Tyrol, "where a goat can go, a man must go." On consulting the records of military achievements, especially those of Hannibal and Alexander the Great, we shall meet with sufficient proofs of the truth of this saying.

Light infantry, therefore, seem best adapted to ascend and attack rugged and steep heights; but they must be supported by regular infantry of the line, as otherwise they might not be able to maintain a post which they have carried. Their attack should be made à la débandade, and in a full run, not in close order, or with a regular advance. If the face of the hill offers dips, hollow-ways, &c. where they can find shelter from the enemy's fire, they should halt there for some moments, especially if they have nearly come up with the enemy, that they may charge him in full breath, and with unimpaired vigour.

All firing with small arms must be prohibited on pain of death; the bayonet must here decide. Firing in this case, is the refuge of the timorous, who are afraid of closing with the enemy; it does scarcely any execution, and wastes much of the time, which is of immense value to the assailants. To advance slowly, exposes the troops to greater danger, because,

1. They remain for a longer time under the enemy's fire.

2. The courage of the troops cools when they are allowed time to reflect on the melancholy fate of their comrades, who are either grievously wounded, or killed by their side; while, on the other hand, advancing rapidly, they have no time to think, and
soon lose sight of all the objects which might tend to damp their spirits.

3. By advancing quickly, you are also more likely to strike terror into the enemy, and you allow him no time to contrive means for opposing you by dextrous offensive movements. His courage sinks at every step you take, from the natural complexion of the human mind; for, in proportion as you advance, the impending danger presses nearer upon him, and it is an unquestionable truth, that the danger which you see approaching, and which you cannot ward off, will much more forcibly operate upon your mind, than that into which spontaneously you plunge yourself.

If the nature of the ground be such, that you cannot fall upon the enemy’s flank, but are necessitated to advance straight up the hill, the light infantry, as soon as they have ascended the eminence, should endeavour to throw themselves with impetuosity on one or both of his flanks, and, if possible, to gain his rear. If this attack be supported with regular infantry, or grenadiers, advancing against the enemy’s front, the light troops who have succeeded in getting into his rear, must keep up a brisk fire, which cannot fail to create confusion in his line, and will, in all probability, bring on its total disorder and flight. If the enemy should not have secured his flanks and rear, and moreover, should be sufficiently imprudent and ignorant to continue immovable on the summit of the height, and not advance to the edge of the declivity, to oppose your ascent, by raking the whole face of the eminence, you may be sure of victory. The greatest obstacle is already surmounted, and the shock of the attack will probably not cost you much; you have but one or two fires to sustain, and these are likely to be given without aim, and by troops rendered faint-hearted by the rapidity of your advance.

If the enemy be provided with horse, the light infantry must form again, as soon as they have gained
the summit, and make the attack in close order; and if they fire, at least half must always remain loaded, and ready to fire, in order to oppose the attack of the cavalry. The bayonet is, in our judgment, the most proper for attacking infantry; but against cavalry, foot soldiers should defend themselves by fire.

Should the enemy give way, the light infantry must pursue him briskly, and keep up firing, that he may not recover from his disorder, and form again; but if any regular infantry of the line join in the attack, they will of consequence advance upon the enemy as he retreats, and by this means cut off part of his troops, and deliver them into the hands of the corps which is pursuing them. Villages, especially those which contain church-yards, and have stone-walls round the gardens, are peculiarly fitted for this purpose. By occupying them you may dispute the passage with the enemy. No intrenchments or previous preparations are required on this occasion, not only because a beaten enemy is devoid of courage, but also that the troops which hang on his rear, allow him no time to make a stand, or any kind of regular attack; the sudden check strikes him with awe; he may, perhaps, endeavour to move sideways, and avoid the village, &c. but instead of saving himself by this movement, he either inevitably draws nearer to his pursuers, or at least affords them an opportunity of coming up with him.

As long as the enemy is not completely routed, you should not stop to take prisoners, but merely secure the officers, and order the rest, as they surrender, to throw away their arms; as otherwise you will proceed too slow in the pursuit, and weaken your corps too much by the guards you send back with those who are taken; but if you have a reserve, you may order such as throw down their arms to surrender themselves to it. Pursuing this method, you will not take so many prisoners, it is true, as you might otherwise obtain; but surely, this can bear no com-
parison with a decisive victory, which you are sure to gain if you push on briskly; while, on the other hand, if your troops stop and disperse to plunder and take prisoners, the enemy will form again, and perhaps regain all the advantages they have lost.

On the Defence of Heights by Light Infantry.

In the defence of heights you should endeavour by all means in your power, by skilful movements, by rapidity and courage, to prevent the enemy from gaining the summit; for if he has once attained this point, all opposition, particularly from light troops, will prove fruitless. A part of your light troops (especially if your corps be not supported by infantry of the line) should be posted quite on the crown of the height, as a reserve, and the rest be formed on the edge of the center of the eminences and on the declivity; you must at the same time take care to occupy all defiles, ravines, &c. you may discover, and turn them to your advantage. The reserve troops should be drawn up in close order, and divided, according to their strength, into battalions, companies, or platoons.

If the enemy, in spite of your resistance, should gain the height in one or more points, the above reserve division, or as many of them as shall be thought necessary, should rapidly advance against him (the rest remaining in perfect order, and in full readiness to act as occasion may require) and charge, with fixed bayonets, without firing, force him down the height, and give him a well-directed fire on his flight, taking care, however, not to pursue the enemy. They must either continue formed on the declivity, or fall back to their former position, leaving the pursuit to the other troops, who by this time will probably have recovered from their confusion. The troops who occupy the face of the hill, as well as those who defend the ravines, defiles, &c. must, from the very beginning of the action, dispute every inch of ground with the utmost intrepidity and valour.
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As their fire constitutes their principal defence, it should not only be kept up with spirit, but also not be thrown away at random, and peculiar attention be paid to its doing due effect. As to the enemy's fire which proceeds from a lower ground, it can hardly, for this reason, prove very hurtful to your troops, yet they should not neglect to avail themselves of every means which may offer to cover themselves from it, by throwing themselves into hollow-ways, and firing out of them, or by taking shelter behind mounds, stone-walls, trees, palings, &c.

Should the enemy form his attack in one or more columns, that part of your troops against which the head of a column points, should, on its approach, make a slow retrograde movement, keeping up a brisk fire, while those on the right and left fall on the flanks of the enemy's column, and endeavour to throw it into confusion.

If this manœuvre should succeed, or the enemy, after having gained the summit of the height, be routed by the reserve, all the troops, except the reserve, may pursue him, and hang on his rear as far as possible, and take as many prisoners as they can obtain; for the former objection applies not to this case. Yet it is of the utmost importance that the troops who occupy any important posts, such as bridges, fords, hollow-ways, &c. never quit them to join in the pursuit, lest the enemy should take advantage of this imprudent conduct, and, to your great inconvenience, seize on the posts then abandoned.

On the Attack of unfortified Heights, by Infantry of the Line.

If the corps of infantry of the line, destined for the attack of heights, be attended by light infantry, the commanding officer should employ the latter, pursuant to the rules already laid down and explained. In case of a want of light infantry, the deficiency should be supplied by volunteers or grenadiers.
ATTACK AND DEFENCE

The infantry of the line advances in close order, formed either in line or column, according as the ground permits; or, which appears in general by far the best method, by battalion, nay by companies, if the ground be very difficult and confined.

In case of the light infantry or volunteers being repulsed and pursued by the enemy, they must fall back through the openings made for that purpose by the infantry of the line, form in the rear, and return to the charge.

The infantry of the line must advance with regularity and steadiness, without hurry, and without hesitation, and take peculiar care not to open out, or close in, so much as to occasion disorder. To fire with small arms, so far from being useful, would rather prove hurtful; no shot should be fired, but after you have gained the summit, and nearly closed with the enemy; and even in this position we would rather have the infantry make at once a brisk and resolute charge with the bayonets than stop to fire.

Both cannon and musketry fire is more peculiarly fitted to the defence than the attack. The force of the assailants consists in the bayonets, and their success depends on the rapidity of their motions.

As soon as the enemy begins to fall back, whether in confusion or good order, the infantry which forms the attack, must pay a particular attention to their files being well closed and their ranks well dressed. They must pursue the retiring enemy at a quick yet steady pace, keeping up a brisk fire, and taking peculiar care that nearly half the corps be constantly loaded, to attain which end the troops should either fire by sub-divisions, or the firing be confined to the front or center ranks, the rear rank being thus consi-

* The intelligent reader will hardly suppose us to censure the idea of cannonading the position of an enemy, previous to the troops marching to the attack. But when the assailants are actually advancing to the charge, they should, in our judgment, never stop to fire.
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Ded as a reserve. By attending to these rules you will gain the important point of being continually prepared, and ready to act either offensively or defensively if the enemy should make a stand, and either be supported by a reserve or advance cavalry to check your pursuit.

If, as is generally the case, the enemy is pursued by a detachment only of the army, this corps should take peculiar care not to fall into an ambuscade, nor suffer itself to be cut off from the main body. The infantry, therefore, as it pushes onwards, ought to take possession of all the passes, such as bridges, fords, ravines, villages, &c. Vedettes and small parties should also be posted on the summits of heights, and in every place where different roads meet, or which offers an extensive prospect; and these vedettes as soon as they discover the enemy's troops advancing towards them, ought instantaneously and with all possible expedition to repot it to the commanding officer of the detachment.

Defence of unfortified Heights by Infantry of the Line.

Light infantry, or if you have none, grenadiers or volunteers, must be posted on the declivity of the height, and occupy ravines, defiles, &c. which may offer. Avenues and posts of importance, such as church-yards, stone-buildings, bridges, &c. must be defended by infantry of the line, or rather grenadiers, especially if they can be speedily supported from the principal post.

Your infantry should be drawn up on the edge of the declivity following the contour of the hill, and in such a manner that their fire envelopes the roads, defiles, ravines, &c. which run in a perpendicular or oblique direction to your front. They should be formed either in the line, or by battalions and companies, with large or small intervals according to the strength of your corps. You should be peculiarly attentive to form as strong a reserve as your strength
will admit; for the enemy may gain the summit of the height where you least expect it, and fall on your flank or rear, which, however small may be the number of men by whom it should be executed, will occasion disorder and dismay among your troops, and for this reason prove extremely dangerous.

As much as we disapprove of firing in the attack, we recommend it in the defence, but it should be executed with effect; for an empty noise, so far from checking the ardour and progress of the enemy, will rather inspire him with additional boldness. The troops should, therefore, be allowed sufficient time to load, and to take as good an aim as the smoke and other circumstances will allow. They should at least constantly present below a horizontal direction, and raise their pieces as little as possible when they fire, and never begin firing but after the enemy has approached within a good shot. The first round is so extremely essential, that at least this should never be given at random. If executed in such a manner as to do much execution, it will greatly abate the enemy's courage, and check his eagerness to advance.

You should not post your troops quite on the summit of the hill, nor wait the approach of the enemy in that position, as this would prevent you from firing upon him until he has entirely ascended, at which time it is generally too late. On the contrary, you must advance quite to the edge of the hill, and endeavour as much as possible to rake the whole declivity with your fire. We would, therefore, make the front rank kneel, and fire either by ranks or divisions, observing constantly not to permit the whole battalion to fire at once. Your troops should aim at the enemy's feet, which is a rule never to be departed from, when you fire from an eminence, as otherwise nearly all the shots will, in all probability, be lost in the air.

If, notwithstanding your fire, the enemy continues
to advance, you should, the moment he ascends the height, charge him with the bayouet with impetuous intrepidity, before he has time to recover himself or to redress the disorder which your attack will probably have occasioned in his ranks, and repulse him down the hill. If this attack be executed with spirit and good order, it will most likely be crowned with success; but, if it should not be attended with the desired effect, the reserve must advance with steadiness and close order, while the defeated troops retire through its intervals, form in its rear, and constitute a new corps of reserve. Should, however, all your efforts prove fruitless, and you be obliged to retreat, your retrograde movement should be performed with as little confusion as possible, and detachments of light troops, or if you have none, of infantry of the line, be sent out to occupy all the passes. The battalions should march in such order as to be able to give one another mutual support. If there are any commanding heights in your retreat, you should not neglect to occupy them, nor omit to take possession of stone-buildings, or church-yards, in which the troops must defend themselves to the last extremity, in order to gain time for the rest to retreat. To form squares on such occasions would be highly improper; they are useless, and frequently hurtful in a plain; and in a hilly broken country they should not be made use of on any account whatever.

If the enemy be much superior to you in point of number, it will be highly advisable to sacrifice a part to the welfare of the corps, and to order a few battalions to maintain themselves in a convenient post as long as may be required to secure the retreat of the remainder of the corps.

*Attack of Heights by Light Cavalry.*

There remains no doubt that the same benefit cannot be derived from cavalry in a hilly and intersected country, as is produced on an open level ground. The light-horse may, however, be em-
ployed to advantage. But few hills are so high and steep that hussars cannot ascend them, if they have sufficient resolution to make the attempt. Hussars are for this reason preferable to all other troops for reconnoitring and obtaining a full and correct knowledge of the environs, or of any particular position, which is a point of great importance, especially when the army acts in a mountainous country. However excellent your position may appear, the enemy may discover some height or pass, which you have neglected to occupy; he possesses himself of it, and not only weakens your position, but may also render it utterly untenable. Were it still the custom to make dragoons act on foot as well as on horseback, they would be of great service in the countries alluded to above. In some armies, they actually remain on the old footing. They act in both capacities in the British service.

By cottoying ravines of hollow-ways which surround heights, or by making a considerable detour, you may in time get into the rear of an eminence, but the infantry move too slowly to be employed on such occasions, as the distance you have to march is in general considerable. To mount infantry on the troop is a very bad plan, inasmuch as it fatigues the horses, and disables them from ascending steep heights, while at the same time the infantry become stiff and inactive from their not being used to ride. Dragoons are much fitter for this service. They can arrive at any particular point with the greatest expedition, dismount, throw themselves into hollow-ways, houses, mills, &c. In short, perform all the duty of light-infantry, and are at least able to maintain their post, until the arrival of the infantry of the line destined for their support.

No cavalry, however (not even hussars, nor any other light-horse), should be left in mountainous and inclosed positions, without being supported by infantry, since they cannot patrol and scour the copses, ravines, &c, in order to prevent their being
OF UNFORTIFIED HEIGHTS.

surprised or cut off, as they are frequently so swampy that the horses cannot pass. Light horse, as well as heavy cavalry, should avoid attacking down hill, as from the circumstance that horses running down hill are very apt to fall, the horsemen are so much occupied in endeavouring to keep them up and manage them, that they can hardly make any advantageous use of their swords. In ascending a height the reverse is the case; the horse exerts all his strength, and the rider, who has no occasion to give him any other aid than to sit close, can make any use of his sword he chooses. The height should not, however, be too long or steep, as otherwise the horses will be blown. Whether you attack up or down hill, you should take peculiar care to keep the files close in advancing.

No firing must be permitted. The sword is the only weapon for cavalry when it forms an attack.

Defence of Heights by Light Cavalry.

The observations we have made in regard to the attack, hold good also with respect to the defence. We shall, therefore, only add the following remarks:

Light horse of every description should, unless the nature of the ground prevents it (which would be an unpardonable fault in the choice of their position) advance to meet the enemy, and on no account whatever wait his attack. They must, however, take care not to push on so far as to expose their flanks, or run the danger of being cut off from their post. The cavalry which gives the first shock, has a decided advantage, and the best will unavoidably be defeated if it remains unmoved. The first principles of mechanics, experience and nature, concur in rendering this observation so extremely evident, as to preclude all further reasoning on the subject.

In case of horse being repulsed, they must not fall back at once upon the infantry, as by so do-
ing they would probably throw them into confusion, and cause them to be defeated. But they must retreat round the flanks, and form again in the rear, under the protection of the fire of the infantry.

Attack of Heights by Heavy Cavalry.

Heavy cavalry should, as little as possible, be exposed to the fire of the enemy’s cannon, and be covered from it, by being formed in a hollow, or otherwise, as occasion may offer, until the attack.

They should, if possible, be placed so, that the enemy cannot discover them, as their sudden appearance is likely to confound him, and will also prevent him from opposing to them any horse, unless by accident he should have some cavalry at hand where they form the attack.

The attack should be made with rapidity, but without firing. There is nothing more dangerous for infantry than a resolute attack of cavalry, and it generally succeeds if it be made with determination, intrepidity, and vigour.

In the battle of Collin, the Saxon regiment of light-horse of Prince Charles, commanded by Lieutenant-colonel Benkendorf, broke into the Prussian infantry, and took seven colours. It was supported by the two Saxon regiments of Prince Albrecht and Count Bruhl, who attacked the rest of the Prussian infantry in the flank and rear. By this manœuvre the victory, which the Prussians had already gained, was wrested from them and transferred to the Austrians.

In the battle of Zeondorf, the Prussian horse charged and broke through the right wing of the Russian infantry. By this attack the Prussian infantry, which had already given way, gained time to form again. They did so, supported by their cavalry, and the whole right wing of the Russian army, commanded by General Fermer, was driven in the utmost confusion into the woods and morasses.
On the 25th of September, 1759, the Prussian Major-general Gersdorf, at the head of his regiment of hussars, broke into a square commanded by the Austrian General Wehla, and obliged the corps which composed it to surrender themselves prisoners of war.

In the battle of Torgau, in 1760, the Prussian regiment of dragoons of Bayreuth, charged and broke in upon the Austrian foot, and made considerable havoc in seven battalions. This attack would have decided the fortune of the day, had not the above dragoons been attacked and repulsed by two regiments of Austrian cuirassiers, under the orders of Lieutenant-general Pelligrini. Soon after this, in the same battle, the Austrian Major-general d'Ayatzatza, at the head of the carabineers, made a successful attack on the Prussian infantry, and Captain Fuckner's troop of the regiment of O'Donnel took nine colours. Many more instances might be cited, but the above examples will be sufficient to establish the truth of our remarks.

The attacking cavalry must always be supported either by horse or infantry, into the rear of which it may retreat in case of a repulse. We would by no means advise to attack with the whole cavalry at once, for a sudden panic may produce among them worse consequences than among the infantry.

Occasions may happen when you are to attack hussars with your heavy cavalry; but from the nimbleness of their horses, they are so quick and ready in their movements, that these encounters generally have no other effect but that of harassing and destroying your troops. It should therefore be a constant rule to employ heavy cavalry against cavalry of the line, or infantry, against these latter they will certainly succeed, if they attack with resolution, and are not too much galled by artillery. They should never be led up in the face of batteries, as this would be sacrificing them without any probability of success.
Defence of Heights by Heavy Cavalry.

Heavy cavalry should never be left in any post without infantry or light cavalry, they should always be posted where the ground is most even and least confined or intersected. Its whole force consists in the shock.

Firing, which is ridiculous and useless in light-horse, may produce the worst consequences in heavy cavalry, and cannot therefore be too strictly prohibited.

If we had to defend an important post, where the retreat of the cavalry would be extremely difficult, and not to be effected without great loss, we should make them throw down their carbines and pistols. This would rid them of an incumbrance, render them more fit for rapid movements, and be attended with the beneficial effect of making them use their swords with the utmost resolution, this being the only weapon on which they should rely. If the post be maintained, the arms are not lost; if we are obliged to retreat, they form undoubtedly the least loss which can be expected on such occasions.

No attack should be waited for by cavalry; they must always advance to meet the enemy, and charge with the utmost impetuosity, but with ranks and files well closed. Whether the attack be formed by squadrons, regiments, enechequier, or in line, it is at all times proper, particularly if you act against cavalry, or if the enemy has any at hand, to keep the half, or at least a third reserve, formed with large intervals some hundred paces in the rear. Should the attacking cavalry be repulsed, they retreat through the intervals of the second line, and form again in its rear, while the latter either attack the enemy, or keep him in check, according to circumstances; in this manner the attack may be renewed more than once.
Observations and Preparations to be Observed by a General in Field Service: Also Concerning Intelligences and Spies: By General Monk.

