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MOUNTAIN WARFARE:

AN ESSAY

ON THE CONDUCT OF

MILITARY OPERATIONS

IN

MOUNTAINOUS COUNTRIES.

BY

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THIS ATTEMPT TO BE USEFUL TO THE SERVICE,

WHICH THEY HAVE SO GLORIFIED BY THEIR
NOBLE DEATHS,

Is Dedicated to the Memory

OF

THREE GALLANT SOLDIERS,

CAPTAIN JOHN DAVIDSON, 1st P.I.,

LIEUTENANT H. CHAPMAN, 101st R.B.F.,

LIEUTENANT RICHMOND, 20th P.I.,

WHO FELL IN THE DEVOTED DISCHARGE OF THEIR DUTY
AT AMBEYLA.



THE many occasions on which it becomes necessary in India to send British Troops into countries of a mountainous nature, and the fact that there is great meagreness of information in all military works on the subject of this style of warfare, induced the Author to attempt to supply the desideratum, and he hopes that though his efforts may not be deemed complete, they will still be appreciated, and found useful to those of his brother Officers, whose happy destiny shall direct their presence at the next Hill Campaign in which our arms may be engaged.

MOUNTAIN WARFARE.

THE object of this Essay is to endeavour to show how a Mountain Campaign can be carried on with success; and it cannot commence with better advice than to aver that, if it can be done with honor, Mountain Warfare is a thing to be avoided, not entered on without the most mature thought, for the unusual dangers and difficulties with which it is attended preclude any certainty of success, even should no possible precautions have been neglected. And, requiring as it does, the most perfect and carefully digested plan, in which nothing shall be forgotten, and as little as possible risked, it is evident that not even the possession of an efficient Army, abundant resources, and detailed information, will enable us to ensure success; more is wanted. Here, more than in any other style of warfare, is required a Commander who combines the two opposite qualities of daring and caution, and who knows, almost instinctively, how and when he may best apply each.

And even then, the great impracticability of the ground, the difficulty of obtaining information, the uncertainty of procuring supplies, and the general inexperience of Officers in such warfare, are more than enough to perplex any General not thoroughly conversant with the whole art himself; while the intrepidity and patriotism which seem so peculiar to the inhabitants of highlands, when called on to defend their native fastnesses, and the broken and irregular sort of fighting which the nature of the ground necessitates, require more than ordinary nerve, endurance, and intelligence from the Troops.

However, war having been determined on, everything should be done to secure the active aid, or at all events the decided neutrality, of any State, the position of whose territory can possibly exert any influence on the success of the campaign. However insignificant the enmity of a petty State may appear at the time, the amount of annoyance which it can cause, without even throwing off the cloak of neutrality, is something incredible. Therefore any sacrifice at all commensurate with the good which will probably accrue from its aid or its strict neutrality, should be made ; but if nothing can induce it to reciprocate a friendly feeling, then decisive measures should be taken beforehand to prevent it from acting injuriously on the fate of the campaign. It may and probably will prove very difficult to accomplish this, for, let the real feelings of a neighbouring State be what they may, it is not in human nature to proclaim openly its views before some grounds are obtained for forming a tolerable opinion as to the eventual success of either party ; but, notwithstanding this difficulty, the necessity for knowing beforehand exactly what is to be expected from our neighbours is so great, that it should induce Government to resort to every fair means of testing their temper. Far better is it to enter on a campaign against two avowed foes, than with a lukewarm friend and a possibly eventual enemy. This point has not been unfrequently neglected and never more glaringly so than in the Cabul Campaign, when our base and line of operations were literally surrounded by States whose hatred of us was hardly concealed, and was certainly not rendered innocuous, as above recommended. But it is not necessary to look so far back for an instance ; the Ambeyla Campaign, the most serious check we ever received from frontier tribes, affords an excellent example ; here, our attempt to advance into the hills without securing the neutrality of a tribe, who could at any moment have cut us off from our line of retreat, converted what might have been an ordinary hill campaign against Hindustani fanatics alone, into what Sir Neville Chamberlain has described as a "general combination of almost all the Hill Tribes from the Indus to the neighbourhood of Cabul."

In all warfare a detailed report of the theatre of war is very necessary, but in that carried on among rugged and impracticable mountains, it becomes absolutely indispensable : in a plain country a knowledge of the main points, such as the usual direction of the rivers, the relative position of the large cities, and the general nature of the country,

Necessity for a detailed report of the country.

&c., is so far sufficient that it will enable a General to form tolerable conclusions on which to base his plan of operations ; but in a hilly country this is impossible. Such general knowledge will not there point out the direction and nature of the passes, the defiles, the heights, the torrents, or the roads ; a detailed knowledge of each of these is necessary, for though there are some general features common to all mountains, yet the details are widely different. And it is nothing to the point to show (as can undoubtedly be done, more especially in warfare against savage tribes), that Armies have penetrated and operated successfully in mountains without such information ; this merely proves that want of talent in an enemy's General, or of courage in his troops, will occasionally enable us to dispense with precautions, which would have been otherwise necessary. It is merely one more instance of the uncertainty of war. A General who undertakes a campaign without previously gaining information of the country he is to operate in, may be successful ; but he neither deserves nor can expect success. Sometimes, however, it may not be possible to procure such an extent of information, but there is no doubt that, the less the details to be enumerated are neglected, the more facile will become the conception of a plan for the successful accomplishment of the campaign.

In the event of its being possible to send an intelligent Officer to reconnoitre, he should be placed in possession of all certain information which has already been procured, together with a slight sketch of the plan of operations which the present state of the knowledge of the country would seem to render advisable ; by this means no time will be lost in endeavouring to seek for information with which Government is already acquainted, and the Officer sent will be able to form an useful opinion of the practicability of the proposed plan, or to give suggestions which will materially aid its successful adoption. But this may not always be practicable ; for, unless some very clever disguise were adopted, the authorities and people of the country, being more than usually on the alert, would be certain to discover the Officer sent, and this is more particularly the case in India. To rely on the reports of the natives themselves may, therefore, not be avoidable, but, untrustworthy as such reports will generally be, they can with ease be turned to account, if care be taken to explain to the emissaries exactly what information is required of them, and complete reliance is placed on no one man's story, but rather on those facts only which, from being corroborated by the evidence of several

men, sent under different circumstances, and unknown to each other, would appear to be true.

In making a reconnoissance of a mountainous country it will be as well to bear in mind certain general Observations on general nature of mountains. facts, a knowledge of which will assist wonderfully in a ready comprehension of the country under survey. It has been observed that ranges of mountains are seldom without their corresponding valleys, and this only in the case of minor ranges which do not send out any spurs ; and we find that where there is a succession of ranges of a lofty and extensive nature like the Himalayas, these almost invariably rise by degrees from the plains in a succession of chains, each higher than the last, and usually parallel to each other, till they reach the highest range, and an attentive observation of a range will often give a fair idea of the general nature of the ranges throughout the country, and, having once got a key to this, a shrewd observer will soon find several peculiarities which will also be more or less unvarying. Sometimes mountains run in one continuous chain, the peaks indeed differing considerably in height, but in no place being disunited at their feet, while at others the hills seem to form an irregular cluster connected at their bases, but occasionally without any such communication. Again it may be noticed in most extensive chains that two parallel ranges are at times connected by spurs from the higher of the two, and when this is the case the ground between them is usually found to be considerably higher than that of the plains. This peculiarity is noticeable in the valleys of Cashmeer, Chumba, and others.