As soon as a General can get provisions for his horse, it will be most advantageous for him to have all things in readiness to take the field. For if he take the field before his enemy, he prevents the enemy from being apprised of his designs. A General ought to be careful, before he takes the field with his army, that he provide for the punctual supplying of his army with money, ammunition, victuals, arms, men, shoes, stockings, shirts; and seeing it is impossible for an army upon a march to carry with them sufficient of all these necessaries, therefore a General ought carefully to foresee, as he advances any way, that his magazines for his army be always so near him, and so well stored with such things as he shall have occasion to use, that his designs fail not for want of any of the aforesaid things. And he must be careful that his enemy be never able to cut off his provisions at any time, or his retreat.

A General, or Chief-commander, ought to see that he does not ruin his army upon disadvantages, either by engaging them unadvisedly in battles, or by assaulting towns and breaches rashly, or by long sieges, or long winter services, without good probability and assurance in the judgment of men, that he must ultimately prevail. And he must take care always to join judgment with valour in all his actions.

A General ought carefully to lay hold on such occasions as offer themselves to defeat his enemy; and judiciously watch for opportunities when to fight, and when not.

A good commander ought wholly to avoid doing any thing, which, being but of small moment, may...
only produce evil effects in his army. For to begin a skirmish, or a combat, wherein the whole forces are not employed, and yet the whole fortune is there laid at stake, is a thing that savours too much of rashness: and yet I hold it fit, that wise and experienced commanders when they meet with a new enemy that is of reputation, before they come to join in battle, should cause their soldiers to make trial of them, by some light skirmishes; to the end, that beginning to know them, and to have to deal with them, they may be rid of that terror, which the report and reputation of these men have put them in. And this part in a General is of exceeding great importance; for these small experiences made by the soldiers, will cause them to cast off that terror, which by means of the enemy’s reputation had possessed them. Thus Livy saith, that Valerius Corvinus was sent by the Romans to make some small skirmishes with the Samnites, that a new war, and a new enemy might not affright them: but a good commander must be very careful that nothing arise, which upon any accident may take away the courage and hearts of his soldiers. Now that which may be of force to take away their courage, is to begin with loss. And therefore a commander should be very careful how he engages any of his troops in small skirmishes: and that he send no parties out of his army upon any occasion, without taking care that they be commanded by good commanders; and that the officers that command such parties have orders not to engage themselves with the enemy, unless they have some certain hopes of victory. Nor ought he to undertake to guard any passages, where he cannot bring his whole army together. Nor should he keep any towns, unless it be those upon loss whereof his utter ruin must follow. And those that he guards, he should take such care, both for their defence, and also with his army, that whenever the enemy hath any design to assail them, he may make use of all his forces to the rescue of them.
If you have any certain hopes of starving your enemy, or putting him to a retreat for want of provisions, your securest way then will be not to fight with him, especially if your enemy be of equal strength with you, or stronger than you are.

If a commander-in-chief discover his enemy's foot to be lodged in their night quarters in an open country, with their carriages, it were good then to charge them in the night, with so many horse as you shall think fit, in several places; and leave part of your horse and dragoons to make good their retreat upon occasion. If it fall out so that your horse cannot totally rout your enemy's foot, let them have orders to fire their ammunition, and then retreat.

It is very fit a General should often command his horse and dragoons to fall upon his enemy's outermost horse-quarters. The which is one of the readiest, easiest, and securest ways that I know of to break an enemy's army.

A General is not so much blamed for making trial of an ill-digested project, as he will be for the obstinate continuing in the same. Therefore the speediest leaving of any such enterprise must excuse the rashness which might be imputed to the beginning.

Difficulties of extremity are never better cleared than by an adventurous and desperate undertaking. And hence grows the difference between true valour and fool hardy rashness, being but one and the same thing, if they were not distinguished by the subject wherein they are shewed. For to run headlong into strange adventures upon no just occasion, were to shew more levity than discretion: and again, to use the like boldness in cases of extremity deserves the opinion of virtuous endeavours.

A General should always be careful so soon as he comes out of the field to visit his frontier towns, and to take with him some of his best commanders, and some of his choice engineers, and to see what fortifications his frontier towns want, and to give order for the repairing of such wants: and likewise to
take care that the magazines be furnished with a year's provision, and that he give especial command to the governors of his frontier towns to be careful by their vigilance and good intelligence to prevent sudden surprises, and valiantly to defend their towns, and providently to dispose of their provisions, in case they should be besieged.

With regard to spies, you must be always suspicious of them, because as it is a dangerous task for him that undertakes, so it is also for him that employs them: and that spies may not agree to give false advice, they should be examined severally, that by the agreement or disagreement of their advices, you may judge whether they be good: and by the verification of those which speak true or false, you shall know who betrays you, or does you true service. But this is not all, to beware of your own spies; you must also take heed of those of the enemy, which you must pre-suppose you have in your camp. For this reason, besides the secrecy which must be used in all enterprises, it is good to give a charge by publishing [in a still way] that you have a quite contrary design to that which you propose to put in execution, in order that these spies may report it to the enemy. But the most effectual means to be well served by these kind of men, is to be very liberal to them; for they are faithful to those who give them most. A General must take care that he have continual spies in the enemy's army, to know when his enemy moves, and what condition his enemy's army is in; and he ought to have in every frontier town of his enemy, some correspondence with some town-dweller, or soldier of the garrison, that by them he may understand, from time to time, what condition his enemy's garrisons are in. And if the enemy draws any forces to an head at any of his frontier towns, let the aforesaid people give the governor of your next garrisons notice of it. You ought to know that intelligence is the most powerful means to undertake brave designs, and to avoid great disasters; and
Directions for Intrenching.

It is the principal foundation upon which all Generals should ground their actions.

A General that commands an army, and sees that for want of money he cannot keep them long together, is unwise if he venture not his fortune before his army fall asunder: for by delaying he certainly loses, whereas hazarding, he might overcome. Another thing there is yet much to be accounted of, which is, that a man ought (even in his losing) to seek to gain glory by being overcome by force, than by any other inconvenience.

The principal heads of war for field service, to which every General should direct his attention, are, the art of marching, encamping, embattling, and to know the ways how to procure good intelligence, and providentially and skilfully to get provisions fit for his army and his designs, and not to ground his foundations upon vain imagination.

In matters of war, the motions ought to be quick, where the least moment of time often carries the whole business.

It is necessary in war oftentimes to change counsels according to the variety of the accidents.

In execution of designs of war, good judgment ought to ground them, and diligent expedition put them into action. For the least fault or stay that a man commits may give leisure and occasion for the enemy to provide, that all the plots and counsels, how good soever, shall serve to no purpose.

Observations on the Necessity of Intrenching with Directions for Practising the Same: By General Monk.

The intrenchment incloses your army as a walled city, from whence you may march privately with such designs, leaving your baggage in safety. The intrenchment hinders the enemy from constraining you to fight, unless when you please.
The intrenchment causes you to take strong cities in the face of a more powerful army than your own. Briefly, the intrenchment is less subject to infection than the villages are. In effect, an army intrenched and huddled, will rather subsist three months in health in a camp (in the summer time), than a fortnight in the best villages. One of the most necessary parts of war is, to know well how to encamp properly, and to intrench with promptitude and effect.

When you come to besiege a town before which you intend to intrench your army, you ought to place your line of circumvallation so near the town, that you may be able to quarter your army with safety, and out of the reach of your enemy's shot; allowing an hundred and fifty feet for an alarm place, between the breast-work and the front of the quarters. The trench without your breast-work must be twelve feet in breadth, six feet in depth, and three feet in breadth at the bottom. And the earth that is dug out of the trench, will raise you a breast-work, or rampart, of twelve feet in breadth at the bottom, six feet in height, and three feet in breadth at the top, with one foot bank. Upon your line of circumvallation, at the distance of every two hundred paces, you ought to have a spur upon your line to flank it. And before the quarters of every regiment upon your line of circumvallation, you must leave a small avenue, that one single man, and no more, may be able to pass through at a time. You must likewise have in your line of circumvallation, four great avenues for carriages to pass through; and upon the great avenues you must set up turnpikes, and without every turnpike there must be an half-moon. Here note—your army must be divided into as many quarters as you intend to have approaches against the town. And you must raise some batteries close within the line of circumvallation, there where you think the most advantageous places may be for the same; for the annoying of any enemy that may come to trouble you.
OBSERVATIONS, &c. 345

If you suppose your enemy may come so strong as to attempt the forcing of your quarters, then ought the trench of your line of circumvallation to be in breadth sixteen feet, in depth eight, and in breadth at bottom six feet. You ought likewise to have some outworks, both half-moons and horn-works, within musket-shot of your rampart, or breast-work. And if there be any hills somewhat above musket-shot off from your line of circumvallation, that may be advantageous to your enemy for the placing of his ordnance to play upon your breast-work, or any part of your quarters, you ought upon such an hill to raise a sconce. This you ought to observe and do, if you intend to fortify your leaguer strongly, in order to prevent a powerful army from forcing your quarters.

If you have a desire upon any occasion to intrench your army in the field, for their better safety, your best way then will be, to draw your army into as little a compass of ground as you may with convenience. For the less compass your rampart is, the easier it will be to defend: And if you have any occasion to send out any part or parts of your army, upon any design, it will follow that those which are left, having less compass of ground to defend, will the better be able to do it.

The sod or turf with which you are to face your intrenchment, if you are likely to have any winter siege, or any long siege, must be four or five inches long, or thereabouts, and in length fourteen or fifteen inches diminished inwards.

OBSERVATIONS RELATIVE TO THE MEANS OF TAKING TOWNS AND STRONG PLACES: BY THE SAME.

There are seven ways to win castles, strong holds, and fortified towns. First, by treachery. Secondly, by surprise, as by petaring the ports, and by assaults. Thirdly, by approaches, batteries, and assaults. Fourthly, by approaches, mining,

Philip of Macedon esteemed no place strong where his ass loaden with gold might enter. For the attempting or taking of towns by surprise, is very commendable in officers, and sometimes very successful, where the officers have good intelligence, and carry their business secretly, carefully, orderly, and valiantly; and there is no adventure for surprising a place more safe in war, than that which is farthest from suspicion of being undertaken: and by such sudden designs, one may gain that in one hour, the which may not be gotten any other way under a year's service of an army or two.

In the besieging of all towns, a commander must be careful that his enemy be not able to cut off his provisions, or his retreat; and that he besiege no town, but such as he is able to cut off all relief from the besieged. A commander-in-chief ought likewise to be careful how he ventures upon winter sieges, and long services, or long sieges at any time, unless the consequence of the place require it, and that he be sure to take it in the end. Long sieges ruin armies, empty the purse, and most commonly it falls out so, that it hinders armies from better employments; and after a long siege, though things fall out according to a commander's desire, he will have little reason to brag of his victory, when he views his expenses, his time, and his army. The malice of a great army is broken, and the force of it spent in a great siege. Hannibal, entering into Italy with his army to make war upon the Romans, would not be drawn to be-

* Buonaparte, in his late rapid achievements in Italy, seems to have strictly adhered to this sound maxim. The desperate situation of Massena could not divert him from accomplishing those objects, which he executed with as much rapidity and good fortune, as he had conceived and digested them with judgment and ability. Perhaps the Austrians might have done better, had they wasted less time before Genoa.
siege any of their towns; all his war was to weaken them in force and reputation, knowing that when he was absolute master of the field, it would not be long ere the walled cities would open their gates, without expecting any engineer or battery.

If a General besiege any town in which his intelligence, or his opinion has deceived him so much, that he has little hope of taking it, the speedy leaving off any such enterprise, excuses, in some degree, the rashness which might be imputed to the beginning: and a chief commander is not so much blamed for making trial of an ill-digested project, as he is for the obstinate continuing in the same: and if he refuses to be led by reason in such a case, as being the best means to guide him to convenient ends, he is commonly constrained by the commanding warrant of necessity to undergo the same thing upon harder conditions.

It is most difficult to accomplish the design of a siege, especially of any inland town, so long as you have a good army encamped near you, or likely to attend you speedily, the which army will be able to cut off your victuals, or constrain you to fight, unless you have two bodies of armies, so that with the one you may hold your enemy in play, and with the other you may actuate without impeachment or, unless you be master at sea of your enemy, and then you may besiege any sea-town of your enemy with one army, without any hazard at all, if you can have time to intrench yourself strongly, before your enemy be able to enforce you to fight.

The surest, safest, and speediest way of taking any town, if it require above three weeks siege, and if your enemy be able to bring any force to put relief into it, or to force you to fight, is, by intrenching yourself before them. And when you are intrenched before a town, where your enemy's hopes in making you to quit it do consist in nothing else but in cut ting off your victuals, you ought to have that foresight to bring with you, or cause to be brought into
your leaguer, out of the country, as much provision as you judge to be necessary to serve your turn for taking of the town. This way you may take a town with one army, though your enemy speedily attend you with another army.

If you make a siege with a small army, with an intent to starve a strong garrison, you must fortify your quarters one after another with the whole body of your army; and then, if you think fit, you may run lines from one quarter to another.

Every commander knows, that man's flesh is the best fortification that belongs to a town; and where a town is well manned, the best way of taking it is by starving; and when a town is weakly manned, the best way of taking it is by battery and assaults, or by approaches, mining, battery, and assaults.

One thing more I could advise a Commander-in-chief to be careful of, and that is, not to assault any town or place without great probability of obtaining that which he desires; and never to assault a town, but when he may assault it at divers places at once. There is nothing so suddenly ruins armies as assaults when they miscarry. For a General is certain to have his best men killed and spoiled upon such designs, and the rest so much discouraged, that it would prove very dangerous unto an army if they should suddenly after it fight.

Mines, where you may come to make them, are much better than batteries for the taking of towns or castles, because they always prove much more dangerous and terrible to an enemy; by means of their sudden and unexpected operations; and all sudden and unexpected actions are very successful in all martial affairs. A commander cannot take any place of strength with any certainty or safety, without the use both of batteries and mines.

A chief commander, when he marches to besiege a town, ought to carry with him as much money, ammunition, victuals, and all other necessaries, as is possible to be carried for the siege; and those neces-
saries that he cannot carry with him, he must be careful to procure with as much expedition as may be, for fear his enemy may find out some way that he does not think of, to prevent him of his necessaries, or at least to cause them to be brought to him with much danger and trouble.

The first thing you are to do when you are marching towards a town to besiege it, is to send, the most of your horse and dragooning, and with them likewise near as many musketeers as you send horse, about three or four days before the body of your army; that you may thereby keep all supplies from coming to the town: and command your horsemen to take up the musketeers now and then behind them upon the march, that they may be able to make the more expedition. You ought also to send along with the horse your quarter-master-general, and some two or three of your chief engineers, that they may, by the time your army comes up, have pricked out the line of circumvallation, and the quarters for your army; and to view how many approaches you may conveniently make towards the town: for so many approaches as you make, into so many quarters ought you to divide your army. After your engineers and quarter-master-general have pricked out the line of circumvallation, and the quarters, then, so soon as your army comes to the quarters, draw them into their quarters, and command them to hut with all the expedition they can. Likewise the line of circumvallation ought to be divided into as many parts as there are quarters, according to the strength of the regiments in each quarter. Then the quarter-masters of the regiments of foot ought to divide the ground equally amongst their regiments; and each quarter-master of a regiment is to measure out to each company of his regiment their ground: and the officers are presently to set the soldiers their work, for the raising of the line of circumvallation. And the soldiers ought to know, when occasion requires them to intrench themselves, that it forms as essen-
tial a part of their duty to intrench themselves, as to stand sentry, or to carry their arms.

As soon as the earth is out of the ditch for the raising of your rampart, then you may begin your approaches. And you must always be careful to break ground at the first as near the town as possibly you may with convenience. And that you may break ground the nearer, and your men be the more bold, set your pioneers and some others to work as you come to your quarters, for the making of great store of cannon-baskets, which may serve you in good stead for this use: at the beginning of every night set them up before those which are to break ground; and on each hand of those cannon-baskets, which you set up before the soldiers that are to break ground, you ought to set some cannon-baskets for the safeguard of the guards. Your approaches ought always to be well flanked with redoubts and batteries.

If a General come before a town where there is but a weak garrison, and many outworks to the town more than the garrison is well able to defend, it will be good then for a General to attempt taking of some of the outworks; and if he take any, he ought to begin his approaches from thence.

The best time to assault the outworks will be in the night.

Through all dry moats you are to approach the rampart of a town by galleries under ground, under the dry moat of the town. And through all wet moats you are to approach to the rampart of a town by galleries above ground. But in running your gallery under a dry moat, you must have a care that it be not discovered to the enemy by carrying the earth out of your gallery. The next thing you must have a care of is, that you do inform yourself rightly, before you begin your gallery, of what depth the moat is, that you may begin to make your gallery so far back, as to be sure to run your gallery under the bottom of your enemy's moat. For,
if your enemy once discover against what part of the wall you are running your gallery, it is ten to one but your enemy may prevent you, either by hindering you from advancing your gallery to the rampart, or by rubbing your mines.

When you have advanced your galleries to the rampart, let those that are appointed to assault the breaches and the ports, have soldiers appointed to throw hand-grenades, and to fall on with them: and give order to those that are appointed to assault the breaches, and scale the walls, that as soon as they are gotten within the wall, or rampart of the town, with a reasonable number of men, they march unto that port that is next them, and open it to let the foot and horse attend in that quarter. And for this purpose there ought to be some soldiers appointed to carry fit instruments for the breaking open the gates of a town.

When a gate is opened, let the officers have order presently to repair to the market-place with their soldiers, for clearing of the enemy from that place. And you ought to command the officers and soldiers that no man offer to pillage upon pain of death, until all the enemy within the town that carry arms be either killed or disarmed. Besides the word given to your soldiers, by which they are to distinguish one another, you should command them to wear something about them, that they may, among themselves, likewise be known from the enemy.

If your officers, when they assault a town, find the town to be cut off by the enemy, by raising any works within the rampart or wall of the town, then a chief commander should give orders to the officers appointed for the assault, that in case they find any such thing, they should do their best to plant themselves with their soldiers on the top of the rampart only; which must be done by help of the engineers work-basis, and pioneers, who must be appointed to be in readiness with saccots in their hands, when they shall be called upon to fortify any place
that the soldiers may possess themselves of, if occasion require. The like order must be observed in assaulting outworks, as is here set down in this last observation concerning the assaulting of a town.

You ought likewise to have in readiness, ovens, to heat cannon-bullets red-hot, upon all such batteries whereby you can conveniently come to shoot them into the town. Likewise your mortar-pieces must be so conveniently placed, that you may shoot mortar-grenadoes into the town, and wait a little to see the effect of your fire-bullets and grenadoes.

Here note, that you must not shoot any fire-bullets, nor mortar-grenadoes, into the town, until one half hour before you begin to assault; for if you do use the fire-bullets, and mortar-grenadoes before the aforesaid time, you will teach your enemy to find out a way to prevent you from doing any mischief with them at your assault; and, likewise, your enemy being used to them, the fear of the danger of them will by use be taken away, and they will strike no fear at all into your enemy upon your assault.

Having your mines ready to be sprung, your breaches large, low, and wide, men placed ready to march with petards to the ports, men likewise in readiness with good store of scaling-ladders, and your men drawn out and placed ready for the assault of the breaches, and your ordnance playing with fire-bullets, and your mortar-pieces with their grenadoes, then spring your mines and give a general assault.

One thing more I think fit to add to this discourse. There are two ways for blocking up an haven or a river. The first is, you make of iron a thing in form of a frisrutter; the beams through which the upright bars go must be twelve feet in length, and the upright bars that go through the beam must be of that length, that when one of these iron frisrutters is let down into an haven or river, the perpendicular bars of this iron instrument shall be of that depth as to reach, upon an high-water, within six feet of the top of the water. This is one of the best inven-
tions that I know for the blocking up an haven or river. There is no way that I know to remove these frisrutters out of an haven or river which is blocked up with them. And having so many of these frisrutters made in readiness beforehand, as will block up the port or harbour upon which you have a design, and having all other necessaries in readiness for the letting of those frisrutters down into the haven or river, you may block up the channel in four-and-twenty hours time.

There is another way of blocking up an haven or river, by throwing great stones into them, and leaving small passages for the water to pass through. By this invention the King of France won Rochel.

ON THE VARIOUS ATTACKS OF CAVALRY.

1. On the Attack en Echelon against Infantry.

If cavalry is to charge infantry in this order of battle, it forms first a line, and when the first squadron has advanced 150 paces straight forwards, the second puts itself in motion; and at the same distance the third follows the second, and so on to the last. If ten squadrons thus attack infantry, one of the following squadrons, if not the first, will break in upon the enemy; for the first squadrons will attack the enemy's fire, and the following, of course sustain but little loss. If one of the squadrons has broke the enemy's line, the following squadrons profit by this opening, and form their attack on the same point.

This is probably the order of formation in which the cavalry performed such great exploits near Strigau and Kesseldorf.

I much doubt whether it was originally intended to attack en echelon; it rather appears to me that this order of battle arose unintentionally from accidental circumstances.

In the battle of Strigau and Hohenfriedburg, the
Prussian regiment of Bayreuth dragoons was posted behind the infantry, and passed through it by squadrons to attack the Austrian foot. The latter being posted at a considerable distance, and the first squadrons moving on at a brisk trot, the last endeavouring to form a line with them, gained probably an oblique position, and thus approached the enemy en echelon.

If the French horse, in the battle of Minden, had attacked en echelon, they would in all probability have routed the English and Hanoverian infantry, notwithstanding the gallantry displayed by these troops. Their right flanks were not covered, and their intervals were open; since the artillery, owing to the rapidity of the advance, found itself between the first and second line. The French cavalry actually penetrated through this opening, but were not supported; the rear rank of the infantry faced to the right about and dispersed them.

In the attack en echelon, the squadron which breaks the enemy's line is naturally supported by the following squadrons, which move more sideways. The attack not being directed against some fixed point of the enemy's line, the cavalry can thus proceed by any opening or uncovered flank which offers; and as the squadrons move on singly, they are more able to preserve order than if they advanced in line, where every squadron is liable to suffer from the confusion of the adjoining one.

That the loss of the second, third, fourth, and following squadrons, must be less considerable here than when formed in line, seems to be unquestionable: for when the cavalry attacks en echelon, the battalion opposed to the first squadron must naturally fire on it; supposing even that this be not done but at the distance of fifty paces, yet it can do but little execution against the second and third squadrons, which are 200 and 350 paces distant. They will hardly be exposed to a second fire, for the infantry will have no time to fire again. There
remains no doubt but that in such cases such Platoons only should fire as are attacked. But where is the infantry which ever acted with so much countenance on the day of battle.

2. In most Cases Cavalry can only rout Infantry by taking Advantage of their Faults.

It is a material advantage of the attack en echelon, that we are more able to profit by the enemy's faults; for if the infantry are attended by artillery, all cavalry will find it extremely difficult to break in upon them, unless the infantry opens here and there, which frequently happens. Near Hohenfriedburg, Zorndorf, Kesseldorf, and Rosbach, the Prussian horse had not to charge with infantry, which was yet in perfect order, and had sustained no loss: they availed themselves of a lucky moment, and thus defeated the enemy's foot, already partly broken and in disorder. A commander of cavalry, who does not know how to make his dispositions in such a manner as to profit by the faults of the enemy's foot, will never be able to do great things if the infantry behave well.

The Prussian dragoons of Plettenburg, and the hussars of Moering, were not able to break into a Swedish detachment of 200 foot, posted in a plain, though they sabred several men in the ranks, and dragged off one officer by his tail. These 200-foot killed and wounded 128 men.

This is the most convincing proof that infantry can withstand cavalry, if it keeps countenance. The cavalry here did every thing which could be expected.

3. On the Conduct to be observed by Horse on attacking a Square, if a Part of them can dismount.

Where the cavalry is superior in number to the infantry, and the latter has not to expect any succours, the best measure to be adopted seems to be,
that a part of them dismount to attack a flank or face of the square formed by the infantry. These dismounted horsemen take a position parallel to the flank or face, at the distance of 250 paces, with intervals of twelve paces between the different platoons, composed of twenty files, and begin to advance under alternate firing, while the rest on horseback observe the square at the distance of 300 paces. As the dismounted horsemen may be superior in number to one of the flanks or faces of the square; as they moreover concentrate their fire against the square, without being from their intervals much exposed to that of the infantry, the foot who form the flank or face attacked, will probably fall into confusion, and afford the mounted cavalry, which advances through the intervals of the dismounted horsemen, a favourable opportunity of making a successful attack.

4. Attack of a Square by Cavalry.

In such cases, it seems best that the first attacking cavalry be followed by other cavalry, at the distance of about one hundred and fifty paces. If the first breaks into the square, it may be supported by the second; and if the first should be beaten off, the second may form the attack before the infantry has probably had time to load again. This attack is not liable to the same objections which are generally alleged against the attack in column. If the square consists of three or four battalions, each flank or face must be attacked by two squadrons, and each angle by one squadron. The two squadrons of the second attack must have intervals of thirty paces, that if the first attack should not succeed, the squadrons may be able to retreat, without obstructing the second.

This order of attack is far more powerful than that en echiquier; for if the front or flank is equal in extent to two squadrons, there are in the former case four squadrons opposed to it, while in the lat-

There are only two. In the former the force is of course twice as great as in the latter, and so is the support.

5. On the Attack of Cavalry, if furnished with Cannon.

I have here supposed cases of the cavalry not being furnished with cannon. But if they should be provided with artillery, this should advance with large intervals against one flank or face, while the cavalry surrounds the square at the distance of six hundred paces. If the cannon advanced against an angle, they would be exposed to the cannon fire of three angles of the square, while in the former case they are only opposed to that of two. By the large intervals between the cannon, the effect of the enemy's fire is considerably lessened. It would be a gross fault to post the cavalry behind the cannon, as in this case the cannon fire of the square would do double execution, both against our artillery and horse.

At the distance of six hundred paces our cannon begin to fire grape-shot, and if they should suffer much, they advance under alternate firing, until they have approached the infantry within four or three hundred and fifty paces.

6. In which Case Cavalry ought to charge Cavalry two and three deep.

When I hear it asserted that two ranks are as powerful as three, I would ask whether one rank can withstand three? that this is impossible, is obvious to the meanest capacity. Four ranks will unquestionably rout three, if every one does his duty. Supposing the strength of individuals to be equal, the superiority of numbers must decide; and the fronts are equal, their depth decides. The Turkish horse prove dangerous to ours, from their being formed ten or twelve deep. General Warnery has
clearly established this fact, in his excellent observations on the Turks.

A squadron formed two deep, whose intervals are covered by the third rank, is certainly stronger than when formed three deep, with its intervals uncovered; provided that the third rank be not more than ten paces distant from the intervals, or that before they approach the enemy, it moves to the right and left behind the intervals, and according to circumstances falls through them upon the enemy. If the third rank were more backwards, or kept behind the second rank, the force of its impulse would be lost at the first moment of the charge, on the vehemence of which mostly depends the issue of the shock.

If, when formed three deep, your front is smaller than that of the enemy, you must alter your formation to two. But if, in peculiar cases, you cannot derive any advantage from this more extensive front, form squadron three deep.

7. Cavalry should never be charged en Echiquier and en Echelon.

The attack in line with covered intervals seems preferable to any other known order of battle. At the attack en echiquier, so earnestly recommended by many military men, the front rank contains but half the number of fighting men it would consist of at the attack in line, with covered intervals; it is therefore more easy thrown back upon the second, and thus the whole is routed. An attack en echiquier is preferable against infantry only. That in this order of battle the Austrian cavalry defeated the Prussian near Prague was merely to be ascribed to the more extensive front, and more advantageous position of the former.

The attack en echelon may, in some particular cases, be preferable to that in line, if the echelons break in upon the enemy, and you are sufficiently
strong to take the remainder in flank; yet as in this case you are liable, in a variety of ways, to be taken in flank in your turn by the enemy's second line, I do not approve of General Warnery's opinion, who recommends this order of battle in too general and unqualified terms.

If the first echelon is routed, the next are taken in flank the very moment they come up to the charge.

OBSERVATIONS ON AN OFFENSIVE WAR, AND ON THE MEANS OF CONQUERING COUNTRIES: BY GENERAL MONK.

An offensive war will keep you from civil war at home, make you feared by your enemies, and cause you to be beloved by your friends. The occupations and hurry moreover, which are the necessary consequences of offensive war, will keep your gentry and commons from laziness, and from all sorts of luxury. But you must not forget, at the same time, that no foreign war can eventually be beneficial, except to such kingdoms and states as are able to go through with the designs they undertake. Because, as a foreign war is necessary for rich and potent kingdoms and states; so it is hurtful to petty kingdoms and states; for being too weak to gain by it, they will in the end lose their design, their honours, and monies, and impoverish themselves, and increase their enemies. It is not for kings and states to undertake a troublesome and dangerous war upon an humour, or any other slender motion: but diligently weighing the circumstances thereof, and measuring the peril and hazard with the good consequences, to inform their judgments of the action, and so try whether the benefit would answer their labour. They ought to be well informed of the greatness and riches of the country, the quality and strength of the people, their use of war, and the op-
portunity of their havens. And he that makes an offensive war must so proceed therewith that he be sure to keep what he gets, and to enrich, not impoverish his own country. For he that increases his dominions, and yet grows not in strength, must needs go to ruin. Now those grow not strong who grow poor in the wars, although they prove victorious: because their conquests cost them more than they get by them. This error many run into not knowing how to limit their hopes; and so grounded in their vast conceits, without weighing their strength, they are utterly undone. For conquests, not having power answerable to their greatness, invite new conquerors to the ruin of the old.

That prince who puts himself upon an offensive war ought to be master of his enemy in shipping, purse, and men; or at least in shipping and purse: or else he must see some garboils in the state which he assails; and he ought to be called thither by a party, otherwise it would be a rash enterprise.

If you make any attempt upon any foreign country, the first thing you ought to do, is to take some sea-town that has a convenient harbour, and that lies nearest the greatest city in that country in which you make your war. This town you ought to secure and harbour very well with good works: and take care that it be very well victualled before you advance further into the country with your army. So this town will serve to keep your provisions for your magazines: and being well provided of victual will serve upon occasion to make good your retreat. For having once got possession of a sea-town, and having well fortified and victualled the same, you have one foot on land, and the other on sea.

Having fortified a place for your magazine and your retreat, advance with your army towards the chief city in the country. By which means you will soon force your enemy to battle: and if you win the battle and follow your victory close, you may gain the chief city of the country, either by com-
OFFENSIVE WAR.

position or assault, if it be not fortified; or before your enemy be able to relieve it, you may be able to starve it. But in case you do not prevail to be master of the chief city, either by composition or assault, then ought you strongly to intrench 2000 foot and 500 horse in a quarter; and thus continue to fortify one quarter after another with your army, until you have intrenched so many several quarters as you think may be sufficient to keep the city from provisions. And then, if you think fit, you may run lines from one quarter to another. And having strongly intrenched that part of your army that is quartered about the city, draw the rest of your army into a body, and intrench them in some place near the town, where you think it most convenient to meet with any enemy that may come to the relief of it. You ought likewise to use the best means you can for intelligence, and continually to send out parties of horse several ways, that when any enemy approaches near you, you may be in readiness to fight him. If you come to be master of the chief city of a kingdom or country, I account that kingdom or country more than half won.

The surest way to keep that country you conquer in obedience to you will be to oppress them as little as may be (especially at first) either in their purses, consciences, or laws. He that obtains a kingdom with the rupture of his faith, has gained the glory of a conquest, but lost the honour of a conqueror. But you ought to disarm them, and take pledges of them for their obedience; which hostages or pledges must be kept in your own country. You ought also to employ in your garrison all the gunsmiths and all the saltpetre-men that you find in the country you have conquered, to take into your hands all the powder and brimstone you find; and destroy all the powder-mills that are out of your garrisons.

When it shall happen that you are to conquer a country that affords covert and protection to an enemy who is more malicious than valourous, and through
OBSERVATIONS ON

the fastness of the place refuses to show himself; unless it be upon advantages, the war, doubtless, is likely to prove tedious, and the victory less honourable. In such cases there is no other way than to harass and waste the country, that the enemy may be famished out of his holds, and brought to submission by scarcity and necessity; which is a means so powerful, as well to supplant the greatest strengths as to overcome all subterfuges and delays, that of itself it subdues all opposition, and needs no other help for achieving of victory.

It is much better for a prince to invade an enemy in his own country than to attend him at home in his own kingdom, provided he has competent forces to give him hopes of doing good upon his enemy: for the seat of war is always miserable.

OBSERVATIONS UPON A DEFENSIVE WAR: BY GENERAL MONK.

The best way to prevent any attempts of any foreign enemy is to be able and ready to resist his designs; and the best way to do that is to have a good rich public treasure beforehand, and your people not only well trained up in martial discipline, but perfectly satisfied with the government they fight for.

When you foresee that an enemy is resolved to set upon your country to conquer it, and if your enemy be so much master of you at sea that you fear the shutting up of your havens by his shipping, then ought you to provide your magazines extraordinarily well with ammunition, arms, and salt, and great store of brimstone, saltpetre, and saltpetre-men, and to have powder-mills in your chief towns.

In the beginning of a defensive war, if you meet with a powerful enemy, and foresee that the war is likely to last long, then it will be wisdom in you to entertain some foreign nation: but you must be careful to entertain none of those nations who serve
in your enemy's army, unless they be such as are of a contrary religion to your enemy, to the end that you may spare your own nation as much as may be: provided always you have money to pay them punctually, otherwise they may prove dangerous to you. And I would wish you by no means to keep them longer than you have money to pay them; for if you do, you will find they will prove more your enemies than your friends. Likewise you must be careful to entertain no more strangers than you are well able to master; and that you garrison them not in any of your sea-towns or forts, or where your chief magazines are. And in whatever towns you do garrison your strangers in the winter, take care that where you place one company of strangers in a garrison, you ought to place two of your own nation. It is a very dangerous thing to entertain a foreign friend to gain your own country: but there is no danger in entertaining a foreign friend to help to keep your own country, so long as you have money to pay them.

You may, with good fortresses and a good army, so tie up your enemy in hindering him from victuals, and by intrenching always so near him, that you may now and then fall upon some of his quarters, and so hinder him from making any siege of importance. And when a conqueror does not advance forward, he must recoil. But here you must note, that such places as you fortify are to be well fortified, well manned, and well provided with all necessaries, and that you do not fortify any place which will require many men for the defence of it in a siege.

If you be assailed by a power altogether disproportionate to your forces, and are in this case forced to leave some part of your country to the enemy, then you ought to burn all the victuals which you cannot contain within your fortresses, and also all the towns and villages which you cannot guard: for it is better to preserve yourself in a ruined country than to keep it for your enemy. It is a maxim,
that no public good can be without some prejudice to some particular men: so a prince cannot disentangle himself from a perilous enterprise if he will please every man; and the greatest and most usual faults which we commit in matters of state and war, proceed from suffering ourselves to be carried away with this complacency, whereof we repent when there is no remedy left.

Kingdoms or states, though they have received many overthrows, should never cowardly yield themselves up to be slaves to their enemies or tyrants, but endeavour to look fortune again in the face, and to be ready to overcome or lose more gloriously, or get honourable terms of agreement. Because, by yielding they can hope for nothing but the saving of the lives of their inhabitants, and it will be in their enemy’s power to deprive them of those whenever they think proper; and peace is assuredly more grievous to men in subjection than war can be to those persons who enjoy their liberties. For it is an incontestable truth, that all men whose last hope and resource rest in their arms, nourish that hope, and grow adventurous in it. A just cause is the best defence against a strong enemy.

OF ARTILLERY AND FIRE-ARMS IN GENERAL.*

The invention of fire-arms closely followed the discovery of powder. The epoch of the invention of artillery is fixed about the year 1336. But the ignorance of this age in the mechanic arts considerably retarded its progress; and the cannon which was first prodused was so very difficult to work, and at the same time so very defective, that neither its importance nor effect could be sufficiently ascertained. These thundering machines have since been brought nearly to perfection, and have made so great a revolution in tactics, as entirely to

* From the Manuel de l’Artilleur.
change the art of war; they have, in short, rendered conquests less frequent and less rapid, and the successes of war more easy to be reduced to operations of calculation. Artillery may now be considered as constituting one of the great powers of armies and of empires.

The artillery of the present day is very much multiplied in our armies, and Germany first set the example. The artillery has brought along with it the present tactics of our troops, in opposition to the systems, the writings and declamations of the partisans of the Greek and Roman establishments, which appear like an attempt to bring Europe back to the infancy of missile weapons. In fact, these authors make every effort to persuade us, that the experience and incredible activity of their columns, or of their cohorts, as well as the peculiar facility of manoeuvring, must render our fire-arms useless: but notwithstanding the confidence which these writers have in their exclusive systems, as the matter is very far from evident, we must conclude, in spite of the vaunted superiority of the column, and that cannon compels us to advance only in line, a mode to which we have approximated successively, since formerly our troops were eight, afterwards six, afterwards four, and lastly three deep; which progressive approximations are, without difficulty, to be attributed to experience, by which the multiplication of forces has proved how dangerous this close order may become to an army which can never disengage itself from it.

Cannon, of which artillery is principally composed, is, as well as every species of fire-arms, a species of obturated cone, because, to resist the effort of the powder, it is necessary that it should be reinforced towards the breech, * which is the part

* The weight of the breech, that is to say, the quantity of metal from the extremity of the pommel to the axis of the trunnion exceeds the quantity of metal from this same axis to the muzzle about one-sixteenth, so that this part, which is called the range, never gives way when the cannon is fired.
where the charge is placed. The interior cavity of
this cone is a cylinder, which is called the bore, in
which is placed a certain quantity of powder, to
drive out a ball of iron, or other slaughtering and
destroying bodies.

In cannon there have been various divisions of ca-
liber, but in France, by the ordinance of 1732, they
have been fixed for land-artillery at five; namely,
24, 16, 12, 8, and 4. But an officer of the artillery,
distinguished both for talents and merit, observes,
that to simplify the above, they may be reduced to
two calibers, and proposes to have only pieces of
24, 12, and 4, without rendering the necessary pro-
visions for a field-train more considerable; this op-
pinion is supported by very plausible reasoning.

Cannon is not the only dreadful engine comprised
in the artillery: the mortar is in many respects more
dangerous, since the bomb which it throws out falls
in places where it is not always possible to put in a
ball; plunges into vaults, and sometimes produces,
when falling upon the ground, the effect of a little
fournéau de mine, besides the powder which it in-
closes bursts it into splinters, which may be so many
slaughtering blows.

The mortar was not discovered until about two
hundred years after the cannon. It was first used
at the siege of Rhodes, in 1522; and we learn from
manuscript communications, that the Turks used
bombs at this siege; the Marshal de la Force made
use of it at the siege of La Mothe, in 1534. It ap-
ppears that it was not used in France before this time,
although it was known there above fifty years before
this period.* It is false then that the bomb was the
invention of a person in Venlo, in 1588, since it is
proved to have been used upwards of sixty years
before.

* Upon recourse to history, it appears that the invention of
the bomb in France goes back to the year 1542, when it was
used at the siege of Bourdeaux.
A long time after the mortar appeared the howitzer; this is very modern, it was only known during the last war against the Dutch. The howitzer has its trunnions (tournillons) placed nearly in the same manner as the cannon, that is to say, a little below its center of gravity, whereas in the mortar, they are placed at the extremity of the breach. It is in form longer than the mortar; and as it is very much reinforced with metal, and its ball is hollow, it does not much strain its carriage.

The first howitzer cast in France was at Donay, in 1749. They are loaded with a bomb without handles, called howitzers, which is fired out; and at the same time does the office of a bomb: pointed at random; it carries to a great distance.