Masses of mountains sometimes diverge from a common centre which is usually the highest point, and from it the largest rivers take their rise. The heights, where the spurs of the main range diverge, are generally higher than the surrounding hills, and, consequently, where two or more of these are seen, they often infer the presence of valleys, corresponding with the depressions between these peaks. The passes of a country, those roads which go *over* the hills, are found most frequently at spots where a dip in the summit line between two high peaks denotes the presence of valleys as above stated ; the passes are different from the defiles which are found in or along the bed of a river or torrent, or at those points where there are breaks or chasms in the ranges. The best roads are often to be found running near the summit of the ranges, thus avoiding the steep ascents and descents, which would be met with in attempting to cross all the perpendicular

spurs of the range ; but this applies to ranges of moderate height, not to such snow-topped chains as the Himalayas or the Andes. Ranges of mountains differ considerably in their crest line ; some rise abruptly into rugged rocky peaks, others undulate into knolls or dunes, while others again preserve a nearly level sky line. It is well to observe these ; where the first is seen the slopes of the mountains are generally precipitous, and, from the confined space on the top of them, it is impossible that any positions can be taken up on them, and it is also improbable that any roads will be found along them ; where the crest is undulating, on the contrary, roads will often be found, and can always be made, while ample space for a position can be found, and the sides will be less precipitous ; again where the sky line seems nearly level, the ground at the top of the ridge will be also level, so that roads can be made along it, but the sides of such hills are often extremely precipitous and difficult to surmount. Of the facts of which experience has demonstrated the existence, there is none more important, or perhaps less likely to be conceived by an unpractised mountaineer, than that roads, paths, or tracts are existent on almost every hill side, in a profusion that astonishes ; but, be the cause what it may—whether made by wandering herdsmen seeking with their cattle the scanty herbage of the hill side—whether they form the unknown and almost impracticable tracks made by smugglers—whether they be merely paths formed by wild beasts of the field—or whether it be, that, as convenient sites for villages are as rare as apt spots for posts, the paths of intercommunication run over the hill—certain is it that one of the never-failing peculiarities of mountains, is that wild pathways do exist in an astonishing variety of directions and in extraordinary numbers.

Valleys are absolutely inseparable from hills, and will be treated next ; they are all of one nature except with regard to direction ; and the names, valley, mountain valley, table land, and glen, merely relate to their size and the height of the ground. Table lands, when spoken of in relation to valleys, are those of very considerable extent and elevation, while valleys are those whose extent is moderate, and height not much more than that of the plains or of the last valley towards the plains, for it is a fact to be noticed that the valleys become gradually more elevated in the same manner as do the ranges. Mountain valleys are those whose elevation is very considerably greater than that of the plains, or the other valleys in

Description of valleys.

their vicinity. Glens are merely small valleys, and should not be spoken of in connection with any but small ranges. The direction of valleys has also caused different names to be given to them ; these are—LONGITUDINAL, or those “which lie between parallel ridges running in the direction of the main chain” ; TRANSVERSAL, or those which lie across the direction of the main chain ; and LATERAL, or those which communicate laterally with either longitudinal or transversal valleys. For the rest, all valleys must lie between two ranges or their spurs, and they are almost invariably formed by the course of some existent or former stream which takes its rise in the mountains.

In perusing the details of intelligence laid down, the reader must not suppose that all can be procured ; on the contrary, while every possible means are employed to procure this information in all its details, it is not to be expected that it will always be possible to do so ; the time which can be allowed for the survey, the degree of secrecy necessary in making it, and the character of those to whom it is entrusted, will always suggest the probability of its being incomplete in many of its details.

A report of this kind should always commence with a consideration of the relative position of the country under survey to those States which are supposed to be friendly or hostile to our Government. The powers possessed by these States for good or evil should be noted, the description of the boundaries should be given, whether the aid which a friendly Power might give, or the annoyance which a hostile Government could inflict, is the more probable ; of course, in the event of the hostility of a neighbouring State becoming open and avowed, it will be necessary to obtain separate information regarding its natural and artificial capabilities.

A person unacquainted with the peculiarities of mountains, is very apt, on seeing a mountainous country from a distance, to think that it is nothing but a collection of heights and peaks, all huddled together in wild confusion and without connection with each other, and this is the cause of travellers so frequently stating that various unknown countries are formed of rugged impracticable mountains ; but a knowledge of the general rules which govern these formations, would shew that they all resolve themselves into a series of ranges, with their corresponding valleys, formed by the streams which take their rise in the mountains.

Names of valleys.

Report how to be commenced.

Apparent confusion of a mass of mountains at first sight.

The general nature of the country should first be noted. Is it a mass of mountains? Does it consist of a large valley shut in on all sides by ranges of hills? or do only one or two ranges intervene between the plain on our side and that in the enemy's direction? The number and general direction of the ranges should be given, both magnetically, and with reference to the direction of the boundaries of the country. It is very important to notice all

General nature of the country.
Importance of noticing the direction of a range.
 the bends in a range of mountains, as the general direction of a range determines whether it is favourably situated for the defence of the country; of course, if the range forms a salient angle towards the enemy, a force judiciously placed will put us in possession of interior lines, and enable us to choose our point of attack, which the enemy will not be able to resist properly unless he has overwhelming forces; on the other hand, if the chain runs so as to make the apex of the re-entering angle towards us, it becomes evident that the enemy has all these advantages, and that consequently it will be very difficult for us to force our passage through the range, if he makes proper use of

Details of a range to be noticed.
 his interior lines. The length and height of all the ranges and their spurs should be given, as also the points, if any, at which there are breaks in them, or where there is any considerable change in their height. The breadth also should be given in miles, and hours or days' march. Do the ranges for the most run parallel to each other? or is there any great irregularity in their direction; if so, at what points? Are they ever connected by perpendicular spurs? Describe the spurs which run out from the chain and what becomes of them? Do they end gradually in a valley or plain, and is their length pretty uniform, or do some of them approach so near the opposite range as to place the valley under fire of heights? What are the points of their leaving the range, and do they take a perpendicular course? The general nature of the formation of the sides should be given, whether of bare rugged rocks or smooth grassy slopes, whether covered with large trees or with low brushwood. And of what sort are these two last?

Describe the principal peaks and give their heights, especially those whose position makes them important from a military point of view. Give the height of the snow line and of the same in winter. Are the sides of the hills cut into terraces and cultivated, or left barren? Are the slopes always abrupt, or any where gradual? And give the amount of slope in degrees. What

facilities or difficulties exist in these hills for the formation of roads or the passage of Troops? The heights of the most commanding peaks should be noted, particularly their relative height with regard to each other, or to fortified posts of any description. Any heights, which, from their position near important roads, fortresses or towns, or which can in any way be made formidable, should be most carefully described, the distances at which they command the road or fort, as well as whether they are themselves commanded by any other height, should be stated; if they are not themselves commanded, great care should be taken to notice the nature of their sides, of the roads which lead to their summits, and any other circumstance which may lead to their commanding powers being nullified or mitigated.

It should be remarked whether there are any mountains which, from their forming sources of large rivers, are consequently placed in command of all the valleys formed by these rivers; this is particularly the case with the St. Gothard, which commands the Rheinthal, Reussthal, the Valteline and many other valleys, through which the principal roads of Switzerland run; it is thus perhaps the most important position in the country, and it "has always been the object of the various Armies which have contended for the mastery of that country to gain possession of it, and he in whose possession it has remained has always been able to force the evacuation of the country by the power which he had of acting on the communications of his enemy."

Next describe the valleys; of what nature are they, longitudinal, transversal or lateral? Give their length, breadth, and shape; state whether the breadth remains pretty much the same or varies at all at any point. Are they at any part so narrow as to come within range of cannon from the surrounding hills? What rivers run through them?

Describe the nature of the defiles which form the entry and exit to them, and the lateral valleys which meet them. Is there any spot or spots where a number of the principal valleys meet? and, as this is very important, giving as it does the command of the country in the same manner as a central mountain sometimes does, a detailed description of the ground should be given and its capabilities for holding a large body of Troops set down. What is the nature of the ground in these valleys, level, undulating, or much cut up by ravines, rivulets, or swamps? What is the amount and style of

Importance of noticing mountains which are centrally placed.

Description of the valleys.

Importance of a central valley.

Description of valleys, continued.

cultivation in them? And what grows on the ground not under cultivation? Are there any large lakes or lochs in them? Are these shallow and passable at parts or very deep? Give their length, breadth, and shape, and state if they obstruct, in any great degree, the passage through the valley. Are there any detached hills or knolls which could advantageously be turned into posts? Are the communications through the valley easy? Where do they lead to? Which of the smaller valleys offer facilities for turning a position which the enemy might take up in the large ones? What points would it be necessary to hold for the protection of our line of communications in each of the valleys by which we might advance to the attack of the enemy? What facilities does the country in general, but the valleys in particular, offer for the collection of grain and forage in aid of commissariat arrangements?

And of a river—for such are inseparable from valleys—from what mountains does it take its rise, and what valleys does it form in its course? What is its length in the

Description of the rivers.

country under survey? What is its general direction? Is its course nearly straight or very tortuous? What confluents does it receive, and at what points? Where do these take their rise? Give their length and general direction. What valleys do they form? What is the rate of the current? And does the stream form any rapids or cataracts? Is it obstructed by rocks or small islands, which would assist in throwing over bridges? Describe the banks. Are they steep, shelving, rocky, muddy or sandy? And what is the vegetation near them? Are they liable to change? Is the bottom of the river composed of mud, sand, gravel or boulders? State the position of all fords,

Of fords, &c.

ferries and bridges, and give particulars of the breadth and current of the river at these points. Describe the structure of the bridges, the methods of passage employed at the ferries, and state which of these are passable for everything, and which only for men. Describe the fords minutely, the nature of both banks, of the bottom and of the current. State whether they are passable for Infantry, Cavalry, and Artillery. Are the fords liable to change?

Is the river subject to sudden rises from any cause, such as heavy rain, the melting of snow, or the giving way of obstructions up above? Do the swellings continue for any length of time, or do they generally go down as suddenly as they rose? Do they render the fords and ferries impracticable? At what time of

the year are these most frequent? In all mountainous countries there are torrents which are dry at certain seasons of the year, and, as these often suggest the means of turning an enemy's position or of making a short cut, they should be carefully reconnoitred and reported on; but, as these dry beds are subject to sudden and unexpected inundations of water, they may become very dangerous, if heedlessly used during the floods. On one occasion a detachment of British Troops marching through the Bolan Pass was overtaken by one of these rushes of water and lost forty-one men and the whole of their baggage. The instances which could be given of the successful use of torrent beds are very numerous. When Sir David Ochterlony arrived in front of the Bicheeahkoh Pass into Nepal, he found after a careful survey that the Ghoorkhas had debarred the entrance to it by three successive fortifications, the last of which was absolutely impregnable, while every road or pathway which seemed to offer a chance of their being turned was similarly defended. As Kalunga and Nalaghar had shown with what determined and glorious courage the Ghoorkhas could defend their fortifications against the most desperate assaults, it would have been madness to attempt to storm them in front, and the General determined to attempt to find some track, which, however rugged and difficult, would eventually lead a force clear of the formidable obstructions which had been prepared by his enemy. At last, after four days' most arduous and anxious search, Captain Pickersgill, of the Quartermaster-General's Department, found one, and, during the darkness of the succeeding night, a brigade was led by him through a deep and narrow ravine called the Baleekola, which, after a painful ascent, brought the detachment to a watercourse leading to a steep acclivity, by the seizure of which the Ghoorkha position became untenable, and they accordingly evacuated it. This simple operation not only saved the lives of thousands who must have been sacrificed in a front attack on this position, but, laying open the road to Khatmandu, induced that Court to treat for peace.

The plain land of mountainous countries is also frequently much intersected by ravines and rents in the sides of the hills, and as these may, if very frequent, render the country impassable, it becomes necessary to ascertain the means used for their passage by the country people, and also if there is any way of turning them, or making use of

Consideration of dry beds of torrents.

Ravines.

their bottoms for purposes of transit so as to avoid repeated crossings.

Information as to the roads of a country is of the very greatest importance, more so perhaps than as to the points above mentioned; for, whatever can be done by a

Roads. lightly-equipped turning column, an Army must eschew pathways and tracks, keeping to those roads which are passable for the baggage animals it has with it. Made roads will not often be found, except in Europe, and if they are, they will be such as are practicable for laden animals, and will not, therefore, require much improvement, or minute description.

Roads among hills are found to be subject to certain rules; they usually wind along the face of a hill, conforming to the windings caused in them by the shoulders or buttresses of the hill, but occasionally going over low shoots, or descending into the bed of a stream, and being liable in consequence to very steep ascents and descents; it will often, therefore, be necessary to alter their direction in order to avoid these, and it may also be advisable to widen them at certain spots, but, in the long run, it will be found better to stick to the roads of the country, merely repairing them at the worst places, for hill roads are not made in a day, and the time occupied in making a road may make the difference of success and failure.

A description of the general state of each road should be given, its length from point to point, divided into hours' march, and into ascents and descents. State its usual width, whether it is for the most part tolerably level, winding round the face of the hills, or very steep, going up and down and over the hills instead? Which of the roads are passable at all seasons of the year? and which not? or are any of them at times obstructed by wind or snow, or rendered dangerous by avalanches and falling rocks?

The heights which command roads should be carefully noted, especially such as cannot themselves be commanded by other heights, and which are of a nature to place the road under a destructive fire. All positions on them where the enemy could make a good stand should also be remarked, as also the means by which these can be turned, and as the experience of wars, and the fact that tenable positions are not so frequent among mountains as is generally supposed, show, that the same positions are, and indeed must be taken up again and again, all those which have been successfully held on former occasions should be remarked and carefully described.

So much for the main roads ; as to those which are generally known to the people of the country, there cannot be much difficulty in finding out about them. But there are others even more important, namely, those tracks which are known only to shepherds, smugglers, and hunters ; these may have the very greatest influence on the conduct of the campaign ; the knowledge of an insignificant pathway has before led, and may again lead to the conquest of a country ; in fact all the most brilliant successes in Mountain Warfare have been gained by means of such tracks, the very existence of which has often been unknown to the enemy himself. The reconnoitring Officer should not be discouraged by the reports of the country people, who often consider any bad road to be impassable for Troops ; he should seek these tracks himself, bearing in mind the case of the French Marshal St. Cyr in his advance to Barcelona through the mountains of Catalonia : his staff, his spies, the country people, every one whom he asked, declared there was no other way of turning the mountains, till he went himself, found a pathway, and led his Army safely over it, to the confusion of the Spaniards, who had prepared a regular defence in the opinion that he would try to force the main passes.

In addition to the details enumerated above, it should be distinctly stated where the roads are practicable for artillery and laden animals, and where only for footmen, and in the event of

Roads, continued. their not being practicable for the two former, it should be stated if any available amount of

labour could make them so. As defiles and passes afford the only means of the passage of mountains, they are in many respects

Consideration of passes to be considered as substitutes for and identical with roads, and all the considerations

and defiles. which apply to these latter apply also to them. But there are other circumstances which are peculiar to them, and these we will now relate. The nature of the ground at the entrance of a defile should be particularly remarked, as it will be most useful in aid of the dispositions which may be made to attack it. A description of the entrance should also be given, and the length of the defile stated, taking care, if the defile should be long, to report as to the spots in which Troops could most advantageously be bivouacked. The necessity of this will be seen when it is considered that the Khyber is 30 miles through, and the Bolan 54 miles. State their width, that is not merely their average width, but *all* the points where it differs from the average. Defiles differ so immensely at various

parts that this information is quite indispensable ; for instance, the Khyber at Ali Musjid is one hundred yards across, at Landee Khana only twelve feet, while at Lalabeg it broadens into a small valley. The length of the pass must be estimated in hours' journey, that is, the probable number of hours which would be taken up by a Force in marching through it, making allowance for the delay caused by the opposition of the enemy, the steepness of the ascent, the nature of the bottom of the pass, and lastly, for the number and description of baggage animals with the Force. The average ascent and descent in a mile should be stated, and the direction of the defile given, is it winding or straight ? At what points does it deviate from the straight line ? Describe the heights on either flank, stating how they can be crowned or commanded ? State the parts of the defile which from their situation suggest the probability of the enemy's constructing barricades and other fortifications, and the roads by which these could be turned or commanded. Describe the exit of the pass ; what facilities does it offer for the formation or encampment of Troops of the three arms ? All defiles can be turned by some other route, and of

Turning defiles.

course in treating of a defile it will be necessary to know what other routes exist, else one of the safest and surest modes of forcing a passage through a range will be lost ; there can be no doubt of the existence of these in all defiles, as even the far-famed Khyber can be turned by five different routes, namely, the Teera, Abkhana, Tatara, Kadapa, and the Kafir Tungee.