The war of 1757, in countries difficult of access and filled with bad roads, has proved how much the weight of our artillery impeded the progress of our marches, by its difficulty in coming up, and frequently occasioned the loss of an opportunity which might have been employed in advantageous manœuvres. This inconvenience of weight is not the only one which has impressed upon us the necessity of having light artillery in our armies; as the artillery employs often at least double the time of the infantry in its journeys, there must necessarily result destruction to the horses, as well as maladies in the men who escort it.

The King of Prussia, and also Austria, having multiplied prodigiously their field-artillery, it became necessary to be upon a par with these powers, inasmuch as their system is now become general throughout Europe, because its advantages at this time are well known.

It has been determined then that our pieces shall be lightened and shortened in such a manner that they shall possess a superiority in their mode of conveyance over all others; and although other powers have been very well satisfied with the length of their cannon, which have sixteen calibers of ball, from
the back of the plat-band of the breech to the muzzle, yet we have given eighteen to ours. It is in this proportion that the pieces of 13 and of 8 have been lightened.

The length of the piece 4, called à la Suèdoise, has been preserved, because it is found to have eighteen calibers; this piece has only been diminished in thickness about one hundred pounds of metal.

After the experiments made with short light pieces, contrasted with old pieces of the same caliber, it is sufficiently ascertained that the ranges differ but very little between the angles of six and three degrees. But under these angles ammunition is almost always uselessly expended, because that both long and short pieces are defective in exactness when fired at too great distances, which is, in that case, making a noise to no purpose; also in the use of cannon for battle the most elevated angle does not amount to two degrees and a half.

Light pieces at convenient distances have produced all the exactness desirable in the aim to encourage a hope of the greatest effect and the utmost utility in the field.

These pieces have the advantage of being capable, occasionally, to be moved easily, by men's strength, of following the movements of the troops, and of being transported everywhere in places where infantry can pass. They have furnished a striking example of this at Rhode Island and York Town; they have cleared both rocks and mountains, passed rivers, &c. without suspending their march, or slackening that of the army to which they were attached.

No person is ignorant of the length of the passage, and the short space of time occupied in making it. This proof is more than sufficient to oppose to the declarations of those who pretend that cannon marching in line with the troops impede their movements.

Fire-arms, in field-artillery, are generally made of
copper, in which, pursuant to the ordinance, there is a mixture of tin, after the proportion of eleven pounds to the hundred weight of copper. This compound forms a new metal, known by the name of bronze or brass.

The thickness of pieces of cannon, agreeable to the ordinance, is proportionate to the diameter of the balls, but by a comparison made in experiments of the duration of field pieces compared with battering cannon, it has been proved that the resistance diminishes in proportion as the caliber increases.

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**Observations upon the Firing of Cannon.**

The utility of fire-arms depends upon the science of firing, and the good use which is made of it. Fire-arms are usually pointed by a visual ray, directed along the upper surface of the piece, and terminating at its extremity; this line is denominated the line of sight or aim.

A body darted or projected, either in a line horizontal or oblique; and its gravity, the direction of which is always vertical, are causes which compel the body to describe in its projection a curve which would be a parabola, if the air were not a resisting medium: but the elasticity of the air, independent of its tenacity, opposes to the projectile a resistance in a triple proportion of the square of its velocity, when this velocity is sufficiently great to form a vacuum behind this body; and this happens where the projectile traverses more than 1200 feet in the space of a second.

But from the exercises of polygons, we know by experience that balls, with the ordinary charges used, traverse about 180 toises, or 1080 feet in a second, and with stronger charges they traverse a distance considerably larger. Besides it appears from other experiments, that the initial velocity is at least 1600 in a second; from whence we may conclude,
that during a part of the first second, a vacuum will be formed behind the balls.

The true line of firing is in a curve, different from that of a parabola; and by the construction of our fire-arms, the projectile issuing from the piece will rise above the line of sight, cutting it at a greater distance than that where it is cut by the prolongation of the axis, and will describe a portion of its course above it, and forced by the action of its gravity, which acts continually, will cut it again and pass above to meet with it no more. Thus, 1st, to reach a point which would be between the range of the piece and its first intersections, it is necessary to look above it; 2d, if the point is found at one of the two intersections, it is necessary to aim thither to reach it; there are these two points which may be called point blank, since the point blank is the point where the point must be reached in looking directly thither, or when the point which is meant to be reached, is the point aimed at; 3d, if the point is between the two intersections, it is necessary to point above them. From whence it may be concluded in general, that the piece must be elevated or depressed, according to the distances; which depends upon the angle that the prolongations of the axis makes with the line of sight, and upon how much the projectile is depressed by its gravity in flying to the point of its destination. The knowledge of the first point is to be attained by calculation; and the velocity of the projectile, which may be procured by experience, will give a sufficient knowledge of the second.

For example, in our pieces of 24, the angle of the line of sight, with the prolongation of the axis, is about 55 minutes, and we suppose the ball to run through a space of 180 toises in the first second: it will then be found upon calculation, that if it had followed the prolongation of the axis, it would have arrived at 16 feet above the line of sight; but as its gravity has caused it at the same time to fall 15 feet, it will be found exactly at one foot nine inches above.
FIRING OF CANNON.

If then in our batteries at the school, the mark was at 180 toises from the mouth of our pieces of 24, it is necessary to point about one foot nine inches below the center of the mark, under the supposition that the ball runs through 180 toises in the first second. The theory of firing, then, depends particularly upon a knowledge of the velocity of projectiles, and this must depend upon experiments judiciously conducted.

Upon this knowledge depends the pointing at point blank; but it is necessary to observe that the same piece, with the same charge, has not an invariably point blank; it varies according to the difference in the quality of powder, the alteration of the air in the piece, the flash, the difference of weight, form, and caliber of the shot, the manner of loading and recoiling, and the different resistance of the air. These same causes also produce a difference in the velocity of the projectiles fired with the same charges.

To facilitate the pointing of field-pieces, the anse mobile, or shifting handle, has been made use of, which fits behind the breech of these pieces, and of which we shall presently speak more at large.

The pointing by the eye is not always sufficient; and when it is necessary to direct the piece as to the height, in taking the angle made by its axis with the horizon, the quadrant, or any similar instrument may be used, which is generally done for mortars, howitzers, and sometimes for cannon.

There are three distinct modes for firing cannon, namely, at random, at point blank, and à ricochet. But people are not very well agreed as to the signification of the two former: custom, which can alone prescribe the sense in which words are to be accepted, is not here consistent with itself; and many persons consider that to fire à tout volée, and at point blank, is to strike the mark with the first stroke.

The meaning of ricochet, is at the same time more precise and better understood, because every one
knows that, properly speaking, this is but a reflection repeated, and which follows in the different circumstances where it takes place in the general laws of mechanics: from whence it is plain that the causes which produce or modify the ricochet of balls, &c. are 1st, the mass, the bulk, the form, and elasticity of these projectiles; 2dly, the direction and height of their fall; 3dly, the resistance and elasticity of the plane struck; 4thly, the rotatory motion which they acquire from touching the same plane.

The ricochet then is not confined either to any particular charge, or to any particular angle: both of these vary according to the distance, and the difference of levels, of the objects upon which they are desired to act, and particularly that upon which it is desired to form the first rebound: for the art of this species of firing consists in impressing upon the projectile the necessary force to attain a certain end; that from thence it may make different bounds, and penetrate into places which it could not strike directly. But the smaller the angle of elevation, the more the projectile will preserve its force, and have its effect, because in soft soils it will not sink so deep, and will more easily overcome the tenacity of any ground, and because in general, in all cases, it will have less obstacles to overcome to fulfil its object. Besides a number of experiments upon ricochet-firing would appear to decide, that the angle of projection upon ramparts little elevated above the level of the battery can scarcely be more than ten degrees. If the works are of an extraordinary height the cannon must be placed in such a manner as to be fired under that angle, or at most under an angle of from 13 to 14 degrees, otherwise the service of the cannon, added to what has been before observed, is inconvenient, and the carriages are considerably strained.

When under the same angle, the charge of the powder can be augmented, the ricochet is more stiff and has more force.

Pieces fired under the angles of 6, 7, 8, 9, and 10
Definition of Batteries.

A battery is a certain number of cannon, ranged by the side of each other, which direct their fire upon a particular object.

There are different sorts of batteries. Those of the field are generally composed of light pieces, which are called pièces de bataille, or field-pieces, which are directed upon the troops, and are moved in different directions according to circumstances; which depends upon the position of the enemy.

Batteries de siège (besieging batteries) are placed behind a bank of earth, which is called the épaulement, which conceals from the enemy the working of the pieces. These banks are perforated for the firing of the said pieces. We distinguish in the besieging batteries, batteries à ricochet, and batteries in breach, or de plein fouet, a full range.

A battery à ricochet should enfilade a piece of fortification, so that the shot falling upon a given place,
should afterwards proceed by leaps and bounds, as a stone which is thrown skimming the water, and traversing the whole length of the rampart struck, overturns and throws down every thing that opposes its passage.

The object of a battery in breach is to destroy the rampart, and by this method to procure an entry for the troops into the place, or part of the fortification in which the breach has been made.

Batteries de place, have the parapet as a natural épaulement: and as cannon de place are mounted upon carriages, which raise them above the said parapets, and are called affûts de place; it is not necessary to pierce them as was done formerly.

Side batteries, batteries de côté, have an épaulement similar to that of besieging batteries; but as the cannon of these batteries are placed upon carriages destined for that object, called side-carriages, they are fired above the épaulement.

Batteries of howitzers, mortars, &c. composed of these different species, are equally placed behind an épaulement.

Batteries à barbettes, have an épaulement elevated only about three feet, or thereabouts, above the level of the ground upon which they are placed.

Position of besieging Batteries.

The first batteries are intended only to facilitate the approaches, by depriving the enemy of the use of his defences: the object of the other batteries is to open the exterior batteries and the body of the place.

The best position of the first batteries is generally upon the prolongation of the faces of all the considerable works which have direct views of the attacks.

To take the exterior prolongation of a face of a work, it is necessary to catch the precise point where turning towards the other face, the former is no longer perceptible: a vertical stake is then fixed in the position of the person making the observation, and a
second upon the same line, or in the same vertical plane, and the right leading through the middle of these two stakes is the prolongation sought. This operation, although apparently simple, demands much use and exercise. Formerly the sentry-boxes placed upon the flanking angles, and the shoulders of the bastions, facilitated considerably the prolongation of the faces; but they are now suppressed. To supply them, it is necessary to stand in a line with the trees upon the ramparts, to catch the moment when one of the faces is shone upon by the sun, and the other is in the shade. In short, the officer ought not to neglect any means to be certain of his lengths; and when these are taken, he makes these certain by planting several stakes in the same line. Upon the perpendicular of these prolongations the batteries are erected. By this position they have 1st, the advantage of battering à ricochet, the prolonged face, and at point blank, that which is opposed to them; 2d, the batteries thus placed are found to have a direct embrasure, and two others nearly direct, which completely sweep the whole length of the rampart, which they should batter à ricochet, whereas, by placing the epaulement parallel to the face, all the embrasures are oblique; 3d, in the perpendicular position, the wheels bearing against the epaulement, will always strike the work under an advantageous angle; and in the parallel position, the heurtois declining considerably, if they should happen to be out of order, great risk is run by firing during the dark, and by which one is frequently constrained either totally to miss the object, when the flanking angle is acute, or to proceed unnecessarily to destroy an unfortunate town when it is obtuse.

The point of where the battery à ricochet should commence, is so fixed, that the first piece of cannon should carry its shot through the whole length of its range, at four or five feet from the parapet, and that those which follow should strike this same parapet,
under an angle extremely acute.* In short, Vauban seems to prescribe that properly to determine the ricochet, "it ought always to raise the paniers by which the besieged soldiers are covered; and when it knocks some of them down, it is so much the better, for it is the perfection of firing, to touch the surface of the parapet as much as possible; that the ricochet ought not to be bound upon the parapet of the prolonged faces, but upon the rampart which is behind: for this reason, four toises or thereabouts ought to be left from the front of the pieces which are struck to the place at which they are pointed." He further observes, that when it is practicable to lower the ricochet, and augment the charge, to stiffen it more considerably, it then becomes more destructive.

If the battery is destined for point blank, whether to destroy the defences or to make a breach, they must be placed as parallel as possible to the extent which is to be allowed, and comprised between two perpendiculars in that extent: but as it very seldom happens that it can be placed exactly in this manner, it becomes necessary to approximate to it as much as possible.

Batteries in breach must be so placed, as that the foot of the wall to be destroyed may be well discovered, otherwise there is great risk that a practical breach will not be effected. From whence it follows, that if the covered-way is very broad, as at Bergen-op-Zoom, or the fossé very deep, it ought to be established not upon the top of the covered-way, but in its interior, and upon the borders of the counterscarp.

On the Construction of Batteries in General.

Before we proceed to the construction of batteries, it will be necessary to speak of certain materials employed in their construction.

* That which has been mentioned relative to the position of the batteries, is extracted generally from a memoir of the late Du Pujet.
The saucissons which are used in batteries to cover the interior of the epaulement, are long faggots, which ought to be cylindrical, composed of slips of wood stripped of the leaves, and from 4 to 5 lines in diameter, carefully trimmed and bound at every interval of eight or ten inches, by good bands, the knots of which are all on the same side. The length of a saucisson is from 18 to 20 feet, and from 10 to 12 inches in diameter.

When the saucissons are only 10 inches in diameter, eight of them are generally placed one upon another, to form the height of the epaulement, and seven if the saucissons are one foot in diameter. But notwithstanding this rule, it must be so contrived, that the lining shall be at least six feet in height above the level of the platform, which in that case determines the number of saucissons to be placed upon each other. From 20 to 24 bands per saucisson of 20 feet length, must be counted, which it is necessary to allow, so that there may remain from 18 to 19 when they are staked through.

To construct the saucissons, props are placed in a line with each other, of which a certain number form a working place. Each prop is made by planting obliquely in the ground, at nearly one foot distance from each other, two large piquets crossing each other, which are retained in that position by a piece of cord or match. These props are placed at a distance from each other, according to the kind of wood employed for the saucissons. When the wood is long, they may be spaced off at four feet, or four feet and a half from each other; in that case, few of the abovementioned props will be sufficient for the working place of a saucisson. When the wood is short, they are brought nearer together, and it will require five or six. But they must not be unnecessarily multiplied, for too great a number will render the saucisson too much bunched. It is
OF GABIONS.

upon props of the same height, in the place where the piquets are tied together, that we proceed to the construction of saucissons, leaving together the slips of wood very equally one over the other, paying attention that the outward covering should be of the longest slips, and the smallest should be placed in the middle, cutting those which are to form the heads of the saucissons, so that in the use which is made of them for lining the batteries, they may fit more easily.

When the bands are to be put round, the saucisson is wrapped round with a cordage which crosses it, and at the extremity of the ends of which is a loop, at which a lever is made to enter; the force applied on each side strongly compresses the slips of wood to the diameter required. They are fastened by a small chain, equal to three strong lengths of the diameter which is to be given, of which one binds the saucisson at the place where the band ought to be bound. In default of a chain, a cordage is used, to which the said dimensions are given. The cordage is preferable to the match, which stretches.

Of Gabions.

A gabion is a species of basket without a bottom: its height is commonly from two feet and a half to eighteen, twenty, or twenty-four inches in diameter. The gabion should be quite round.

To proceed in the construction of gabions, a small stake, to which is passed a piece of packthread, of a length equal to half the diameter intended to be given, is fixed in the ground; with the other end of the packthread where a sharp stake of wood is fixed, a circle is described, upon which is planted 7, 8, 9, or 10 piquets, spaced off at equal distances, which are stuck from 5 to 7 inches in the ground: These stakes are three feet long, and from 12 to 18 lines in diameter.

A gabion, to be well made, ought to be well bound equally from the ground, well closed, and bound
from top to bottom with the smaller slips of saucissons, or fascines, partly lopped, the point of the pickets fastened in the ground, is the height of the gabion where it is finished; this point of the pickets serves to hold the fascines, which are placed on the gabions in saps.

The assiette, or base of the gabion, is the upper part when it is finished: It is consequently necessary that the stake should be cut very level, that the gabion may not totter when it is used.

**Of Fascines.**

Fascines are also long faggots or bundles of wood, like saucissons, and are used in constructing them. But as it is natural for the soldier to load himself as little as possible, the fascines carried by the infantry are generally but 5 to 6 feet long, and 7 to 8 inches in diameter; and, as they are only bound by two or three bands, without being much closed, it is computed that in war, 10, 12, and even as many as 15 of these fascines are employed for the completion of a saucisson, in the proportions hereby detached. The cavalry furnishing fascines from 7 to 9 feet long, will require a less quantity than others. Besides it is difficult in either case to fix exactly what is necessary, and it is much better to err by too many than by too few.

The fascines which are used in saps, are saucissons of a smaller proportion than those of the batteries, so that a single man can easily carry them.

**Draft and Construction of the Epaulement in a Battery.**

The requisite number of workmen for the line cannot here be precisely fixed; this depends entirely upon the nature of the ground upon which the battery is to be erected. In a good soil, and in an ordinary position, we may compute the number of workmen at twenty for each piece, exclusive of two cannoniers and six attendants. These last are not
generally called for, but when it becomes necessary that the pieces should be brought to the battery, that is to say, on the second night; but, when more dispatch is required, it is necessary that these should attend sooner.

The workmen of the line serve only about twelve hours, and the gunners and attendants remain there twenty-four. But neither must be permitted to depart until after the arrival of those by whom they are to be relieved, taking into the account the over time in which they shall have so remained before being relieved.

The nature of the soil must also determine with respect to the utensils of the pioneers; in a stony soil more axes and pick-axes will be necessary; for a clayey soil more spades or shovels; and more round shovels in a sandy soil.

The labourers of the line, by whom a battery is to be constructed, bring each of them two of these implements, and also a portable gabion, because they may have occasion for it, and besides gabions are useful in all cases. On their part, the cannoniers and their attendants bring to the field two or three masses of wood, and two hedge bills each; and for a battery consisting of six pieces, for example, two large saws, some rules of different lengths, two carpenter's levels and a square, to take readily the right angles. Some use is also made in the schools of a species of false square, proper to determine the slope of the lining of the battery.

To delineate the epaulement, it is necessary upon a certain length, which depends upon the quantity of pieces to be put in the battery, * to raise a perpendicular at each extremity, to each of which must be allowed 20 feet; which determine the breadth of the coffer to the base, by drawing through the two points a parallel to the first. A space from three to

* Twenty feet in length is the utmost allowed for each piece, and fifteen the least, when the place is too narrow.
four feet is afterwards left, which is called the berme, at the bottom of which is traced the fossé, parallel to the coffer of the battery; its breadth depends upon the ground in which it is placed. These differences should be traced with fascines, to the end that the workmen should be forced to follow them. If it is necessary to defend one of the flanks by a return, or by traverses, they are traced at the same time, and in the same dimensions as the rest.

The workmen are afterwards placed one file at three feet from each other, and at seven or eight from the berme to dig the ditch, and to throw the earth upon the berme a second file upon the berme, the distance between the two about six feet, which throws back the earth into the coffer; the rest of the workmen, part in the coffer and part in the inside of the battery, to flatten the earth, and beat it from bed to bed, that between, for want of fascines, to the height of two feet only. Attention must be paid to raise the epaulement by preference to the side of the pieces which are called the under part of the battery: the earth, as we shall presently see, is sustained by saucissons, staked one upon another; and this surface of saucissons is called the lining of the battery, which extends also over the two sides of the coffer.

An officer proposes, also, to place the workmen of the fossé of the battery, at a distance of three feet from each other, for the excavation of the said fossé; to divide again upon the berme, at one toise distance each, to receive the earth of the fossé, and to throw it into the coffer, and the same quantity upon the epaulement, furnished with a round shovel, and (à dame) to equalize, and (damer) smooth the earth. He further proposes, that five cannoniers should be employed to place the saucissons, and slake the lining of the battery, three for the covering of the sides, and as as many for each embrasure; which makes generally four times as many workmen of the line, exclusive of the cannoniers, as there are toises in length in the battery required to be con-
structed. After this principle, he gives the annexe table, which points out every thing necessary to construct a battery of cannon in 24 hours, supposing saucissons from 18 to 20 feet long, and from 11 to 12 inches diameter, and that eight of them are placed in height, that the lining (revêtement) may have about six feet in elevation.

In the table here given, and in which no alteration has been made, but that of adding a column for the bands (harces), the shovels and pick-axes may be augmented one-third, the masses and dames one-fourth, and one stake and one band may be put on each saucisson, to replace that which may be broken.
### Table of Every Thing Necessary for the Construction of a Battery

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<thead>
<tr>
<th>Description</th>
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<tr>
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</tr>
<tr>
<td>Number of Hands on the Screws</td>
<td>4</td>
</tr>
<tr>
<td>Number of Screws and Planks</td>
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<tr>
<td>Number of Planks</td>
<td>30</td>
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In common soils, according to experience, a man without fatiguing himself too much, may draw from the fosse of intrenchment, in eight hours, and lay down about 50 cubic feet of earth.* This, supposed the first night, may furnish earth sufficient to form the third of the epaulement, and put it in a state for picketing by day-break. For this purpose, the necessary materials have been collected together, particularly saucissons, of which there are generally sixteen to each piece, without reckoning seven or eight to cover each side of the coffers, always supposing the saucissons to be more than one foot in diameter, and having about from 18 to 19 feet in length, being stuck together: four men may carry one of them.

If the battery is in front of the parallel, a communication with it is made, by a cut of 10 or 12 inches broad, and a proof parapet. This trench must be made at the same time with the battery, but by other workmen than those employed upon the battery. When the battery is placed in the trench, it must rejoin the parallel, cut by a good communication, behind the recoil of the piece. Besides, Du Puget, in his memoirs, observes, that a battery must not be established in the trench, unless there be an absolute necessity for it, for though it should be in

* The customary calculation is, that one man can wheel in a barrow, in a day, two cube toises of earth at the distance of a relais, or ten toises in ascendancy; and if there are forty toises, or four relais, four men can only carry the same quantity of two cube toises of earth, only to the distance of forty toises. The custom is founded upon what has been observed, that 150 barrows contain two cube toises of earth, and that one man, in a day, can transport them 410 toises distance upon a rising ground; which makes him pass over, going and returning, 10,000 toises, at about 4 leagues per day; and, if the ground is level, the same person may transport the two cube toises to the distance of 15 toises, which in that case is the length of the relais, which makes him go over 10 leagues per day.—M. Moirs of the Officers of Engineers upon perpendicular Fortification.
a situation for firing, its movements in the trench may be confined, and it may itself be often confined. According to him, therefore, this must be an advantage very important to be determined.

To lay down the first saucisson, an even trench must be marked along the whole length of the battery, if the ground will permit.

The first saucisson is sunk in this trench, at half its thickness, and it is retained by five or six good stakes, at an equal space from each other. The stakes are from two feet and an half to five feet long, and from half an inch to three inches diameter at the head; but these larger ones are not for staking the saucissons; if there are no others, they must be split. The stakes are driven up to the head in the saucissons; six, and even seven, are necessary for each saucisson, according to the subjoined table.

The first saucissons being placed, a second is put upon this, and so on successively up to the top, which is the height of the lining to the plane where the first saucisson of the embrasures is placed: it may be four feet at least above the ground of the trench, and in slope one third of its height.

In proportion as the saucissons are laid down, care must be taken to beat well down the earth of the coffers against it; that the ends of the saucissons may remain in the same place as has been observed, stuck one in another; that the joints should be exactly cut, and the knots of the bands concealed within. Attention must also be had to preserve well the slope, by pushing the saucisson into the interior of the bank (coffer) four inches more than that which bears it, or verifying the slope with a false square, which has before been mentioned, and which has been constructed in consequence of this slope. In a word, the stakes which enter the saucissons from below ought not to be seen.

The saucisson of the upper part being staked, the embrasures are spaced off, and their inner opening is marked. Supposing 20 feet for each piece, 10

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of these are taken, beginning with one of the sides of the battery, to mark the middle of the first; 20 for that of the second; and so on to the middle of the last, which will be also 10 feet from the other extremity of the coffer. For a piece of 24, the opening is sufficiently large at 20 inches.

These dimensions, fixed by very upright stakes, the merlon continues to be covered in such a manner as that the inner opening of the embrasures neither augments nor diminishes in its ascent. To this end the saccisson ought to be sawed very straight and perpendicular to their axes. The sides of the battery are at the same time covered.

This work ought to be completed at the commencement of the second night; during this time the line will have been taken of the center of each embrasure, to the principal part of the object which it is intended to batter, which may be completely acquired by two or three good stakes, which it is impossible to pluck up. In batteries a ricochet, this point is nearly the center of the length prolonged.

The embrasures are spaces left, or openings made in an epaulement, that the body of the cannon may lodge there, and that the cannoniers may be covered by the height of the parapet which remains above the soil of the embrasure. This height of the parapet, or mass of earth between each embrasure, is called the merlon. The embrasures, &c. are made open in the front of the epaulement, in order that the cannon may be directed to a larger horizontal extent, and that the firing of the piece may injure them as little as possible.

The cheeks of the embrasure are the sides on the right and left of the embrasure, pierced in the thickness of the epaulement, proceeding from the outer to the inner opening of the said embrasure.

The tracing of the Embrasures.

The right line drawn from the principal point of the object to be battered, in the center of the inner open-
TRACING OF THE EMBRASURES.

ing, or in the vertical plane, which would pass through these two points, and perpendicular through the center of the heurtoir, may be termed the directing line of the embrasure.

The cheeks should be equally separate to the right and left of this vertical plane, so that the piece being directed to the principal point of the object to be battered, may not beat down either the one or the other. The heurtoir ought also to be perpendicular to the same plane, to be well assured that the piece has been properly directed, by having the wheels placed upon the heurtoir, which it is highly necessary to give it in a siege, particularly to fire in the night, or when it is dark. It is then upon the directing line that depends the delineations of the embrasures, and even the establishment of the platforms.

To trace an embrasure, it is necessary to be in a line with the principal point of the object to be battered, by two vertical stakes, the one placed in the midst of the inner opening of the embrasure, the other upon the outer side of the battery. The right line passing through these two points will be the directing line.

As by a long experience that nine feet on the outer opening is sufficient, when the battery is 18 feet in thickness, vertical stakes are next planted at four feet and a half from the directing line, measured upon a perpendicular raised to the stake, which terminates it externally, and from these new stakes right lines are drawn to the corresponding extremities of the inner opening of the embrasure, which determines the direction of the cheeks.

If the directing line were less than 18 feet in thickness, it is plain that the distance of these stakes, at this elevation, cannot be more than from four to four feet and a half. It is inferred also, that if the point of the directing line were taken in, the interior of the coffrir, instead of being taken on the outside e. g. taking the point at 12 feet of the in-
ternal opening, the perpendicular will be 3 feet; for 18 is to 12, as 4½ is to 3.

The embrasures ought not to be opened during the day, except when the battery is concealed from the eyes of the enemy, or when it is not within the scope of their fire; and even at night, if the battery is exposed to the fire of musketry. As soon as the line of the cheeks is traced, the work ought to be masked with sufficient solidity to defend the soldier against musketry, and at the same time so lightly, that the mask may be easily removed in the moment of firing. This operation does not cause delay, provided due care be taken to prepare the gabions and fascines.

The mask being finished, the embrasure is opened by throwing back the earth upon the merlons; the necessary slope is then given to it, particularly to the line of the cheek, which is again proved, and the saucissons are sloped so as to lay entirely and vertically one upon the other at the entry, coinciding as nearly as possible with the boundary of the inner opening, from whence they separate by degrees, until the extremity of each is no longer supported upon that which is immediately below, and takes what is termed the form of a fan.

The slope of the embrasure should be according to the object of the battery. If it be intended to fire from low to high, the slope should be from the front backward; if the shot are required to fall, it should be from behind forward, and this more or less, according as the object intended to be struck is more or less low; which shews in what circumstances the gabions and the bindings of the parts of the coffers where the embrasure ought to be, should not be too much confined.

The saucissons which line the cheeks of the embrasures are commonly only 18 feet in length at most. In schools we sometimes cover, through economy, the cheeks with turf, or with clay, but this mode would be useless in war, and it would be imprudent to adopt it when it can be avoided.
OF PLATFORMS.

The establishment of platforms usually preceded the opening of the embrasures, and often their projections. As soon as the directing line is found, this may be executed by day as well as by night, and even more advantageously.

We begin by levelling the soil through the whole length of the battery, or through every piece, when too strong a slope occasions recoils. These recoils may be so high, as to make it necessary to sustain them with saucissons or gabions. This is an augmentation of labour, for which the siege of Maestricht has furnished opportunities.

Afterwards two pieces of wood, called props or supporters, are generally laid down. That in the middle should be the following directing line prolonged, and at 3 feet 8 inches below the inner cavity of the embrasures, which fixes the height of the grenouillere; it reaches to the end of the lining, by raising itself on the other, in slope of 4 inches in 12 feet. The other supporters are placed on the right and left of this, having their upper surface exactly in the same place with its own, so that the platform does not incline more on one side than the other. Their distance from the epaulements depends on the length of the heurtoir, and upon the recoil upon the length of the last madrier. The interval, between each supporter should be filled with earth, well beaten down. The supporters are generally from 5 to 6 inches square, and 14 feet long.

After the position of the supporters, that of the heurtoir is adjusted, which should be 8 feet long, by 8 to 10 inches square.

This heurtoir, as we have observed, should be perpendicular to the vertical plane of the directing line; so that when the embrasure is upright, it may touch the revetement through all its length; when, on the contrary, the embrasure slants, it touches the revetement only at one end, and separates from it at
the side where the directing line inclines. This is the most common method of determining this difference: the heurtoir, in all its length is fixed, observing that its center answers exactly to that of the inner opening of the embrasure; afterwards the distance of its extremity, which ought to touch the revetment is taken with a cord to a stake, planted vertically in the prolongation of the directing line, nearly about the end of the space destined for the recoil; the cord is afterwards of a length equal to that distance, and having the first part between the fixed extremity of the heurtoir and the stake, the other is carried until its extremity meets that of the heurtoir, which ought to diverge from the parapet or epi palate; afterwards the heurtoir is sunk in that situation by strong stakes, or by other means, according to the nature of the ground. It must be observed, that the extremity of the heurtoir nearest the saucisson ought to be sufficiently removed from them, that the wheel which leans against the heurtoir, should not rub or injure the lining of the battery.

Although the method which has just been explained for the position of the heurtoir, is not precisely exact, since the vertical plane of direction does not pass at equal distance in the mode of equal obliques, and that in consequence the heurtoir is not strictly perpendicular; nevertheless, the embrasures which slant most occasion so slight an error, that it may be altered without any scruple in practice; and the facility of operation, in all cases, makes it preferable to mere geometrical methods, which would frequently be of difficult application.

The heurtoir being supported by earth and strong stakes, the madriers are then laid; the first against the heurtoir, the second against the first, and so of the others. Their number is generally 12 or 10, being 10 or 11 feet long, 1 foot broad, and 2 inches thick, or thereabouts. These madriers are kept
form by three strong pickets, which do not extend beyond the plane of the platform.

The intervals, also, which separate each platform, should have been so disposed, that the water, in case of rain, may run behind the recul, and not remain in the battery.

Platforms for the Frames of Heavy Ordnance.

The platforms of batteries for heavy ordnance were formerly constructed, and may now be constructed, if it is desired, as other platforms for the carriages or frames of besieging pieces: but to fire more advantageously from the frames of heavy ordnance, and to husband more the maudriers, it has been resolved to construct them as follows: A lisoir has been added to the frame of the affuts de place, the center of which, pierced with a hole for the cheville ouvrier, is distant 21 inches from the fore part of the heurtoir, so that the platform for such a frame is constructed as follows:

1. Of three props, 14 feet long by 5 inches square.

2. Of a contre lisoir, 4 feet 11 inches long, and 8 inches thick. In the midst of this, is placed the end of the cheville ouvrier, or working peg, and its extremities are cut at five inches in length, and as many in depth, to receive the ends of the two props of 14 feet.

3. Of three small props to cover the three first. One of these is arched, and at 6 feet long, 5 inches square, and 6 inches in breadth at the center, decreasing to 4 inches at the extremities. Of the two others, one at 6½ feet, and the other at 6 feet 8 inches long, and two 5 inches square.

In the construction of this platform, the line of fire is considered as perpendicular to the length of the épaulement; thus the contre lisoir is placed parallel to the revetement its center upon the line of fire, and at 21 inches from the foot of the lining, at a distance
sufficient that the frame may circulate, as well as the platform will permit.

The contre lisoir inclines towards the épaulement in such a manner, that the two props of 14 feet, which are slanting from behind to the front, fall perpendicular upon the notches.

As it is advantageous to give to these platforms three inches in the toise to the slope, instead of two, the stay of the contre lisoir, towards the épaulement, should be from 4 lines to 4½ lines lower than the other opposite to it, and the upper plane of the contre lisoir ought to be 5 feet 3 inches below the upper boundary of the revetement. Four props are so placed, that two have their extremities lodged in the notches of the contre lisoir, so as not to pass beyond them; the third, placed in a parallel direction in the midst of them, confines upon the contre lisoir: the upper face slightly touching that of the contre lisoir.

If the props to which the same slope is given have not been put in the ground, they are covered with earth well flattened, and the two little props parallel to the contre lisoir are afterwards placed across them.

1. The arched prop should have its center turned towards the contre lisoir, and its most salient point distant from the contre lisoir about 7 or 8 inches. This little prop, destined to support the earth of the platform, may be strengthened by two strong stakes, placed at its extremities on the side of the épaulement.

2. The prop of 6 feet 6 inches long, should be placed under the contre lisoir in the center of the frame, so that for the caliber of 24 and 16, there may be two feet six inches interval between this prop and the opposite one: for calibers of 8 and 12 this interval should be two feet.

3. The prop of eight feet long must be placed one inch before from the back part of the frame: thus, for calibers of 24 and 16, of which the frames are
13 feet 3 inches in their total length, the interval between this and the preceding prop should be from 5 feet 8 inches. This interval should be from 4 feet 9 inches for the frame of the carriages of 12 and 8, whose total length is 11 feet 9 inches.

The two intervals, which leave between them the three, ought to be solidly surrounded by earth, well beaten down, even to the surface, upon which the friction of the frame will be chiefly made.

The rest of the platform in front of the little arched prop ought to be five inches lower, that is to say, in the same plane as the upper part of the contre lisoir, so that the lisoir meet with no obstacles when the frame is made to traverse.

The ground-plot of the platform must also be sufficiently wide to give room for the cannoniers to execute their duty.

The end of a madrier may be placed opposite and behind the intervening toise of the after-part of the frame, so that the point of the levier employed in giving a direction to the piece may find a solid support.

By the construction above detailed, the direction of an angle of the field, about 10 degrees and a half, will be obtained: thus, the piece may overrun in the total, an angle of 21 degrees, at 300 toises distance from the first parallel; so that it may batter a front of about 112 toises in length. At 130 toises this front will be 48 toises; and at 50 toises, it will be still 18 toises.

For pieces of 24, 16, and 12, which on account of the length of their range, are always placed in battery, it would be possible to make them cover a front more extended, upon attacks: the frame should, in that case, be 2 or 3 feet more distant from the revetement, and the prop of 6 feet 6 inches, and that of 6 feet 8 inches, should be each of them two feet more in length.
ON THE MANŒUVRING OF CANNON.

Manœuvres of a Piece of Four.

EIGHT men from the corps of artillery are requisite for working a piece of four; these consist of two cannoniers for pointing; two first attendants (servants), two second attendants, and two third attendants, of whom the person on the right is most frequently called the eighth.

The implements consist of four long bricoles, two ammunition bags un sac à etoupilles, a dégorgéoir, un etui des lances, a porté lance, a pail; two leviers de pointage, a sponge without a rammer, and furnished with a manivelle and a doigt fourré.

Position and Duty of the eight Men at the Battery.

The cannonier, who is pointer on the right, should be placed at the extremity of the levier de pointage, in a line with the attendants; upon the command—

In action, he steps briskly between the two leviers, observing that every man is at his post; he then directs the piece and retires, giving the command—

Load. When marching forward, he holds the levier upright with his two hands, and in falling back, with his right hand only.

The first attendant on the right within the wheels, the left foot at the height of the nave of the wheel, carries a bricole, hanging to the right, which he hooks on, marching forward to the head of the carriage, carrying his sponge horizontally in his right hand. In retreating he hangs it with his right hand to the flotte à crochet, and carries in his left hand the sponge also horizontally. When in action he holds the sponge also horizontally in both his hands. Upon the command—Load, he advances, moving from the left foot, which he advances as far as the collet of the piece, and stands up straight, to be able to sponge and clean the piece, and draws back im-
mediately by a contrary movement to resume his first position.

The second attendant on the right, in action, is placed at the height of the pommel; he carries a bricole hanging to the right, which he hooks on, marching forward to the fût ou à crochet, and in falling back to the crosse or fork-lever. He carries besides a sac à lances, hanging to the left, and porte lance, which he holds in his right hand; he takes down and puts up the pail, afterwards he fires upon a signal given by the second attendant on the left. *

The third attendant of the right, or eighth, is to be posted at the avant-train charged with the chest of ammunition, as well as to supply the bags of the purveyors, and to bring out or lengthen, according to circumstances, the avant-train, holding at the same time the horse tight by the bridle.

The pointing cannonier on the left, fronting him on the right, and upon a line with the first and second attendants, when in action, must remain fixed. Upon the command—Load, he is to move briskly to the breech, to take the match in his left hand, and bring his right to the manivelle or handle, to raise or lower the piece, and to give the degrees. As soon as the piece is loaded, and he has seen the attendants at their posts, he retires, moving from the left. Whilst marching forwards, he holds in both his hands the levier, and in retreating with his left hand.

The first attendant on the left, who is posted in front of that on the right, supplies the piece. For this purpose he is to be supplied with an ammunition bag, hanging from right to left, and also a bricole hanging on the right, which he hangs on, marching forward to the head of the carriage, and in retreat—

* In the new instructions, the attendant, whilst in action, is ordered to turn to the left about: but it seems preferable that, as the other attendant, they should be parallel to the piece, to see what passes at the mouth of the cannon.
ing to the flotte à crochet. Upon the command—Load, he moves towards the muzzle, by movements contrary to the person on the right, places the charge in the piece with his left hand, and afterwards retires; drawing back his left foot to resume his first position. When his bag is empty he changes with the third attendant.

The second attendant on the left, upon a line with the first, carries about his waist a bag of tow, and holds a sponge in his right hand; he is also furnished with a bricole hanging to the right, which he hangs, on marching forward, to the flotte à crochet, and in falling back to the crosse or fork-lever, or butt-end. In action, when the cannonier on the left has retired, he sponges with the right hand, and places the etoupille on the left, observing to turn the brins from the side of the second attendant of the right, to whom he makes the signal to fire as soon as he has received his first position.

The third attendant on the left divides the distance of the fore-wheels of the piece upon the line of the attendants: he is purveyor to the piece, and is charged with an ammunition bag, hanging from right to left, which he exchanges with the first attendant when his bag is empty. The cannon marching forward, he is to place himself between the two cannoniers, and when falling back at the round, one hand against the handle and the other upon the neck, to assist the movement of the piece.

Service and Position of Men for a Piece of Eight.

Thirteen men are generally required for the service of an eight-pounder, of whom eight are from the corps of artillery, whose functions are the same as those appointed to the four-pounder; and five from the infantry, who are one third, two fourths, and two fifths.