Forts are often constructed above the narrowest parts of a defile, and, if any exist, the position of them should be carefully noted, for, though apparently formidable, they are often placed so high and so perpendicularly over the pass, as to "facilitate the approach of an adventurous enemy by hindering the defenders from giving their guns sufficient depression to be of use ;" and again, they are frequently commanded at no very great distances, and the supply of water is often liable to be cut off by the besiegers, and lastly, they are frequently not so inaccessible as they seem or have been reported, consequently some path can generally be found to turn their outer defences. Of course where a fort is placed on a spot which answers all the requirements of a position, such as, being on commanding ground, having a free range for its guns, a good supply of provisions and a certain one of water, and not being liable to a *coup-de-main*, it becomes evident that it must have

Of hill forts in such passes.

complete influence on the mastery of the defile. The little fort of Bard, in the valley of Aosta, was of this description, and its history affords an excellent example of the immense influence such a small place may have on the fate of a campaign. This fort was placed on an isolated rock in the centre of the debouchment of the valley of Aosta, and commanded the only practicable road. Napoleon's Army, debouching into the plains after the passage of the Great St. Bernard, found itself suddenly stopped by this fort, which the failure of an escalade proved could only be taken by a regular siege. There was no time for this ; everything depended on the arrival of the French Army in the plains of Italy without the knowledge of the Austrians, and, as their Artillery could not attempt to brave the fire from the fort, Napoleon had recourse to a stratagem. The Infantry and Cavalry were sent by pathways which, though difficult, were practicable, and the gun wheels being wrapped in straw, and a heap of the same being strewn on the road to deaden the sound, the guns were drawn through at night without discovery, and thus the fort, which a few hours before had appeared to threaten the success of the Emperor's brilliant project of throwing himself between the Austrian Army and their only point of retreat, was rendered harmless. But the Emperor afterwards allowed that, had it proved impossible to get his guns through without the prior capture of the fort, the whole campaign must have miscarried. A very minute description of a stronghold is not necessary beforehand, but its situation and extent, should be noted ; the probable time, and the weight of gun it would require to take it should be given, and whether any reliance for supplies can be placed on the surrounding districts.

Such are the physical features of the country with which it is necessary to be acquainted ; but there are other considerations which it is advisable to be familiar with. The climate of a country often exercises a very important influence on a campaign, so much so, that it may sometimes be enumerated under the head of its natural defences ; but even if the climate is not sufficiently inclement to affect the conduct of a war materially, a knowledge of its peculiarities will certainly enable us to make such medical arrangements as will go far to diminish sickness in our Army. Therefore, information on the following points should also be sought. What is the general nature of the atmosphere, hot, cold, dry or moist ? What is the duration of the various seasons ? What is the mean temperature in the sun and in the shade throughout the several months of the

The climate of the country to be operated in.

year? What is the degree of difference between the temperature of the night and the day? What is the prevailing direction of the regular winds and also of the variable ones? Are the rains periodical or variable? Is there much dew? At what time do the first falls of snow occur? What are the most common diseases, and are there any local remedies which appear to be very effectual? State anything in the habits or dress of the people which, if adopted in our Army, might conduce to its health and comfort.

The military character of the nation with whom it is proposed to wage war should be also considered. Are their soldiers of a courageous or a pusillanimous disposition? If courageous, is their courage of the stern, unyielding sort, or of the frothy, effervescent kind? If pusillanimous, is their cowardice complete, or at all mixed with the passive courage which, mingled with despair, becomes a most formidable enemy? What is the strength of the enemy's Army, and the greatest extent to which it can be increased on an emergency? What are the means of doing this? State the number which can be made available for field service, after deducting garrisons from the grand total of men under arms. Is their army regular or irregular, or partly

The military character of the nation, against whom war is waged, to be considered.

Of the state of his Troops.

both? Are the Troops veteran or raw? This will make the greatest possible difference in the conduct of the war; in the campaign of 1797 the Troops of Napoleon were few, but veteran, while those of the Archduke Charles, though more numerous, were nearly untrained. Napoleon determined, by taking the initiative, and striking decisive blows before the Austrians had time to receive a reinforcement of veteran Troops that was on its way from the Rhine, to seize upon Vienna; the Archduke wished to delay the campaign by a careful defensive, and thus give time for the more thorough training of his Troops. If the former was successful, it is not on that account less certain that Prince Charles's plan was the best for the circumstances. Is their Army well or ill officered? Has it seen fighting,

Of the morale of his Army.

and been successful or not? The morale of the enemy's Troops is a really important point, and no better proof can be desired of this than the conduct of the French Troops in the Pyrenees, when they stormed the "inaccessible" rocks on the left of the English position at the battle of Sauroren; nothing could have exceeded the determined gallantry with which they came on, and yet one month later these very men,

discouraged by hardships and defeats, gave way, without hardly firing a shot, to the assault of the Spaniards on the Great Rhine. Is the Army generally composed of one race and religion? If not, is there any jealousy between the races or sects composing it?

Is the Army, and the country in general, heart and soul in the cause of their leaders? What is the state of armament of the various branches, and in which branch do they place most confidence? What is the method of warfare peculiar to them? And

Of the military reputation of their chiefs. last, but not least, what is the reputation of their leaders? How important this point is, in considering the military capabilities of nations, may be gathered from the words of the greatest captain the world ever saw. "The Commander-in-Chief is everything to an Army. It was not the Roman Army that conquered Gaul, but Cæsar; it was not the Carthaginian Army which made Rome tremble, but Hannibal; it was not the Macedonian Army which marched to the Indus, but Alexander; it was not the Prussian Army which defended Prussia for seven years against the three most powerful States of Europe, but Frederic."

The military resources of a civilized nation may frequently form the basis for a supposition as to the continuance of the war, but, in an uncivilized country with an undisciplined Army, this will not be the case; the continuance of the war will depend a great deal more on the spirits of the people and on the fidelity of their leaders to the national cause than on any such trifles (in their estimation) as want of cannon or scarcity of ammunition. Great popular enthusiasm may keep even the most undisciplined Army together for a time, but there must always be a limit to the concentration of an unorganized Army; no men will stay together without food, and the supply of food requires a certain amount of organization, and of money or money's worth; therefore, be his cause as popular as it may, a leader cannot hope to keep undisciplined Forces together longer than his means will last. And while all these searching enquiries should be made with reference to the enemy, they should also be asked of ourselves, for, of course, they must act for or against us in the same way as they do for the enemy.

Should any point of importance have been neglected in this detail of a reconnoissance, the person entrusted with this duty will do well if he adds as many more details as he thinks will aid to a right comprehension of the peculiarities of the country.

There are other considerations which exert great influence on

The military ardour of the inhabitants.

the conduct of a campaign, and should therefore be thought of. The passions of the people, if fully roused and properly directed, form one of the most formidable obstacles to the subjugation of the country, and if it proves impossible to enlist these on our side, nothing should be done wantonly to outrage them. Everything possible should be done to allay the patriotic ardour which their leaders endeavour to raise, and emissaries should be sent to soothe their feelings with assurances that there is no intention on the part of the invading General to interfere in any way with their religious or social liberty, but merely to seek from their rulers reparation for injuries received. Napoleon applied this

Of the importance of inducing the enemy to divide himself.

system in all his first campaigns, but in none more than in his invasion of Egypt, where he identified himself with the people in opposition to the Mamelukes to an extent which, however reprehensible in a moral point of view, was, military speaking, most successful. And in this lies the secret, to divide the enemy into two parties, and make the interests of the mass differ, or appear to differ, from those of the few in power; to raise a party in the country, taking advantage of every difference of feeling in either religious or civil matters; and where is the country so united as to offer no opportunity for such attempts? Few, perhaps none, are. In Afghanistan, there are the Kuzzilbashes to fall back on, if the Suddoozyes failed us; in China, the Chinese; and in India, does not every Mahomedan offer one stone for the foundation of discord in the heart of the country? It may not, of course, be always advisable so to divide the enemy; it may sometimes be better for several reasons that the bundle of faggots should be *en masse*, than crushed in detail.

On the other hand, everything should be done to raise the

The necessity for efficiently preparing our Army.

efficiency of our own soldiers, by subjecting them beforehand to practice of the style of warfare in which they will soon be engaged, by nerving them gradually to the hardships they will have to undergo, and by equipping them in the manner most suited to the climate and features of the enemy's country.

If the information detailed above is procured beforehand, all that can be done in this respect to ensure success will be done; and it is not to be doubted that it is necessary, for without it a Government can but be like a blind man nervously and unsafely groping his way

through a crowded street, or like a ship without a rudder trying to make good a port surrounded by rocks—for information is, so to speak, the rudder of all military success.

Circumstances beyond the scope of treatment in a short essay like this will determine whether it is advisable to act on the offensive or defensive, but it may be well to say a few words in consideration of their respective requirements.