The furniture and implements for the piece of eight are four long bricoles, carried by the first and fourth attendant of the right and left; four short
BRIOLES, carried by the thirds and fifths of each side; a porte lance, held by the second on the right; a pail, three ammunition bags, one of which is carried hanging on the left, by the third attendant on the left, and the two others by the fourth and fifth attendants on the left; a bag with tow, which the second attendant on the left carries, as well as a priming-iron and a sponge, with which the first on the right is furnished; an etui à lances de feu hanging to the left for the second to the right, and a linstock, which he holds in his right hand; a doigt fourrée for the cannoniers, pointing on the left; two leviers de pointage, and two leviers de support.

The men of the artillery corps, when in action, are placed as at the piece of four. The attendants of the infantry are placed upon two files, on the side of the fore-wheels; there are three of these for the right, which are the third, the fourth, and the fifth; and two upon the left, namely, the fourth and the fifth. The attendants, which leave between these and the piece a space of fifty paces, are ranged from right to left, and should leave a sufficient space between the two files, that the fore-wheels, according to circumstances, may easily pass.

The service of this piece is performed in the same method as that of the piece of four; only the first attendant of the left assists him on the right to sponge and receive the charge from the hands of the third attendant on the left, to place it in the piece with the left hand. The third attendant on the left having brought the charge, holds it behind the first attendant on the left, whose movements he follows, gives him his charge, and immediately resumes his first position. The fourth and fifth of the left change with him when his bag is empty, to go and fill it at the chest.

Service of the Piece of Twelve.

For the service of a piece of twelve, fifteen men are required, of whom eight are from the corps of
artillery, and seven from the infantry. These two additional men are two sixths; with respect to the rest, the functions, positions, &c. are the same as for the piece of eight.

To march forward with Pieces of Twelve.

Upon the command—Advance, the two first attendants hang on at the head of the carriage; the thirds double upon these backward; the fourths & frottes; the fifths double upon these backward. The second attendant on the right takes his porte lance in his left hand, hangs on the pail with his right hand, and moves to the leviers de support, as well as the second on the left. The two sixths move equally to the said leviers, and assist in sustaining the butt-ends or the fork-levers, and place themselves between the cheeks of the carriage and the two attendants. The two pointing cannoniers go to the leviers de pointage; to raise the fork-levers, holding the leviers de pointage in both hands. The whole front to the enemy.

At the command—To the Right about, all the attendants turn within: those which have the short bricoles unhook the long ones, and all the attendants hang on in retreat.

If, when marching, the command is given—Halt in action, those which have the long bricoles unhook the short ones, and every one resumes his post.

To Retreat with Pieces of Twelve.

Upon the command—Retreat, the second attendant on the right hangs on his pail with his right hand, afterwards makes a step backwards; the first and third attendants on the right afterwards move to the leviers de support. The second attendant on the left draws from him the leviers de support, and places himself there; the thirds hang on upon the frottes, and the first double upon them; the fourths hang on upon the fork-levers, and the fifths double upon them; the two pointing cannoniers place themselves at the leviers de pointage, and raise the fork-levers.
only at the command—Forward. The two sixths go to the muzzle of the piece, to assist in pushing it back; and all the cannoniers have in this case their backs turned to the mouth of the cannon.

At the command—To the Right about, all the attendants turn within, except those who are placed at the leviers de support, who turn within to disengage those who are at the flottes, and rest against the wheel, so as not to incommode the attendants, who should hang on forward; the fifths disengage the fourths. The first attendant on the right marching forward, carries his sponge upon his right shoulder, the rammer low, and in retreat, upon the left shoulder. He may equally carry in the two cases, horizontally, the fork-lever forward.

Movements of Pieces of Three and Four.

For marching in advance and in retreat the same rules are practised for the piece of eight as for that of twelve: the functions only of the two sixths are extinguished.

For pieces of four, at the command—Advance, the two first attendants hang on at the head of the carriage, the two second to the flottes, that of the right previously hangs up his pail. The two cannoniers, pointers, pass to the leviers de pointage, and afterwards raise the fork-levers, assisted by the third attendant on the left, who comes and places himself between these two. The whole front to the enemy.

When the command is given—To retreat, the third attendant on the left moves to the right of the vacant cylinder, to assist in pushing, laying his right hand against the head of the carriage, and his left upon the handles.

The two first attendants hang on upon the flottes, and the two seconds at the fork-levers, that of the right after having hung up his pail. The two pointing-cannoniers move to the leviers de pointage, and do not remove the fork-levers, until the com-
mand—*Advance.* In this position all have their backs turned to the mouth of the piece. When the word *advance* is given, the first attendant carries his sponge horizontally in his right hand, and in *falling back,* with his left hand.*

Of changing the Cannoniers.

Changing the cannoniers is effected at the same time by the right and by the left: upon the notice—*Cannoniers change,* they quit their implements; at the command—*March,* the first attendant on the right passes into the place of the eighth, the eighth into that of the second, and the second into that of the first: it is the same thing by the left. The cannoniers who are pointers change among each other.

The general change is made by the first attendant on the left, who passes into the station of the first of the right, and continuing thus round the piece, replacing by the left at the command—*Change, march.*

Service of the Piece, when Men are wanted.

The service may be continued, though only three men should remain. The order of extinction, and the mode of supplying them, is executed as follows:

*By the right,* the first attendant happening to drop is replaced by the second; the cannonier who points passes to the second; the cannonier on the left towards the cannonier of the right; the third on the left upon the pointer of the left; and the eighth into the place of the third.

*By the left,* the first attendant happening to drop is replaced by the second; the third passes to the cannonier, who is the pointer; and the eighth into the place of the third.

The first failing gives place to the third on the
right, or the eighth being vacant: this is filled by the third of the left. If two men are wanting, the second which remains vacant is that of the cannonier of the left, whose duty is performed by the second of the left. To manœuvre with five men, the third place which must be vacated is that of the second attendant on the right, which the cannonier, who is the pointer to the right, will supply himself. If four men only should remain, the last place which is wanting, is that of the third on the left; and the first on the right, besides his own, duly performs that of the third of the left and the third of the right. In fine, when the number of men is reduced to three of the second, the place on the left is vacant, and the functions of the eight are filled by the first of the right, the first of the left, and the cannonier who is the pointer of the right, and so distributed amongst them, that the first of the right never does more than his own duty. The cannonier of the right does that of three; namely, first his own, afterwards he performs that of the cannonier of the left, and the piece being loaded, he passes by the brackets to go and do that of the second on the right: the first of the left performs several functions, that is to say, his own, that of the second, and third of the left, and that of the eighth, and third of the right.

In replacing, the last places vacant are the first to be filled, and the men who arrive, take upon themselves the functions which are attached to them, as well for the service when complete, as when men are deficient. In the pieces of twelve and eight, the deficiencies are first filled up by men employed in the avant-train.*

* This order prescribed in the new instructions appears subject to inconveniences; at least when one cannot be assured of attendants from the infantry, those employed at the avant-train are sufficiently skilful in manœuvre: but as they may be generally equivalent, it would appear better to follow as formerly, with respect to these pieces, the same practice as is used in the pieces of four.
Manoeuvre of the Prolonge, or Hook-Rope.

The prolonge or hook-rope should be from 36 to 40 feet long, so as to have 24 fixed by loops. It is fixed to rings placed for this purpose behind the seat, and serves for retreating fires; it is 61 lines in diameter, at four brins.

To attach the prolonge or hook-rope to the seat, the end of it is passed through a ring on the left, and afterwards in that of the right, and fastened below by a knot called mand de prolonge: two loops are afterwards made to the said prolonge; the first as near as possible to the armens or forkels, and the second in the middle of the prolonge. When the prolonge is not in use, it is covered round with the armens, where it is retained by crochet et patte, placed upon their ends to prevent them from slipping.

To make the knot of the prolonge, the end of the prolonge being passed into a ring on the left of the avant-train, and afterwards into that of the right, it furnishes two lengths: from with each two loops (boucles) in such manner as that the end of the prolonge of the left part, for example, passes above, and that of the right crosses it equally below, put the boucle of the left through that of the right; pass in this last the end of the right part of the prolonge, crossing it thoroughly over, and drawing it right, and the knot will be made.

Make with the prolonge a boucle on each hand in a contrary direction, but leaving a certain distance between one boucle and the other. Put the left hand ring through that of the right; pass the end of the prolonge through the ring of the left hand, so that the end of the prolonge comes directly towards you: in this position unite strongly the parts of the knot, drawing in the left hand, and lengthening with the right the part of the rope necessary to form the loop, which part ought to touch that of the interval between the two rings: every thing in this situation
being drawn tight, the loop will be made, and nothing will slip.

When it is required to make use of the prolonge, the order is given—*Amenez la prolonge*, at which case the drivers, or men, where there are no horses, bring forward the *avant-train*, in marching sufficiently obliquely on the right, so that being arrived at the height of the fork-levers, and turning by the left, it is opposite the intervening toise of the *lunette*. Then the cannoniers of the right take the *bilot*, and pass it through the ring *d'embrayage*; during this time one of the attendants opens the prolonge, and the cannonier* on the right gives the command—*march*, that the prolonge may be stretched.

If the command is given to shorten the prolonge, the cannonier of the right passes the billet in the loop of the middle; and when it is required to double the prolonge, he places the billet in the loop which is under the *armens*.

After the command—*Fire in retreat* (*Feu de retraite*) which is only a notice, the command is given—*March*, the cannoniers and the attendants follow the movements of their piece, and march to the top of their respective posts, each carrying the implements and *gear* (*fourniture*) which will be necessary to be used; the second attendant on the right hangs on the pail before, to put himself in movement, and takes it down as soon as the command is given—*In action*. When a *halt* is made, every person puts himself in his place, and the charge is continued firmly as long as it is necessary.

At the command—*To your posts*, the prolonge is removed; the second attendant on the right takes—

* This is the third attendant of the left in pieces of 4, who opens and folds up the prolonge; and following the new instruction, is the fifth of the right to the caliber of 8, and the sixth to the caliber of 12. But as they are fixed during action to the guard of the caisson, it would be better that there should be for the two calibers the fifth attendant of the left, who should be charged with them.
down the pail, and all resume the position for firing. During this time the cannonier pointer on the right removes the billot, throws it a little behind, and gives the command—*March*, at which the *avant-train* resumes its post. If the manoeuvres are executed by horses, it is the third attendant on the right who wraps the prolonge round the *armons*, and the third on the left who does that office when the manoeuvre is made by men.

When the order is given—*Lengthen the prolonge*, the cannonier pointing on the right loosens the billot, fastens it to the ring of the embrassure, and the second cannonier draws the prolonge to stretch it in its whole length. The cannoniers take away the *leviers de pointage*, if it is required to pass a ditch.

**Manœuvre of the Avant-train, and changing the Encastrement.**

As soon as the order is given—*Bring up the avant-train*, those who are charged with the *avant-train*, bring it up in the same manner as has been described with respect to the prolonge. The two cannoniers who are pointers, the second attendants of the right, pass their levers to the second attendant on the left, beginning with his own, to place them in the *anneau quarée*, with the assistance of the first to the left; the second on the right hangs up the pail, the two pointing cannoniers place the *coffret* in its encastrement, remove the fork-levers; or butt-end, assisted by the attendants, and conduct with their arms the carriage towards the *avant-train*, which remains four paces behind * in pieces of 12 and 8, the first attendants go to the mouth of the piece to assist in conducting it to the *avant-train*, after which they return and resume their posts. The cannonier on the

* When the piece is charged upon the avant-train without changing the *encastrement*, the hook of the chain is passed above the ring of the *embrassure*; the contrary is practised when the *encastrement* is to be changed.
right embrelle the carriage; * the first attendant on the right places his sponge in its place.

Upon the command—Remove the avant-train, the person charged with the care of the avant-train raises the shaft sufficiently high to facilitate the extrication of the hooks from the anneau d’embrelle. The cannonier of the right debrelle the carriage, afterwards removes the fork-levers, assisted by the cannonier of the left, and by the second attendants. The avant-train drawn three paces back, and the fork-levers on the ground, the two cannoniers take up the coffret from its grove, and place it upon the avant-train, which carries back about twenty paces, the person charged with it, when he has received the command—march, given by the cannonier on the right. The avant-train goes to the left about, and ranges on a line to the right, the shaft turned towards the carriage.

During this movement, the second attendant of the left takes down the lexiers, passes two of them to the pointing cannoniers, who afterwards place them in the rings of the pointage, one to the second on the right, who puts it through the rings which support it, and places himself the fourth upon the preceding one. The second attendant on the right afterwards takes down the pail, which he lays upon the ground under the stock of the wheel, opens l’étrier à tourniquet, and takes his porte lance. The first attendant on the right takes his sponge, and every one takes his post necessary for manœuvre.

The command in battery is executed in the same way as to remove the avant-train.

Change d’Encastrement.

When it is desired to manœuvre, and that the piece of twelve or eight is in the encastrement de route,
Before removing the avant-train, the command is given—*Changez d'encastrement*, then the second attendant on the right hooks the spoke-chain (*chaîne d'enrayage*) in the upper spoke, and the wheels are pushed to stretch this chain, and thus to keep the carriage in its place.* The second cannonier, assisted by the first attendant on the left, takes down the four leviers to hand one of them to the first attendant on the right, and to the first cannonier, and each of them keeps one: during this time the second assistant removes the two bandes, which they lay upon the ground, and with which they calé (fasten) the fore-wheels if there was no chain *d'enrayage*, afterwards the first attendant of the right, and the second cannonier with the point of the leviers, raise the breech with the point of the levier, so that the first cannonier may slide the round part of his levier under the first reinforcement and a little obliquely, bringing it as nearly as possible to the flat-headed pegs, *chevilles de têtes plattes*, taking care that the stay of his levier is beyond the flasques (cheeks).

The first attendant on the left puts the large end of his levier in the mouth of the piece; the first attendant on the right places his across under this, and raises the body of the piece, assisted by the second and third attendants on the right and left. When the chief of the piece, that is to say the cannonier of the right sees that everyone is in his place and ready to act, he commands—*Ferme, steady!* that those who are at the cross-leviers, may put themselves in motion, and that in concert with them he may so turn his levier, as to lower the piece gently into its *encastrement* for firing. The second cannonier, during the manœuvre, keeps the piece straight.

* The cannonier on the right was formerly charged with hooking and unhooking the *chaîne d'enrayage* which was in his hand: thus the second attendant is obliged to pass before him and executes his duty, although obliged to fulfil that of taking away and removing the sus bande.
by pushing the large end of his levier in the right anse of the piece, if it be of a caliber of twelve, and the small end if of a caliber of eight. The piece being lodged, the two first attendants weigh upon it so as to raise the breach, or the cannonier of the left, and the first attendant of the right cross their levers, so that the first cannonier disengages his lever which was en rouleau: the cannonier of the right supports the semelle, whilst the one on the left prepares the vis de pointage, and the second attendants replace the sus bandes and pins (clavelles). The levers are afterwards placed, if it be necessary, in the positions convenient for manœuvring. The second attendant on the right disengages immediately when the piece is lodged.

To move the piece from the encastrément of firing, into that of the route, travelling, the order is given—Change the encastrément: the number of men and the distribution of leviers are the same as to conduct the piece from the encastrément of loading to that of firing, and the avant-train supposed to be arranged.

The sponge is laid on the ground, and the sus bandes are taken away. The first attendant on the left puts the large end of his lever into the bore of the cannon, and bears down upon it with the assistance of the first attendant on the right, so that the first cannonier may pass his lever in manner of a roller under the first reinforcement.

The cannonier of the left covers the vis de pointage, and knocks down the semelle; he afterwards passes the end of his levier on the right anse, or handle, to keep it straight. The first attendant on the right places his levier across, under that which is in the mouth of the cannon. The second and third attendants move to this levier, and at the command—Ferme, raise up and push forward the piece, whilst the first cannonier turns his lever, to make it slide out of the encastrements de route. Afterwards, the piece being lodged, the first attendant on the right
and the second cannonier, with the point of their levers, poise up the breach, to disengage the levier of the second cannonier. The second attendant on the right unhooks the chaine d'entrayage, spoke chains, afterwards the second attendants replace the sus bande. The second cannonier, and the first attendant on the left should also put back the four levers into the anneau quarré porte armement, and the first attendant on the right, with the assistance of the second, places his sponge in the place.

To defile in Parade with Pieces of Four.

The driver should be on horseback, and the third attendant on the right holding the bridle of the horse on the right.

The two first attendants are to be placed by the mouth, on this side of the wheels; the two second servants off the stock of the wheels of the carriage; the two pointing cannoniers by the wheels of the avant-train.

The first attendant carries his sponge in his right hand, and the six men should make a file on each side of the piece, making a line with each other.

The third attendant on the left places himself at the height of the spring-tree bar, upon the line of the pointing cannonier on the left; the levers and pail are in their places.

The serjeants should march between the two pieces, opposite the heads of the horses, and their sabres in their hands.

The officers are to march between the two pieces, abreast of the mouth, and salute with the sword.

If the pieces are drawn by men, the two first attendants hang on the flottes, the two seconds to the fork-lever, the two pointing cannoniers should place themselves abreast of the stock of the wheels of the carriage, the two third attendants at the end of the limon, the rest as above.
Principal Commands for working of Cannon, and under what Circumstances they are given.

When the regiment breaks by the right, notice being given, the pieces are commanded—En retraite, afterwards—forward, march (En avant march); regulating themselves relative to the orders of the battalions. The movement of the platoon being executed, the cannoniers take their positions upon the command being given—To the right about face, to the left dress. Generally, instead of saying—retreat, &c. when the platoon only wheels round, the command is—A bras en arriere, and the cannon will then be formed, placed upon a line with the body of troops which has marched forward, the words of command are simply—A gauche alignement, by the left dress.

The limbers follow the pieces, and in this case will be in the same line with them, as soon as the movement is finished.

If we break by the left to make its proper manœuvre, the cannon will follow a contrary order to the above; but instead of being placed upon the right of the platoon, the cannon of the second battalion will remain in the interval between one battalion and the other, that it may not come into the same line of direction. The avant-train will remain to the left of the pieces.

In general the cannon ought to follow the movements of the first platoons to which it is attached; upon that depends the command—En avant, or en retrait, following the march to retain the different changes of position. It stops upon the command—Halt, to the right about face, by the left dress, in falling back: if upon advance, the order is given only—Halt, dress.

When it is necessary to go to the right about with the pieces, the manœuvre is executed to the following words of command—To your posts, the avant-trains in front—they pass to the right of the pieces, and take their stations at twenty paces forward: the attend
ants close near the flasques (cheeks) to give them a passage. *To the sight about face*—the pointing cannoniers take their leviers de pointage, and turn the fork-lever by the right; whilst the piece turns the first attendant of the left, that the carriage may not fail to turn, places his two feet upon the jambat at the bottom of the wheel, and grasps with his two hands the spokes above the nave; the order is then given—to your posts.

In all cases, the *avant traines* follow the situation of their pieces, and ought always to be at twenty paces behind, as we have observed, where the ground will permit.

In firing, upon the notice—*Feu de regiment, feu de files*, &c. the word of command is given to the pieces—*Bras en avant*, that they may remove themselves to three or four paces, that is to say, in such a manner as that at least the fork-levers of the carriages may be upon a line with the front of the regiment. Afterwards, upon the word—*Halt, to the left in line*, so that they may be again in order of battle, but well observing to be on a line with the front of the regiment; thus it is conceived that it would be better if the cannoniers could range themselves in a line with the second rank, to avoid the interruption of the point of sight, by the negligence of one person who might fail to be perfectly on the line of direction.