The *defensive* has many real and many more apparent advantages. Among the apparent advantages may be classed the supposition that innumerable impregnable positions abound in mountainous countries; but a careful study of Hill Warfare and of the peculiarities of such countries will convince that, far from good strategic positions being numerous, they are less so than in the plains; for though these positions often appear at first sight to be quite unassailable, it will be generally found that they are untenable against a scientific enemy, there being few mountain posts which cannot be turned, or which do not offer facilities in aid of an attack, in the shape of their too great extent, their cramped nature, or on account of their being commanded, or presenting irregularities of ground which favour an assault. The patriotism and valour which (from the numerous well authenticated instances of highlanders defending their rugged fastnesses with determined and successful gallantry) is always attributed to them would also induce a belief in the advantages of the defensive, were it not that, if the gallantry of mountaineers is well-known, their irregular and undisciplined mode of fighting is also proverbial. The careful student of such warfare will see how often these hitherto impregnable positions, this undaunted valour have succumbed to a judicious use of the principles which have guided all great Generals in like circumstances; and though he will render all admiration due to the undoubted gallantry which has misled others, he will not subscribe to any unqualified approval of the defensive. However, it must be allowed that the defensive has many great advantages, which, if appreciated at their right value, assisted by a disciplined Army, and directed by an able General, may well render a mountainous country impregnable, for though the tenable positions are not so numerous, they are more decisive than those in the plains, and the enthusiasm of the inhabitants, if raised to its highest pitch and directed to efforts of which it is capable, may be rendered most useful in furtherance of the campaign, provided always none of the approved maxims are violated, and the defence is not allowed to become a merely passive one.

The advantages of the *offensive*, on the other hand, are also numerous, though, it must be confessed, they are also dangerous, if not directed with firmness and energy. Being in possession of a portion of the enemy's country, an Army acting on the offensive has its own resources increased, while those of the enemy are proportionately decreased, and the morale of the invading Army becomes far superior to that of the invaded, which is subjected to the devastation and demoralising influence surely caused by the presence of a foreign Army, and the offensive has also the incalculable advantage of being able to choose its own point of attack.

It is not, however, to be supposed that, even were it possible, it must be always advisable to abide by either one or the other for a continuance: great and unexpected losses by sickness, greater and more skilled resistance than could have been foreseen, may induce a General on the offensive to change to the defensive; and on the other hand a defensive war may have been so far successful as to make it proper to assume the offensive; but to make these changes at the right moment requires the talent of a real General.

The mode of taking the offensive will vary according to the genius of the General; he will either risk much to gain all by a few decisive strokes, or he will advance slowly and surely to his objective point; it would be unprofitable to discuss the relative merits of each, as the application of either depends, as has been said before, on the peculiar genius of the General; also, on the ability of his opponent, the courage of the enemy, and on the difficulties in the way of attaining to the objective points.

The defensive has also two modes of conduct; but these do not also admit of a doubt as to preference; one is termed the *offensive defensive*, and consists in never awaiting the assaults of the enemy, but always taking the initiative by strong attacks; the other is the insanity known as the *passive defensive*, that which tamely awaits all the dispositions of the enemy for his destruction. Perhaps no instance can bring the relative advantages of these systems more home to an Indian reader than the cases of Elphinstone, at Cabul, and Nott, at Kandahar; the first attempted to hold his own by a tame defence, and was destroyed; the second marched out, and attacked every body of the enemy that assembled in his vicinity, and, after the first few examples, enjoyed almost perfect immunity from them.

It is nowhere more difficult to lay down beforehand the plan of a campaign than when the scene of it lies amongst mountains; but it must always be necessary to choose the *objective points*, the *base*, and the *line of operations*. The information detailed above will assist us in a consideration of these points, and it is of the utmost importance that they should be carefully determined.

What, then, are the points which, once in our possession, will thoroughly convince our enemy of the futility of resistance? It may be the capital of the country, if it is notably connected in the minds of the people and of the chiefs with the seat of supreme power; it may be a fortress which, strong or not, has the reputation of being impregnable; the possession of a celebrated defile may induce the enemy to form that opinion of our prowess which is followed by submissive thoughts; in the case of a country over-run with priests and inhabited by a superstitious people, it might well be some shrine of peculiar sanctity; or, in warfare with a set of wild inaccessible savages, the objective point might well consist in the opportunity to collect them all together, and there give them a complete, overwhelming and crushing defeat, which will convince them of our superiority, and make their very hearts sicken at the sight of our soldiers.

In addition, those points which are familiarly known to tacticians as *decisive* and *strategic* may be well included in our considerations, for, though they do not strictly speaking come under the head of objective points, they may all have an influence on the fate of the campaign, and, if not objective at the outset, they may become so during its continuance, and therefore all important defiles and fortresses, all populous cities and fertile districts, which the enemy could make use of to prolong the war, are *objective points* which should all be thought of, though the possession of all need not necessarily be aimed at. We are afraid that this clear settlement beforehand of what we really want is very much neglected, and therefore we have considered it necessary to detain our readers; there is no doubt that no General, however talented, can conduct a campaign to the satisfaction either of himself or of his Government, unless he is in possession of their wishes on this subject; it is, therefore, really very important to come to a clear understanding beforehand. But it is not to be regarded as certain that Asiatics will give in even after they have lost the points without which theory is pleased to suppose that a war can hardly be

carried on ; the irregular efforts of an undisciplined Army are not bound by rules which theory dictates as the course of an organized resistance, and it is often found that just when all the objects of the campaign appear to be gained, the resistance becomes most troublesome and most difficult to subdue.

The *base of operations* should also be carefully selected, as much of the success of the campaign will depend on the aptness of its position, and the difficulties are greatly increased by the necessity of changing it after its commencement. Being the place or district on which the Army will have to depend for everything that it can want, it behoves the Government to take particular care that the arrangements for supplying the Army with reinforcements, provisions, ammunition, and stores of every sort are as perfect as possible, and also that, in the case of a retreat becoming necessary, the Army shall find safety on arrival at the base. Before the final advance of the Troops, arrangements should be made for the collection of an ample reserve of supplies, ammunition, and baggage animals, &c., and an efficient and adequate reserve of Troops should be held in hand in case of a reverse in the front. This last injunction was well attended to during the Ambeyla campaign, for, had that "little war" assumed more formidable proportions, there was a very strong reserve to fall back upon. It is better that the base should be covered by some strong natural or artificial obstacle, such as an unfordable river, a range of hills, a strong fortress, or a difficult marshy or jungly tract, and the point of junction of the converging routes from front and rear should be guarded against a *coup-de-main*; and every care should be taken to improve the roads from the country in rear to the Army in front, so that delay should not take place in affording support to the latter. If the Army has to advance to a great distance from

Supplementary bases. its primary base, it will be found absolutely necessary to establish other temporary bases in front at short and convenient distances, where depôts of supplies and strategic reserves can be placed ; but in forming these extra bases great care should be taken to avoid making too many detachments, as the advantages of them are not worth the risk caused by a too great dissemination of Troops. Other bases should

Supporting bases. be formed in rear of the primary base, to form points of support in case of reverses in the front, for, however apparently insignificant the enemy may be at the time, it is not wise conduct in a Government to neglect

any precautions which the experience of war has shown to be necessary.

The choice of a line of operations, depending as it does on a variety of circumstances, is very difficult.

Lines of operation. These are, the situation of the objective points, the position of the base, the physical configuration of the theatre of operations, and finally, the disposition of the enemy's Troops. In a mountainous country, the choice must, of course, depend, in a great measure, on the nature and direction of the ranges; a line, which may seem at first peculiarly favourable, often proves to be simply impracticable, on account of the intervention of a rugged range of mountains, a belt of unhealthy jungle, or an impassable river, and the line must, therefore, conform to the means of crossing these natural features, and again, one of the necessities for a *good* line of operations is that it pass through a district which offers facility for the collection of supplies; and a line, which is favourable in a military point of view, and otherwise free from all impracticability of route, may prove simply impossible, on account of the barrenness of the country through which it passes; and finally, the positions taken up by the enemy, must always exercise an important influence on the direction of the line of operations, as the first maxim in war is to assail our enemy's weakest point with our strongest Forces; consequently, if his Forces are disseminated, and cannot be easily concentrated, from his being on exterior lines, the line of operations must be directed on his centre, or on such other point as will enable us to bring masses which will prove decisive before aid can arrive. But if the enemy, trusting in the strength of his position, is concentrated on the principal route into his country, the line of operations should be so directed as to turn one of his flanks and place ourselves on his line of retreat, and thus force him to evacuate his position and fight a battle, with the incalculable disadvantage of having no safe line of retreat open to him, provided always that, in attempting this, we do not expose our own line of communications.