In pointing cannon, the *etoupille*, match, is made use of: this is a little fusee introduced into the touch-hole of a cannon; and to set fire to this *etoupilles* or matches, *lances de feu*, or fire-lances are made use of, which are a species of fusees, whose covering is formed of several folds of paper, filled with a slow burning composition. Under the article of artifices of war, we shall give their composition as well as that of *etoupilles*, or matches. The *lance à feu*, is contained in a tube of tin, cloven in its side like a *port crayon*, with a *pirole*; the other end is fastened upon a tube, and the whole is called a *porte lance*.
**Table of Charges, Distances, and Degrees of Height, at which Field-artillery ought to be fired, loaded à Boulets Sabotes, according to Experiments made in the Year 1778 and 1779.**

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<td>450</td>
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<td>4½ lbs.</td>
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<td>6-Inch howitzers.</td>
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<td>3 degrees</td>
<td></td>
<td>12 ozs.</td>
</tr>
<tr>
<td></td>
<td>816</td>
<td>3 degrees</td>
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**Note.**—It must be observed that for rolling balls, *boulets ro-lans*, used in the schools, there must be at all distances two lines more of height than for *boulets sabotes.*
Approximation of Ranges in Boxes of Tin filled with Balls of hammered Iron.

<table>
<thead>
<tr>
<th>Calibers</th>
<th>Charge</th>
<th>Number of Balls</th>
<th>Distances</th>
<th>Lines of height</th>
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<td>41</td>
<td>400</td>
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<td>1½ lbs.</td>
<td>112</td>
<td>200</td>
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<td>112</td>
<td>250</td>
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<td>41</td>
<td>300</td>
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<td>6</td>
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<tr>
<td></td>
<td>63</td>
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<td>6</td>
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ON THE UTILITY AND FORMATION OF SAPS.

A SAP is the head point of a trench progressively carried forward, foot by foot, so as continually to be approaching its ultimate object, that is, the body of any particular place.

It is necessary to employ four miners in order to construct a sap. The head of the sap having been covered by gabions, fascines, sand-bags, iron-forks, hooks, &c. the principal miner enters the trench through an opening which has been previously made in the parapet of the line. But he takes care beforehand to arrange his gabion in the best manner he can, by means of his fork and hook, having the point of the stakes above him. He then digs one foot and a half in breadth, to the same proportion in depth, filling his gabion with the dirt which he scoops out, and constantly leaving a space of one foot and a half, at least, between the sap and the gabion, to serve as a bern or foot-path. The first miner has charge of the head of the sap; in proportion as he advances, the one who follows him increases the aperture by six inches, and takes as much in depth; the third and fourth man widen and excavate in the same manner; by which operation the sap gradually obtains three feet in depth, to as many in breadth at its opening, with only two feet diameter at the bottom, on account of the talus that is left on the sides of the ditch, from the excavation of which, sufficient earth has been gathered to form an epaulement towards the place to be defended, which is proof against cannon ball.

When the four first miners grow fatigued, they must be relieved by others. The men that are not immediately employed at the sap, construct the gabions, fascines, &c. that they may be ready for those who have charge of the head.

The fascines are spread upon the gabions, and are kept together by means of the stakes which belong to the said gabions. The inside revetement of the sap
is raised in proportion to their diameter. Faggots and sand-bags are placed between the gabions, to resist any quick discharge of musketry. Faggots which are intended to protect a sap are generally three feet long, upon eight inches diameter.

Saps are of various denominations, according to the uses to which they are applied. That, for instance, is called a Sape Volante, which is made with empty gabions, that are filled by the men who work in the trench. The Sape Tournante, or of a tambour-construction, has traverses round which you may pass. Double saps are made in such a manner, that one of the sides shall serve as a traverse to the other, so as to cover each other from the reverses and enfiladings which proceed from both sides. The double sap is made use of and practised along the ridge of the glacis, for the crown-work of the covert-way. The head of this sap is protected by rolling mantlets, or by wide gabions, which are filled with fascines and sand-bags. The miners push these gabions forward, and fix them in front of themselves, as necessity requires. Trenches of this description are constructed without much danger, provided they are strictly confined to the edge of the glacis. Lastly, the sap intended to lead into the descent of the fosse, and which is made in the shape of a covered gallery of six feet in height, to five or six in breadth, is called a covert-sap. It is fenced at intermediate distances, and is covered with fascines.

The fences, or blinds, are usually made of boughs, twisted and plaited together between two rows of sticks, six or seven feet high, and fixed in the earth at the distance of four or five feet from one another. The use of these fences or blinds is to protect the miners from hand-grenades or stones, which might be thrown at them. They are likewise adapted to cover the workmen, and to prevent the enemy from ascertaining the nature or the progress of their work.

Chandeliers are likewise useful on these occasions.
AND FORMATION OF SAPS.

These consist of stakes driven into long pieces of wood, between the intervals of which fascines are spread to protect the workmen; boards are also placed in front to obstruct the enemy's view, and hide whatever may be going on behind the chandlers. They are adopted when it is found necessary to mask a battery, in the same manner as when used for saps.

The miner who is at the head of the sap conceals his work from the enemy by means of a stuffed gabion, which he advances before him in proportion as the sap goes on. This gabion has five feet in diameter at least, and from six to seven in elevation. It is constructed after the manner of ordinary gabions. When used at a sap, it is filled with fascines, sandbags, &c. to prevent it from being pierced by a musket-ball. It has been adopted in the room of the mantlet, which is a species of moveable parapet, made of boards, or planks, three inches thick, and mounted upon rollers.

The miner has always one knee bent, in order to conceal himself from the besieged, whilst he is working in the boynu.

A sap having the dimensions already specified, is widened by the workmen in the trench, until it be ten or twelve feet in breadth, by three in depth, after which the parapet can resist the impression of cannon. When this sap serves as a path to the town or fort it is called a trench.

If it be in front of the town, and be intended for the lodgment of troops, it is called a line-trench or a place of arms. Trenches take the direction of the capitals which project out of the works that are attacked; they cross each other in a zig-zag way, so as not to be enfiladed by the fire of collateral works; but they must not deviate too much; they should rather graze, or lightly touch, the most advanced parts of the out-works of the town, at about the distance of ten or twelve toises.

It is sometimes necessary to open the leading
trenches at some distance from the town, that the artificers may continue their work without molestation; in that case they gradually sap on to the first line or place of arms, which cannot be further from the town than three hundred toises at most. This place of arms, or out-post, must in the whole extent of its circulation be about the distance specified from the town. The object of this out-post, or place of arms, at the same time that it may confine and hem in the garrison, is to protect the trenches that are pushed forward, to cover the first batteries, &c.

The trenches which form the second line parallel with the first, are drawn from, and issue out of this line, being of the same figure, narrowing at each end, from twenty-five to thirty toises, and approaching nearer to the town by one hundred and twenty, one hundred and forty, or one hundred and fifty toises.

The third line is executed and finished by the same means, at the distance of one hundred and forty to one hundred and forty-five toises beyond the second line, but this line is shorter, and has less circuitous dimensions than the other two. The third line, whose object is the same as that of the first and second, is within fifteen or twenty toises of the angles belonging to the covert-way.

When the situation of the place besieged is such as not to require a fourth line, it is from the third that the first impression is generally made upon the covert-way.

In this manner are saps executed as far as the crown-work of the covert way.

The cavaliers of a trench are usually constructed at twelve or fourteen toises from the covert-way,

These are speedily formed by means of three or four rows of gabions, which are placed upon one another at intervals of one foot and a half, to serve as reliefs and banquettes.

The gabions are filled with sand-bags and fascines, and the cavaliers form an epaulement of defence, whose top is bordered with sand-bags, and through
which there are the necessary loop-holes. From this lodgment the grenadiers must rush forward into the covert-way, and before any other approach can be made with safety, they must drive the enemy from that quarter.

When the enemy has been driven out of the covert-way, or becomes so much harassed and alarmed as not to be able to interrupt the works, the sap, under the protection of the batteries, and the fire from the cavalier, is carried on to the right and left of the edge of the glacis, stretching along the border of the parapet, and as soon as it has reached the traverses which are nearest to the point of attack, and which are generally those that bound the outermost parts of the place d'armes, the different works serve to cover the trench that is penetrating opposite to them into the parapet, in order to effect an entrance into the covert-way. These passages must be as deep as the nature of the ground will allow, they must be wide, and be concealed from the enemy's observation. They approach in this manner to the sap, and lengthen out towards the fossé. In a word, it is by means of the sap that a lodgment is made in the covert-way, and when once you are master of it, the batteries in breach are placed, together with the artillery that is to act against the flanks; and finally, a descent is made into the fossé.

When saps are constructed, you must be secured against the probability of being enfiladed by means of thick traverses. These are likewise used, when necessary, to protect the back-works of cavaliers. When you find it requisite to force your way into dry and deep ditches, or fossés, the first opening for that purpose must be made in the middle of the glacis. A passage is effected through the miner's gallery, beneath the lodgment of the counterscarp and the covert-way, so as to let you enter nearly on a level with the bottom of the fossé. When the ditch or fossé is only twelve or fifteen feet deep, it will be sufficient to pass over the parapet of the covert-way, taking

§ 5
care to penetrate four or five feet beneath the ban-
quett, in conformity to the precautions which have
been laid down. As soon as you get to the border of
the fossé, no time must be lost in deepening the de-
scent, and you must be particularly cautious to sup-
port the earth on the sides, lest it roll down. A pas-
sage across the fossé is gradually effected in this man-
ner by means of saps, which must be well defended
towards each side of the flanks. The men advance
in a covered gallery, which is made of fascines, sup-
ported by strong blinds or chandeliers, with such in-
tervals between them, as will afford six feet in breadth
to the gallery by six ditto in height.

When the ditch is full of water, the miner who is
at the head of the sap fixes the fascines, which are
handed to him from one man to another, and by these
means forms an epaulement on the right or left, ac-
cording to the exigencies of the side on which he
must be covered. As soon as the heap or mass of
earth is considerable enough to cover him, he un-
dertakes the bridge, plunging the stakes, with fasc-
cines across them, into the water. As soon as they
rise to a level with the surface, he throws a bed
across them, and has some earth scattered upon the
whole extent. The passage is thus finally secured,
by raising the fascines at some feet above the water,
and by giving twelve or fourteen feet in breadth to
the bridge. Whilst this work is going on, the
epaulement is proportionably raised, and continues
to be fortified, in order to be proof against the fire
from the batteries, or from any other discharge of
offensive arms.

If the water in the ditch be considerable, have a
rapid current, or be liable to swell from the opening
of any sluices, the fire of the town must be totally
silenced before the passage be attempted, which in
this case is a perilous undertaking, and matters must
be so managed as to destroy the effect of the sluices.
These things being accomplished, the operation may
proceed upon the principles already suggested; un-
der any other circumstances, it would require much time and great care.

If the fossé be of a nature, whether dry or full of water, to admit of defence, you must not open or uncover beneath the surface of the water, lest by so doing you overflow the descent.

The passage of the fossé has for its principal object the attainment of the breach in which the miners begin the lodgment, that is effected in the excavation, and which the workmen finally accomplish in order to render the breach practicable for the purpose of storming, or of taking possession of the place attacked.

The miner during the execution of his duty must observe the strictest silence; he must not expose himself unnecessarily, nor, from any impulse of ill-judged bravery, neglect to protect his body with the cuirass appropriated for that purpose, nor on any account abandon his head-piece.

ON THE SUPERIORITY WHICH AN ENEMY MAY APPEAR TO POSSESS, WHETHER FROM NUMBER, SITUATION, OR TALENTS.

FOR my part, observes the Prince De Ligne, with his usual vivacity, I have not the honour of personally knowing the extent of such superiority, nor do I think it exists in the degree we are apt to suspect. With respect to the empire, I am confident it does not, unless it be the object of the cabinet of Vienna to exhaust its own resources, by endeavouring to keep too much territory, and to establish a cordon of troops from the Caspian sea, Azof, and the Carecasus, as far as Agram, and from Czernowitz, the capital of the Bukowina, as far as the Adriatic; which would require sufficient force to line a semi-circle of 2000 leagues, a thing one would imagine impracticable, but which, nevertheless, occurred in 1778, when the two empires attacked Turkey.
Five hundred thousand men under arms, that could scarcely be called a regular army, found the issue of their achievements to end, on one side, in the capture of a miserable fortress about the middle of December, and on the other, in the reduction of an isolated place or bicoque, which surrendered the April following.

If you come to a determination of concentrating all your forces, and of having them constantly in readiness to march against the enemy's advanced posts: by ably manœuvring on his flanks, or by taking him in rear, you will always have the superiority, on account of the rapidity of your movements.

Even an inferior army, if properly managed, may present an equal front at every direction; whether it be attacked on either or both flanks, or be surrounded. In the first case, the two inward flanks would necessarily withstand twice the force of the enemy, which may be readily conceived by the following formation.

The strongest Army.

If the enemy should attempt to penetrate this line by defiling, the strongest flank, or the weakest, will, in either case, present an equal front. Should the enemy have the imprudence to march in open plain, center against center, it must be evident to every military man, that he would be out-flanked by the two wings, and inevitably beaten. But if, as the younger Cyrus did at the battle of Cunaxa, and Frederick of Prussia, at Leuthen, you should take a position on one of the enemy's wings, by refusing your
own; in that case, he will be overcome with the same facility, that a small army is moved in proportion to a great one, which must happen before he could get round to attack the refused wing. A superiority in discipline and manœuvres is, in fact, the only superiority which I respect or acknowledge, and that superiority may be acquired by talents and application.

The only way to secure a superiority in numbers, is to refrain from sending out large detachments, or to march against an enemy with double his force; for instance, to detach a thousand of your hussars for the purpose of harassing or perplexing 500 of his; to march two battalions against one, which he might have ordered into a village to levy contributions, or get forage, &c.

Thus in the campaign of 1778, not being able to reap as many laurcs as I could have wished, I got in a stock of hay, by preserving all the country which lies between the Poltzen and the Iser, and I had one day the satisfaction of amusing myself and my hussars, by driving General Belling's out-posts beyond Hunerwaster. There is so little merit in having done so, that I venture to quote myself as illustrative of the principle I have laid down.

When the enemy is superior in numbers, you must confine yourself within narrow encampments. If you should have more cavalry than he has, you must seek to meet him in an open country: and if you get into a strong inclosed country, with four steady battalions, you may defy eight. Superiority of genius produces a superiority in all cases, even in conducting the finances of a kingdom. For it is evident, that if you cannot manage things with considerable advantage during one campaign, you will be poorer in resources and money, though you were to set out with 90,000 millions of florins, which our present operations require, than he would find himself, who having only forty millions to command, makes rapid movements, lives at the expense of his enemy, takes
ACCOUNT OF THE
no prisoners, carries his artillery constantly with him. takes care of his men, gives them seasonable repose, and does not eventually fill the hospitals by pro-
tracting the war.

AN ACCOUNT OF THE ORIGIN, PROGRESS, AND
PRESENT STATE OF THE WAR DEPÔT IN
FRANCE.

It is known to all the world that the success of the
French armies in the late continental wars has
been owing to no cause more evident than the skill-
ful combinations with which their movements have
been directed at Paris; and that this skill has arisen
from the scientific and literary resources of its war de-
pôt. That establishment is, therefore, become inter-
esting not only as an object of curiosity, but as
worthy of imitation in all countries.

It was formerly the practice for the war-ministers
of France to hold their offices at their respective
hotels; so that, on a change of administration, or a
death, the records of that department were carelessly
transferred to the residence of the new minister, and
frequently lost or misplaced at the removal.

Louvois, the minister of Louis XIV. in 1668, first
undertook the herculean labour of organizing this
vast mass of confusion: but at his death the ar-
chives were removed to the garrets of Versailles,
unheeded by his successors, who, nevertheless suf-
f ered the collection to increase its bulk, for the be-
n ef of posterity. Towards the end of that reign
they were removed to the Hôtel des Invalides, at
Paris, under a regular establishment of clerks, to be
conducted by M. de la Faye.

The plan of organization was now renewed with
spirit, and at the end of several years successful pe-
severance, many valuable documents were brought
to light, to the great improvement of science, his-
tory, and military tactics. When the peace of
Utrecht gave repose to Europe, the war-ministers of France employed the interval towards perfecting these military treasures. All papers relating to the different wars were methodically classed, and enrolled under two distinct heads; the first, relating to dispatches from general officers with the army; and the second, containing the replies of the King, or his ministers—either the original documents or attested copies of them. To each volume M. de Chamillart caused a table of contents to be annexed; and gradually added thereto a summary of each year's military operations, under the title of "Avertissements."

These manuscripts, distinguished at the dépôt as their "Ancient Archives," comprise at least 2700 volumes; referring, in part, to the eleventh century, but commencing in series only from the year 1631.

The importance now given to this department authorized the nomination of a general officer to its future direction; and the Marshal de Maillebois, so well known in the German campaigns of 1733-4, and in the Italian campaigns of 1744-5, was appointed to the charge.

In the year 1696 a corps was instituted, called "Engineers of Camps and Armies," which served under the command of M. de Lillier, afterwards a brigadier. In 1726 they were named "Geographical Engineers," and employed with the staff of the army, in drawing plans, &c. These drawings, however, were not addressed to the war dépôt till the year 1744, when the minister Argenson united this collection and that of the minister at war with the fortification departments, and gave stability to the geographical engineer corps. They had a residence appointed them at Versailles, and wore the uniform of engineers in ordinary to the King. Their commanding officer continued to be selected from the staff of the army.

From the war dépôt Voltaire borrowed his most valuable materials to commemorate the age of Louis
ACCOUNT OF THE

XIV. : his work therefore bears a stamp of unrivalled authority.

The seven years' war having considerably extended the war department, the French government, at the suggestion of M. Berthier, ordered the Hôtel de la Guerre to be erected at Versailles, in 1758, that the different offices might be united.

This building was completed in 1760, and occupied the following year, when M. Berthier, a staff-officer, and the intimate friend of Marshal Saxe, was appointed chief of the geographical engineer department, having under his immediate charge the enrolment of all charts and plans not exactly relating to fortification. About this time many valuable topographical and geographical designs, on the Lower Rhine, Westphalia, Hesse, Hanover, &c. enriched the collection.

M. d'Argenson having been succeeded by the Marshal de Belleisle; and M. de Vault, a very distinguished officer, being appointed director of the dépôt, vice Maillébois, new plans were adopted.

At this period the materials of the war dépôt, though volumed and catalogued, were rather a collection than a digestion of authorities. M. de Vault, however, very patriotically resolved to associate these scattered documents, and persevered in the labour till he actually compiled the histories of the several campaigns, from the German war of 1677, progressively, through 125 volumes, down to the peace of 1763.

By an arrêt of April 1, 1769, the geographical engineer corps was re-organised; it was then composed of an engineer, en chef, four brigadiers, eight captains, and sixteen lieutenants, with a mathematical master, a German master, and two drawing-masters attached. Fourteen cartoons appear in the dépôt, from the pencils of these officers, giving a connected view of the seven years' war, together with other designs, equally honourable to the talents of the corps.

But their brilliant career was soon after arrested
by M. de St. Germain, the then minister, who, by a new regulation in 1776, embodied them with the engineer corps, under the orders of the director of fortifications. Against this innovation they presented a memorial, and in 1777 the former order was amended, and they were again styled "Military and Geographical Engineers."

Notwithstanding these dissatisfactions, Roger, Deplanque, Duplain, Montesson, Gauthier, &c. zealously exerted their professional abilities in the service of their country.

M. de Vault died in 1790 a lieutenant-general in the army, after devoting forty years to the improvement of this branch of history. M. de Beaudoin, who had been named his colleague, died in 1787, with the rank of field-marshall.

General Mathieu Dumas next succeeded to the direction of this department, but soon after, the spirit of revolution becoming universal, and the overthrow of ancient customs being the primary object of its grasp, the war depot, at the close of 1791, was removed from Versailles to Paris, for safety.

In the same year the depot for fortifications was detached from the war depot; and by a national decree of August 17, the geographical engineers were suppressed; their duty was once more transferred to the engineer department. But the new government being fully aware that the preservation of the country depended on the protection of this important department, gave it a new organization, by the following ordonnance:

BY THE KING.

Arrêt of 25th April, 1792.

"The war dépôt, established in 1688 by M. Louvois, contains,

"1. The correspondence of our generals and ministers during our former wars; circumstantial records of the various movements of our armies; topographical descriptions of the different countries
they traversed; historical summaries of the campaign of the present, and part of the former century; and the relative decisions of government on our military operations.

"2. Charts of our coasts and frontiers, designed either by engineer officers or military geographical engineers; plans of our encampments in Germany; engraved maps of Europe in general; and an infinite number of plans and memoirs, officially composed by the staff of our armies.

"The officer to whom the King may confide the direction of the valuable depot will extract therefrom, for the information of the minister, all such materials as time and experience have collected, or may hereafter collect, for the better and more effectual construction of future campaigns and military operations.

"The memoirs, plans, or other objects, or any of them comprised in this department, and hereby confided to the charge of the director-general of the war depot, may not, on any pretence or occasion, be delivered to any person whatsoever, unless such persons be authorised by a written order from the minister of war to receive the same. All memoirs, &c. to be classed alphabetically, so that no delay can arise in communicating any information to the minister, or to his written order, whenever the same shall be demanded; the minister reserving to himself the power of inspecting these records, either in the presence of the director-general of the depot, or of any other person, at his option, officially interested in such inquiry.

"An inventory to be made, as soon as time will permit, of every document enrolled in the war depot; one duplicate thereof to be deposited in the office of the minister, and another to be given to the director-general of the depot, who shall be held personally responsible for every part of the trust confided to him.

"Every person authorised by the written order of
the minister will be required to give a written receipt for every paper delivered to him from the dépôt, engaging to return the same at or within a given time; and such paper shall, upon such delivery, resume its former situation. The minister not to be exempt from this formality, so necessary for the preservation of regularity and order in the dépôt.

"The following are the duties imposed upon the director-general:

"To analyse the military memoirs, plans, charts, and other informations within his custody, relating to our coast and frontiers.

"To make notes of such as require to be re-copied or attested, and give information of those parts of our coasts or frontiers as have not yet been surveyed. To exhibit to the minister all topographical and military operations in his possession, in any wise calculated to assist the adjutant-generals of the different divisions, in their respective plans; and afterwards to collect the drawings of those officers, and to enrol the same in the war dépôt.

"To review and establish, upon the evidence of official reports sent in, the advantages and disadvantages to result from any change in our frontier, either granted to, or demanded from any power; and to compare the same with the committee of fortifications, or the director of the dépôt, for 'Reports on the Defence of Posts.'

"To examine and regulate all military comments on the process of opening new roads, the direction of water-courses, the erection of temporary bridges on our frontiers, and to decide how far the latter are favourable to commerce, or unfavourable to the posture and defence of that particular part of the country.

"To class all the records of the dépôt in the order best adapted to military instruction.

"These duties to be fulfilled in concert with the director of the dépôt of fortifications, so that the mi-
nister be furnished with every necessary information as to general reports, and the local positions taken, or to be taken by our army on the frontiers.

"The dépôt relating to fortifications has been confided to the direction of engineer officers, and it is proper that the same should be independent of the war dépôt—but their mutual co-operation is essential for the good of the service.

"The director of the engineer dépôt, therefore, is authorised to inspect all the works which have been, or hereafter may be furnished by engineer officers to the war dépôt, and to direct copies to be taken of the same, so that the committee of that corps may be better enabled, without borrowing their own plans, to pursue their accustomed service. These communications to be reciprocal; and the director of the war dépôt is hereby authorised to procure copies to be taken of such communications from the staff of the army as may be enrolled to the dépôt of fortifications.

"With respect to roads, canals, and bridges on our frontiers, fortresses, and fortified encampments, all such parts of the service shall be fully discussed by the respective directors of the war and fortifica-
tion dépôts, in preference to the minister at war.

"The minister of the interior shall be requested to issue orders to the engineers for bridges and embankments, to abide by the result of such consulta-
tion.

"The minister of war will be careful that persons return to the war dépôt all borrowed plans, charts, letters, memoirs, &c. as soon as they shall have made their necessary references thereto; and that they be again enrolled, to answer future exigency.

"The present regulations are not intended to affect those already made for the dépôt of fortifications, nor those relating to committees, in conformity to the arrêt by the King, dated December 11, 1791.

"The director-general of the war dépôt may be
assisted by two officers in the exercise of his various functions, provided such officers are not so employed to the prejudice of their regular service.

"Done at Paris, this 25th of April, 1792.
(Signed) "Louis."

"By the King,
(Signed) "P. de Grave."

At this period the annual expences of the war dépôt were estimated at 68,000 francs, and soon after geography and history were deprived of artificers, and remained stationary. Even the war dépôt was for some time totally neglected: it is true Citizen Poncet was ostensibly the director of that department; but the situation was not virtually filled till May, 1793, when Citizen Calon, formerly of the geographical engineer department, was appointed by the minister Bouchotte to that office, in which he was assisted by Citizen Desdorides, general of division.

In the same year Citizen Carnot established a private topographical cabinet, the materials for which were drawn from the war dépôt; and this institution re-awakened the then government to the importance of this neglected department.

As the troops of the republic were called into action, the want of geographical engineers was very severely felt by the staff of the army; and after a variety of efforts to supply this deficiency, it became advisable to revive that corps. Three new companies were accordingly raised, each composed of twelve artists, and classed in proportion to their respective merits. These persons were engaged in preparing plans of Bavaria, Suabia, &c. The materials collected in Egypt, at Naples, Piedmont, and St. Domingo, has since occupied their attention.

In 1793 this dépôt not only resumed its former importance, but with an increased establishment. The expence of the interior amounted to 128,000 francs, and that of the geographical engineers employed with the army to 102,500 francs.

By an order from the committee of safety, of 22
Brumaire, year 2, the grand map of France, attributed to Cassini, was removed from the observatory to the war dépôt; and twelve engravers and five deputies were appointed to retouch and perfect the plate. Latterly the dépôt has been enriched by a chart of the Low Countries by Ferraris, and another of Piedmont by Borgonia.

Such, at the commencement of the year 2, was the actual situation of the war dépôt, then established at the Place Vendome; and a committee was appointed to collect all geographical materials, of whatever nature, and wherever to be found. This order was productive of many valuable additions to the war dépôt; but the service had withdrawn so many plans, &c. during the war, that unless government had taken some very decisive step towards their restoration a severe loss would have been sustained.

The rapidity of events, and frequent changes of government, which agitated the republic at this momentous crisis, prevent any regular detail of the various operations which influenced the war dépôt; but under the direction of General Dupont, many useful arrangements were made.

In the year 5, that General having been otherwise appointed, was succeeded by the General of Division Ernouf, formerly chef de l'état major in the army of the Sambre and Meuse. During this administration, a valuable library was established at the war dépôt, and has since been very considerably augmented by every interesting work on war, whether a national or foreign publication. The grand plate of the map of France was completed about this time, at the expense of 85,400 francs, afterwards paid by monthly instalments of 1,836 francs.

The great resources afforded by this dépôt to the military service, at length determined the directory to perfect its organization; which it did by framing a plan for its administration, under which it now flourishes.

The interior is conducted by twenty-one clerks, and the geographical engineers employed on service
are paid out of the "extraordinary disbursements" of the army. In their capacities of topographical draftsmen, it is their duty to address to the director of the war depot, all charts, routes, plans, and other military operations, resulting from their labours; and such persons as were omitted in the minister's yearly list, were considered as no longer employed. The duties of the director, and the attributes of the depot remain nearly the same as then imposed by the arrêt of 25 April, 1792.

The reduction of the map of the Tyrol into a pocket compass, was among its labours in that year.

In the year 8, the first of the Consulate, the war depot was confined to the direction of the General of Division Clarke, employed near the person of the First Consul, when he established a private topographical bureau. General Desdorides was now replaced by the Adjutant-commandant Hastrel.

At the close of this year, all the public offices resumed a permanent form, and many considerable improvements took place in the war depot. An analytical catalogue is in forwardness of the ancient archives. The library has been classed, methodized, and catalogued, insomuch that upwards of 8000 volumes, comprehending every thing rare and scientific, relating either to the arts, geography, ancient or modern history, voyages, the art of war, philosophy, literature, &c. and every attention is paid towards augmenting the collection with the works of other nations.

In the enrolment of charts, either engraved or in manuscript, attention is had to their geographical position; so that all interior topographical information may be found classed with the division allotted to the country of which it forms a part.

In the year 9 (1801) the depot was enriched by nine plates of the geography of France, by Robert Hessel, and an infinity of topographical information; the fruits of the conquests of the French armies, arrived from Italy—chiefly from Turin, and a va...
riety of interesting works are preparing from these valuable materials.

In Italy, the engineer officers began a projection of the country between the Adige and the Adda; but being withdrawn for the purpose of establishing the Cisalpine frontiers, the work was removed to the geographical engineer department, and is in great forwardness. Helvetium and Piedmont will also occupy their labour. But the most important work was the projection of a plan of the republic, combined from four points of view taken on the banks of the Rhine: twenty-four geographical engineers were employed on this service, under the direction of Franchot the astronomer.

The great utility of the geographical engineer corps became now so evident, that it was proposed to keep them in constant pay and employment.* This project was laid before government by General Clarke; but that officer being soon after appointed minister plenipotentiary to the court of Etruria, was succeeded by General Andreossi, inspector-general of artillery; and Pascal Vallorgue, chef de bégade of engineers, replaced Hastref, who accompanied General Clarke.

General Andreossi's first object was to confirm the regulations of his predecessor, by hastening their completion; and every object under his direction has been improved; he has united descriptive memoirs with their topographical plans; and that government, as well as history, might be enlightened on the subject, the arrangement has been confided to officers of great talent and intelligence.

The General, also aware that an immediate communication with the heads of the army was essential to his plans, established periodical assemblies in the council-hall, of general officers, for the purpose of discussing military topics.

* The expenses of the depot independent of this corps, as well as clerks, amounted at this time to 110,000 francs per annum.
At a public conference, held on the 19th Venetian, the general explained to the meeting his views towards perfecting the expectations of the army, and the intentions of government. He proposed that a number of literary characters, to be named by the director, should be employed in commencing a work comprehensive of the general importance of the War Depôt, to be continued under the patronage of government, with views of military operations and heroic achievements.

The first consul having approved this measure, the work is in hand.

The following charts have been published at the press of the War Depôt and are for sale:
A chart of ci-devant Belgium, by Ferari.
That of Piedmont, by Borgonio.
That of France, by Robert Hesseln (nine sheets).
That of the Canal of Languedoc.
That of the Tyrol (six sheets).

The sale of Cassini’s map of France has been put off till peace; the others are sold at half-price to the military by order of government.

The following is an abstract of the contents of the War Depôt:
Independently of 8000 select volumes, among which are many very valuable atlases, of 2700 volumes of the ancient archives, and of more than 900 rolls of original modern plans; the Depôt contains 131 volumes and seventy-eight rolls of narrative, each of which is composed of at least fifty individual memoirs; 4700 engraved maps, of which there are from two to twenty-five copies of each, without counting those printed at the Depôt, and more than 7401 manuscript plans or drawings of marches, encampments, and battles.

The Depôt furnished, by order of government, in the course of the war, 7278 engraved maps, 207 manuscript plans or drawings, 61 atlases of different parts of the globe, and upwards of 600 narrative memoirs.

Great part, if not the whole, of the latter must have...
been dispersed among officers in the army. They form a chasm in history, but will, doubtless, be restored to their former station through the mediation of government: still, with all these disadvantages, it must be evident to the world, that this establishment, created by Louvois, reared by Mallebois, and modelled by De Vaulb, is the richest in the world, as to authentic elements of history, topography, and the art of war. It is of a description peculiar to France, and on principles worthy the imitation of every polished nation in Europe.

A CIRCULAR REDOUBT, CONTAINING TWENTY-FOUR TOISES OF INTERIOR DIAMETER; ON THE REVERSE SIDE OF WHOSE PARAPET FORTY-EIGHT LINES OR FACES, FORMING RE-ENTERING OR SALIANT ANGLES, MAY BE FIRED FROM.

The annexed plate represents a circular or round redoubt, which corresponds with the above description. By means of the capaciousness that is afforded to the river's side of the parapet, out of the forty-eight lines or faces, forming salient angles, two hundred and eighty soldiers, bearing muskets, may be easily stationed to considerable advantage; their appropriate spots to act from are marked by the commencement of each line of fire. The least attention to these lines, which cross and intersect one another in a variety of ways, will plainly shew that it would be impossible for an enemy to advance against any part of the circumference of this redoubt, without being exposed to a front and angular discharge of musketry. With a protection of this kind, there would be little hazard run in leaving the redoubt to its own means of defence; particularly so if some howitzers, or other pieces of ordnance, were to be placed on the most vulnerable points.

Should there be a scarcity of men, it would be
advisable to post one instead of two rank and file, at each face of the lines. The discharge of musketry would be less violent, but the ground in front of every part of the redoubt would be equally crossed by the fire.

A redoubt thus constructed, and with these means of protection, might hold out a considerable time, with a garrison consisting of two hundred and fifty, or three hundred men. Should there be the latter number, a reserve would remain of fifty or sixty men, over and above the quota which must be distributed along the parapet.

The parapet must be made of thicker materials than those which are generally made use of in field-fortifications. But this relates to a sort of interior defence, which would require such a measure; a species of defence that would exceed the limits of these extracts, were we to enter into a minute detail of all its necessary points. With respect to the re-entering lines, nothing can be more simple than their construction, and nothing better adapted to the objects of their defence. We cannot help expressing our surprise, that parapets secured by indented* or angular lines should not have been suggested before, as peculiarly suited to circular redoubts, and that the advantages should not have been before described.

If a defile or narrow pass, should lie in front of this circular redoubt, and it is the intention of the besieged to prevent the enemy from taking advantage of it, a battery A, may be erected in the centre of it, the principal face of which C D, should be so disposed, as to be able to batter directly upon the defile.

If it be thought advisable to defend the passage over a current of water, and a chain of circular red-

* The French expression is Parapet à crémaillère, which is a particular disposition of the circumference of a redoubt, or any other field-fortification, so as to make its exterior lines appear like the teeth of a saw, perpendicular to each other.

T 2
doubts are constructed for that purpose, with the view of having a cross-fire to protect the intervals between them; and, if at the same time it should not be deemed necessary to make use of a direct and extensive range of fire before the face C D, it would then be proper to diminish its extent, by prolonging the circular parts C a and D b, and to plant ordnance in a greater or smaller proportion, as appears to be the case at c; where one cannon is fixed. By these means the entrance into the redoubt is flanked, which might be defended any other way.

The gorge, or space between the extremities of the battery, is defended by an intrenchment B, which is made of jointed palisadoes. We would recommend wooden galleries to be constructed under the main part of the parapet. These galleries would be better suited than block-houses, in order to secure a retreat to the garrison, or to form small magazines. These galleries, the entrance to which may be seen in 1 and 2, might be pierced with loop-holes, that would serve not only for daylight, but might contribute materially to the defence of the battery A, along the faces C D, C a and D b, in case the enemy should have forced the round redoubt by surprise, or by any other means. This battery would then be disposed of in a variety of ways. In one way, by furnishing a discharge of artillery, above the musketry, which would fire from the intended parapet; in another, by affording shelter from the fire that might be occasioned by red-hot balls, or by shells thrown into the ordinary block-houses, or into any other sort of wooden lodgment; from the effects of which fire, the garrison might be protected by means of the earth and turf that form the upper extremities of the parapets; and finally, by serving as an interior defence or last resort, should the garrison be supplied, or be driven in by superiority of numbers and great activity.

It would be out of place to describe, how a chain, formed of this species of redoubt, might be made to
secure any frontier or outward territory, against the sudden irruptions of an enemy; which might be effected by establishing a quick correspondence, as well as a reciprocity of succours between the interior and the outward lines, and by being able, not only through the medium of well-contrived signals, to convey intelligence respecting the enemy's motions, (should he be bold enough to penetrate the first chain of redoubts,) from one extreme of the frontier to the other, but likewise to serve as a rallying point and a ground of support for all the forces which might be collected to act in some given quarter, or as a safe retreat for any particular body of men that might be forced to evacuate an enemy's country. Notwithstanding these observations, we think it our duty to add a few cursory remarks upon the subject.

Redoubts, formed upon this construction, are capable of being defended by the most undisciplined troops. Nor would it be necessary for them to be constantly at their posts, as they might easily assemble by means of a given signal; the facility of which will be seen by the following fact:

During the war in 1733, Marshal de Bourg, who commanded in Alsatia, had ordered seventy-six redoubts to be constructed for the defence of the Rhine from Huninguen to Lauterbourg. As a provisional garrison for these several redoubts, he gave directions that a body of militia, consisting of 9,723 men, should be immediately formed in the thirteen bailiwicks. The inhabitants, animated by that patriotic zeal, which dismisses private views, and is only alive to public good, found themselves in arms, ammunition, and food. This laudable establishment, instead of being gradually improved and brought to perfection, was laid aside, and the redoubts were abandoned at the conclusion of the peace in 1736. They were again partially restored in 1748, when the French armies under Noailles and Ciogni endeavoured to cover Lower Alsatia; but as everything was wanting to answer their views upon the whole extent of
the frontier that was so imminently threatened, some precautions were taken, but few or none from which any advantage could be derived. It is ridiculous, in fact, to begin fortifying an extensive frontier, when the enemy is at hand, and threatens to invade it. Could not the same precautions be taken for the defence of every frontier, as were adapted for that of Alsatia, in 1733? Was not the propriety, and indeed the excellence of this species of fortification, sufficiently proved by the anxiety that was expressed to re-establish it, in 1743? This is a natural question, to which we do not hesitate to answer in the affirmative manner; we shall shortly have an opportunity of entering more at large into the different branches of this military science.

Those readers who are solicitous to examine more minutely into the nature of redoubts, ought to peruse that part of the second volume of Montalembert's works in which he speaks of redoubts, as proposed to be constructed by Marshal Saxe; likewise of the different sorts of redoubts, which that author observes upon in his second and fourth volumes of the same work.

DESCRIPTION OF THE REGULAR FORTIFICATION
OF FORT QUERQUEVILLE.

FORT Querqueville, near Cherbourg, of which we give an exact and accurate plan, deserves peculiar notice, from its being constructed on the leading principles of Montalembert's system, modified by his opposers, the late French royal corps of engineers.

The fort A which defends the road is casemated, as well as the second front ZZZ. The flanks of the bastion B 1, and the flank l l, of the bastion b, of the outermost front, which defends the face 4 of the bastion B 2, deserve particular notice, nor is the front B B 1 B 2, less worthy of attention.

The work C exhibits a correct idea of a modern
FORT QUERQUEVILLE.

front, with the variations made in Vauban's plan by Cormontagne Montalembert, the late French royal corps of engineers, &c. The broken tenaille, o o, between the bastions a and b, and the large half-moon c, before the front, will, in a peculiar manner, attract the attention of the connoisseur. As to re-entrant places of arms q q, the lunettes, d and p, inclosed in the avant covert-way, the faces e f of the lunette d, which draws its defence from the place of arms g, and the works m and n, their merits appear to us extremely questionable, as they are both two small, and not sufficiently defended; nor do we think that the advantages be derived from the covered ways, g g and h h, are any ways proportionate to the immense expense which the revetements, i, i, i, i, of their broken glacis must have occasioned.

The line K K, is a line drawn from the steeple of Querqueville, about 800 toises distant from the fort A. The most important change, which the discoveries of eminent modern engineers have introduced into the art of fortifying places, consists in the armed casemates, called by the French "Casemates à feu." This valuable improvement, of which the Prussians had already actually availed themselves, while the late French royal corps of engineers was yet endeavouring to prove, against Montalembert, that no troops would be able to hold out in these casemates after a few discharges of their cannon, has been adopted in the construction of this fort, as well as of the royal, now national, fort of St. Pelée, which also defends the Cherbourg road; yet, in a manner not only more expensive, but also less efficacious, than would have been the case if the royal engineers, charged with the building of these forts, had closely adhered to the principles laid down by Montalembert.

END OF VOL. II.

### DIRECTIONS

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