A system, of which the usually inferior nature of our local foes makes us too fond, is that of working on

Double lines of operation. double lines of operations; they are very dangerous, being a complete violation of the maxim in Mountain Warfare which inculcates the non-dissemination of our Forces, and the only possible occasion on which they are allowable is when we are in possession of sufficient numbers to place each of our

detachments on an equality with any Force the enemy can bring against it, and when we have the use of interior lines. Therefore, if our lines of operations must be double, they should also be interior and converging.

There being enough difference between the operations necessary for passing a range of hills and those which are proper in a wholly mountainous country, it is better to treat them as distinct operations. The separation will also make the matter clearer.

Operations necessary in forcing a single range of hills.

There are numerous countries, crossed at some point by a single range of hills, which must be included in the theatre of operations, as it may be necessary to force and hold one or more of its defiles, and this is the operation now to be considered. There will be a greater difference between the mode and difficulty of forcing the range, should the passes be few, and the enemy have possession of interior lines, than if the defiles are numerous and the enemy are placed on exterior lines; and therefore a most complete and detailed report of all the routes by which the range can be passed should be furnished to the General, as, if he is only informed of the few frequented passes, he will be deprived of just so many chances of effecting the passage, as there are routes with which he is unacquainted. But it is a well-known fact, that the passes through all ranges of mountains are so numerous as to make it quite impossible for any Army to hold them all, and, if this deficiency cannot be made up by the use of great activity on interior lines, the assailing Force, if decently handled, and not of absurdly inadequate numbers, has always a decided advantage. The Force should be assembled at some point or points of the range which will give it the use of interior lines, and which will leave the enemy altogether in the dark as to the real point threatened, and the greatest trouble should be taken in deceiving the enemy as to our intentions, and inducing him to disseminate his Forces, or else to concentrate them at some point we have no intention of attacking. General Chamberlain's feint at the Durrun Pass in 1863, while Colonel Wilde was already advancing through the Ambeyla, without the semblance of opposition, is a happy illustration of the immense advantage of this manœuvre; while, if any example of the folly of neglecting it is required, that of the organised and successful resistance of the Afghans to the previously loudly-proclaimed intention to force the Khyber Pass in 1842, is as good as can be offered. As a rule it is undoubted that no attempt should be made to force the main pass, simply because the enemy will there have

prepared his most formidable means of resistance, and it would only be playing his game to do so. There is probably no pass in the world which cannot be turned in some manner or other, and in the neglect of the maxim which directs that none which can be turned should ever be attacked in front, lies the secret of the difficulty we have always experienced in forcing the Khyber Pass—difficulties doubtless really great, but which have been so absurdly exaggerated that most people now look on any project for forcing the Khyber as an emanation from the diseased brain of a madman, while the contrary is the fact; this pass so dreaded is simply untenable against a scientific enemy, for strong as it undoubtedly is to a front attack, it can be turned by no less than five practicable routes, viz., the Teera, Abkhana, Tatar, Kadapa, and Kafir Tungee, and it must always remain a matter of passing wonder, to those who know this and who understand the rules of Mountain Warfare, why we should invariably have insisted on running our heads against the front of it when its flanks have always been so vulnerable. It were useless and unprofitable to suggest ideas which are likely to be found useful in deceiving the enemy as to our intentions, as if the intelligence of the General does not furnish him with them, they are to be found in abundance in history; but one thing may be said, that whatever the stratagem is to be, the General should be fearful of letting any one into his secret; a secret entrusted to the tender mercies of half-a-dozen Staff Officers is not likely to conduce to the success of a stratagem. Where would have been the success of Napoleon's stratagem to secure the unmolested passage of the St. Bernard, or of Marlborough's to force the lines of the Mehaigne, if either had divulged his intentions? In the first case it was evident that unless Massena was soon relieved, Genoa must fall, and it appeared probable that the way of doing this would be by a direct attack on the Austrian besieging Army; Napoleon was also apparently of this opinion, for he pompously gave out that he meant to relieve Genoa with the Army of Reserve which was to assemble at Dijon. The Austrian spies, eager to prove the truth of this intelligence, at once repaired to Dijon, and there found that a Force was assembling, but that it was so inconsiderable and badly equipped that it appeared quite inadequate to so dangerous a service, and they consequently formed the opinion that it was a mere device to frighten them into raising the siege of Genoa. Marshal Mélas, the Austrian Commander, secure in this belief, quietly resumed his siege; and at the very moment that Genoa, after a most heroic resistance, had capitulated,

and he was congratulating himself on the success, the stratagem of Dijon was being matured, and the greatest captain in the world had arrived in his rear with 60,000 men. Poor Mélas! instead of a glorious success, Marengo was the result to him.

Such reports will aid the preliminaries in a great measure, but it will also be necessary to make actual feints at other than the real point of attack; if this is done, success is nearly certain, as no lines in the world which have been treated in this manner, and accompanied by a vigorous assault have ever proved impregnable, and it is most important that the General Officer entrusted with the conduct of such a campaign should be convinced of the fact that, if he has the possession of interior lines, he has the game nearly all in his own hands, the enemy can hardly successfully resist him, for it becomes a mere matter of calculation to ascertain what point of assembly will enable him to reach one of two or more passes before the enemy can concentrate on either. This fact is so true that not even the genius of Wellington could refute it successfully in the Pyrenees. A glance at the map of this range, and a careful study of the relative positions of Soult and Wellington, will well repay a military reader, in addition to convincing him on this subject. The theatre of operations, "relates Napier," was a trapezoid, with sides of from 40 to 60 miles in length, and having the fortresses of Bayonne, St. Jean Pied de Port, St. Sebastian and Pampeluna, all in possession of the French, at the angles. The great range of the Pyrenees ran diagonally across the theatre, and on either side of it a number of rugged spurs jutted out, forming a series of valleys as follows:—On the North side were the Val Carlos, Val de Baygorry, the Aldiudes, and the Bastan, and on the South the valleys of Orbecita, Roncesvalles, Urroz, Zubiri and Linz. The French line extended on the North from St. Jean Pied de Port to the mouth of the Bidassoa, and was thus disposed; Clausel held the left with 16,000, D'Erlon the centre with 18,000, and Reille the right with 16,000, while Vilette had the reserve. The English line, also mostly on the North, extended from Orbecita to Irun; on their extreme right was Byng with 5,000 men, in the Aldiudes was placed a brigade of Portuguese under Campbell, while Hill, with part of the 2nd Division and some Portuguese, held the Bastan, and Wellington, thinking that Soult wished to relieve St. Sebastian, had made his Army lean rather towards his left, which was also backed by a strong country. The communications of Soult from right to left of his line were excellent, while those of Wellington were difficult and

passed over fifty miles of mountainous country, and the latter, therefore, to obviate this danger as much as possible, had placed Cole's Division at Viscayret to support the right under Byng in the Roncesvalles, and Picton at Olague to form a reserve, to Hill in the Bastan or to Cole. On his left Wellington was very strong both from the nature of the country and from his being able to concentrate quicker on it than Soult, thus any attempt of the latter to operate for the relief of St. Sebastian would be most dangerous. But that General had no such intention, believing that Pampeluna was in extremities and St. Sebastian was not, and perceiving the weakness of Wellington's right, he determined to operate by his left for the relief of Pampeluna, and, to deceive the English as to his real intention, he vexed their left by ordering the construction of bridges over the Bidassoa at Biritru, at the same time cautiously relieving Reille by Troops from Villette's reserve, he directed that General towards St. Jean Pied de Port; and, though considerably delayed by the badness of the roads, he soon concentrated 60,000 men opposite the passes of Roncesvalles and Maya, that is, Clausel had 16,000 men to attack Byng's 5,000, and, before the latter could be reinforced by Cole, who was twelve miles off, 16,000 more under Reille, advancing along the spur which divided the Val Carlos from the Aldiudes, would have arrived, cut Campbell's retreat off, and seized the passes by which Hill was to concentrate on the right. Thus the allies would be forced to abandon their ground and retreat on Olague, where Picton was, but even when joined by him they could only bring 17,000 men against 32,000 French under Soult. But this was not all of that General's admirable plan, D'Erlon with 18,000 was to force the pass of Maya, drive Hill's weak division back, and operating by his left, interpose himself between Hill's, the 6th and 7th divisions, and Picton, and then join Soult, who would thus have 50,000 men under one leader who had well thought his plan out, against 18,000, if Hill failed to join Picton, and 27,000, if he succeeded; and in either case, under Generals brought suddenly together with no concerted plan. No instance can show in a clearer light the advantages which the assailing Force has in forcing a range of mountains, and we have chosen it in preference, because the defence in this case was conducted by Wellington in person, and the after facts of this campaign show that not even his great talents could have saved him from being completely out-manceuvred by Soult, if that able General's combinations had not been marred by the delay caused by the inclemency of the weather, if the fog which

arose during Clausel's attack had not aided Byng's defence in an extraordinary degree, and if he had been properly supported by his subordinates, if Reille and D'Erlon had acted with more vigour and in consonance with his orders. We observe that a writer on Mountain Warfare has given Wellington's position as one which fulfils the requirements of such positions, appearing to found his opinion on the final success of Wellington; but those facts scarcely show that Wellington's position was a good one, but rather how the greatest combinations in war are often marred by the most unforeseen accidents and faults in the execution; that Soult deserved better success is proved by the fact that Wellington's great mental resources were severely tried to retrieve his false position. It might be presumptuous to offer an opinion as to whether Wellington's position was the best which could have been taken up or not. It is merely asserted (what is believed to be an indisputable fact), that, at the commencement of the campaign of the Pyrenees, Soult's position was strategically the best. Wellington's dispositions on this occasion, shew in the most clear light what extraordinary mental talents, decision of purpose and energy he must have possessed, to have enabled him, when opposed to Soult, the ablest of Napoleon's Marshals, so to turn the disadvantages of his position to good account as to cause the French General to retire precipitately, baffled at all points, and only saved from complete annihilation by one of those accidents so common in war, which must bring home, even to the most careless observer, the folly of supposing that the wisest plan of man's intellect can prove infallible, and the truth of the proverb "*L'homme propose, mais Dieu dispose.*" The lines of Torres Vedras may be cited as an instance of the successful defence of a range of hills, but they were not open to the objections which have been advanced to the English position in the Pyrenees, for Wellington could concentrate a larger Force at any one point than the French could bring to attack him; and it is to be doubted if even these famous lines could have withstood a vigorous assault if defended by a less skilful General. Soult's brilliant employment of interior lines related above cannot be followed by a better example of the use of stratagem in aid of an attempt to pass a range, than that of the passage of the Balkan by Diebitsch in 1839. Before the hard-won battle of Kulewtscha and the capture of Silistria, "relates Chesney," it was the intention of that General to proceed with the siege of Rutschuk, and then maintain the line of the Danube till the spring; but the great effect of this defeat on the spirits of the Turks, and the

reports of the general dissatisfaction prevailing at Constantinople, suggested the adoption of more decisive operations. Encouraged by these circumstances, Diebitsch determined on the daring step of passing the Balkan in preference to undertaking another siege to secure more effectually his line of communications. His plan being formed accordingly, he proceeded, on the arrival of the Troops hitherto engaged in reducing Silistria, to make a formidable demonstration against Schumla, and so closely did he invest it, that the Grand Vizier, in expectation of an immediate assault, re-called a portion of his Troops from the mountain passes to aid in the defence of a position on which, in his opinion, everything depended. The defenders of the Balkan being thus seriously diminished, it only remained to attempt the passage before the Grand Vizier had time to discover and remedy his fatal error ; and in order to complete the deception, 10,000 men under Krassowki were directed to press Schumla, whilst the main force, with an effective of 30,000 men, feigned a retreat towards Silistria, but in reality with the intention of crossing the Balkan. On reaching Yeni-bazar, a distance of about six leagues from Schumla, Diebitsch suddenly, and to the Turks most unexpectedly, turned to the right, and making straight for the defile of Kamtschik, defeated the small detachments left there, and effected the passage of this formidable range almost without opposition.

These instances place in a very clear light the proper method for forcing such barriers, and show that the enemy can scarcely prevent such attempts, and that the assailant has the game in his hands if he will only play it boldly and warily.

The direction to be given to the line of operation after passing the range should be such as to place us in command of the enemy's line of communications, provided always this can be done without endangering our own : these manœuvres, which are the secret of all success in Mountain Warfare, will give us bloodless advantages, which could only have been gained otherwise with immense loss, for the enemy cannot possibly continue to hold on in front while we are marching on his line of retreat.

But much also depends on the manner in which the details of the forcing operation are carried out ; an operation, which is calculated by every rule to become a brilliant success, may prove a positive failure by the stupidity, rashness, inactivity, or faint-heartedness of the Officer entrusted with the command, and we shall therefore say a word on the details of these operations hereafter.

Operations in a wholly mountainous country are very much more difficult than those called for in the passage of a single range, because, being more extensive and of longer duration, the difficulties increase in proportion to the number of ranges or the extent of the mountains which have to be traversed before reaching the objective points.

The question whether the control of the valleys necessarily follows from the possession of the mountains, or that of the mountains from the command of the valleys, is one which has been frequently argued by various authorities, and as a settlement of the difficulty is very important to the comprehension of the subject, we will shortly discuss the merits of both opinions. It is asserted, on the one hand, that the possession of the mountains must necessarily give that of the valleys, because the Army in whose hands they are, is in possession of all the most commanding positions in the country, from which it can descend at pleasure to cut its enemy's communications, while the enemy, to effect anything against it, must assault under the disadvantage which a Force is liable to in attacking impregnable heights; but, on the other hand, it is urged that however formidable this system may appear in theory, it cannot hold good in practice, because, granting the possession of the heights, facts prove that the difficulty of subsisting a large Force in such barren and inhospitable regions is so insurmountable as to make it certain that Troops so placed would soon be forced to give up their hold on the mountains in order to obtain means of sustenance from the valleys, and then they would be placed at the disadvantage of being defeated in detail before they could deploy into the valley beneath. And again, it is said that while the valleys give the command of the resources of the country, they also contain the best roads which lead in the most direct manner to the key of the country. It is only necessary to say that this last is the opinion of the masters of the art of Mountain Warfare, Massena, Lecourbe, Molitor, and Dessoles, to convince that it must be the right one. But if any should feel disposed to doubt the accuracy of this opinion, he should study carefully the causes of all the successes in the campaigns of 1799 in Switzerland, which will thoroughly convince him of the fact that the valleys should be regarded as the kernel of the nut, the mountains as the shell.

However, a careful study of all the positions which can be taken up among mountains will enable better to judge of the force of this argument. First, as all the principal roads of his country run through them, the

Of positions taken up in several important valleys.

enemy might take up his position in the most important valleys ; by this plan he certainly makes sure of having a fight somewhere, but his Forces are disseminated in a needless manner, and not being bound to penetrate by any particular valley, we can choose our point of entry, and suddenly overwhelm the detachment of the enemy posted there ; and, as his detachments are separated by difficult ridges, it will be quite impossible for him to concentrate in time to prevent our reaching the key of the country. If the enemy has thus disseminated his Forces, there can be no doubt that the best plan is to enter that valley with the mass of our Army which will lead us soonest to the objective points, whence, issuing out on his detachments as they arrive to attack us, we can beat them in detail. The defects of a position taken up in the valleys are to be measured by the distance the detachments of the enemy are from the points of most importance to him, and by the difficulty he will experience in concentrating on these points. Thus it will be seen that the folly of occupying all the valleys with detachments which can be overpowered in detail at any point by an enemy in concentration, is only to be equalled by that which would direct several columns by several valleys against an enemy in concentration at the central point ; the only possible excuse for either is that the detachments be each as strong as anything the enemy can bring against them ; but as this argues a Force of extraordinary magnitude, it is certain that no enemy would care to face such odds.

Of course if the enemy is in detachments, there is no reason why a certain dissemination of force should not be advisable, provided always that each of our detachments is stronger than that to which it will be opposed, and that we can concentrate on any point sooner than the enemy can. Lecourbe, in command of Massena's right, in the campaign of 1799 in Switzerland, was entrusted with the dispositions for the capture of the St. Gothard, and he employed no less than five detachments, but then the Austrians were also in detachments, each of which were weaker than those of Lecourbe ; while that General conducted his Forces by converging lines which would enable him to concentrate in front of the St. Gothard, the decisive point, before the Austrians. Need it then be said that, if either in the offensive or defensive, detachments are used, they must be on converging and interior lines ?

The enemy may have adopted another plan. In the supposition that we mean to penetrate by it, he may have concentrated

in one of the principal valleys ; here, though he will not be liable

Of a position taken up in the principal valley. to the dangers of dissemination, he will be placed altogether in a false position, inasmuch as, being able to choose our point of entry, we can entirely avoid the valley in his occupation, and, merely engaging his attention by feints, can make for our objective point, a manœuvre which he cannot prevent, if we can only get a slight start of him. Should the enemy have taken up his position on several important heights, guarding the several important roads into his country, or should he have concentrated on the most important heights, the case is not altered ; strategically his position is just as bad, and, whether he be in several valleys or in one, on several heights or on one, his position is faulty in exact ratio to the difficulty he has in covering his objective points.

It will be proper now to say a few words on the tactical merits of positions among mountains.

When an enemy has taken up his position in a valley, he must

Of a position taken up across a narrow valley. do one of two things, viz., either place his Troops right across the valley to debar the progress of an enemy through it, or else take up a position along the centre of it.

In this case it is evident, if he has done the first, his position is open to very serious objections,—firstly, because he is liable to attack from the heights which command both his flanks ; secondly, because his line will be divided by the stream which almost invariably runs through every valley ; thirdly, because he is liable to be turned by Forces sent along the heights on either side to meet at the debouchment of the valley in his rear ; fourthly, because the further he is driven back the more fatally will the first and second objections operate on him.

A position taken up across a valley is faulty in proportion to

Of a position taken up across a broad valley. the breadth of that valley ; if the heights on either flank are very close, it must of course be untenable, but if the valley is of sufficient breadth to obviate command, a position may be taken up which is tactically good, for it is then similar to a position taken up in a plain, and if the enemy has taken the precautions to secure the defile in his rear and to gain early intelligence of any attempt to turn the valley, his position may also prove strategically good.

The other plan is, on the whole, more advisable, for the stream

Of a position taken up along a narrow valley. which before cut the enemy's Force in two will now cover his front, and thus offer a fair

obstacle to a front attack, while his flanks will not be exposed. This position cannot safely be attacked in front, because the enemy, having knowledge of all the points by which we could pass to his attack, will be able to concentrate his Forces on the threatened point before we have time to debouch and deploy, thus beating our Forces as they come up, and if we once commence such an attack we must go through with it, with the certainty of the above disadvantage, or else retreat in face of a superior Force. And if we attempt to attack him by a lateral valley, he could as above keep us in check with his concentrated Forces, while he also sent a strong detachment to cut off our line of communications.

But here the advantages of this position cease ; if we commit the egregious folly of attacking an enemy in the above manner, we shall at all events, by the example of our failure, furnish an example to posterity of the imbecility of the course, for if the valley is narrow and under command, any position in it can be made untenable, and though it is safe against a flank or front attack, it is as liable as the other to be turned and cut off from the decisive point.

Of a position taken up along a broad valley. And so, though a position taken up in a broad valley, and not under command, may be tactically good, other points require attention to make it strategically so.

The enemy may have taken up a position in the valley, and in order to obviate the danger to his flanks he may have detachments on the heights ; but it is obvious that this entails too great dissemination of force ; his detachments will be too far apart to afford mutual support, and too weak to take the offensive with success, while he is not less liable to be turned, without the hope of being able to prevent it, than in the above-mentioned positions.

There is yet another plan which might be adopted by an enemy, which is to take up strong positions in the mountains, and leave merely small posts of observation in the valleys. This would, at first sight, appear to be a good disposition, as in order to attack the enemy our communications would appear to be endangered ; but a little reflection shows that, to act on our communications, he is liable to a defeat from our concentrated Force, and that we can easily defeat his posts of observation, and, having the advantage of level ground, can seize his lines of retreat before he can make his way over the hills to prevent us.

Thus it is evident that in all these plans the assailing Force has a decided advantage ; but there is one other which, if adopted by

the enemy, will reverse this order of things. A study of the general features of mountainous countries shows that there is always some point where several of the important valleys meet. This may be a mountain from which the streams which eventually form these valleys take their rise, or it may be the point of junction of a number of streams, and consequently also of valleys ; but whichever it is, it is certain that in all mountainous countries this feature does exist, and forms the key of the country. This point, then, being

The advantages of a central position. central, offers to the enemy the means of keeping his Forces in concentration without the fear of being turned, of acting on the communications of his enemy without any risk to his own, and by the use of a vigorous and initiative offensive-defensive, of assailing his enemy at those moments when, harassed and fatigued by his march through a difficult and barren country, he is ripe for defeat.

It must, therefore, be allowed that, as far as the preliminary positions of the Armies can be said to augur the fate of the campaign, that on the defensive has the best chance of success, and if, recognising the strength of his position, he incessantly annoys and harasses the assailing Force by a guerilla warfare, well directed and aided by detachments of Troops under picked leaders, and quietly waiting till our attack is sufficiently declared, and till our arrival within his reach, he hurls his fresh Troops—who are elated with the success of their irregular companions in arms—on our Forces, fatigued with ceaseless watching and emaciated from scanty food, it is more than probable that he will defeat us. In this case, which is one we are not likely to experience in India, we must endeavour to keep our Force well in hand, make as few detachments as possible, take the guerillas for what they are worth, do all possible to arrive at the decisive point in compact order, and keep a stern determination in our hearts to win or die, as indeed we must, for this position of the enemy is one which will make us or mar us. Every attempt should be made to induce the enemy to leave his position, and, should we succeed, he should be drawn away as far as possible, so as to admit of the march of another detachment to seize by a different valley the position he has so foolishly abandoned. Should the enemy commit the mistake of trying to maintain passive defence, he will lose one of the chief advantages of his position, for there is nothing truer in Mountain Warfare than that, the Troops being nearly equal, the attack has many more chances of success than the defence. But it is certain that if we engage in an enterprise of this sort, we must be prepared for steady advance, as, if it

is once begun, there is more to be lost by a retreat before a victorious foe than by a determined advance against an enemy who has been cooped up in a confined mountain position ; therefore, never let us retreat while hope remains. An advance among hills is a difficult operation ; a retreat is an almost certain disaster. A Force ought not to allow itself to be delayed by the efforts of the guerillas which the enemy will direct against it ; such appear formidable, but are not so in reality ; and no better proof of this can be offered than the fact that, though immensely lauded, the guerillas of Mina, Rovira, and the Empecinado never effected anything serious against the French arms in Spain.

We shall now say a word on the details of the operations we have discussed above, which apply more to the senior than to the subaltern Officers of a Force.

The choice of positions is an important, and, contrary to the generally received opinion, (which is very apt to suppose that impregnable positions must be most numerous amongst mountains), also a very difficult duty. A position is a situation taken up by a Force for some military object either with an offensive or defensive view ; and as the choice depends on so many contingencies, which require a considerable amount of intelligence and experience, the selection should not be carelessly entrusted to any Officer ; other requirements than the nature of the ground determine approximately where the position should be, and among these may be ranked the nature of the operations, the strength of the Army, the situation of the objective points, and, finally, political considerations may require that certain posts be occupied. Should the operations under consideration be defensive, then a strong defile, an unfordable and difficult stream, a commanding height, or a well-placed town would seem to be fit sites to select ; but, if they are offensive, some spot which will enable us to place the enemy at a disadvantage by acting on his communications, should be chosen. A political position may be taken up with a view of keeping certain evil-disposed people in check, or of encouraging others who are well disposed. Therefore, in selecting ground for a post, it is necessary always to bear in mind the object in view, and then to go over the whole of the country which appears to be conducive to this object, carefully studying all the details of the ground.

The necessary requirements of a good position are—1st, that its size and shape are such as to render it capable of retention by the Troops who can be spared

Requirements of a good position.

for its defence ; a too extensive is as bad as a confined position : a vigorous attack on some slightly guarded point, accompanied by a feint in another direction, will generally carry the first, while the least confusion caused by loss, &c., will often occasion the overthrow of the second. 2ndly, that it is not commanded by any height which will enable the enemy to cause its evacuation. This, of course, depends in a great measure on the armament of the enemy, as in a war with Afghans or Ghoorkhas ; a position need not be abandoned because it is commanded by a height at the range of an Armstrong gun. 3rdly, the immediate front and flanks should be well covered by obstacles or be capable of being rendered so ; but, beyond this, they should be open, not too easy of access, and thoroughly exposed to our fire ; and if the position in question is merely an advanced post, the rear should be open for the retirement of Troops or the arrival of supports ; and with reference to this last, it may be observed that no such position can be considered a good one which is placed so that supports cannot arrive quickly. The instances of the disasters which have occurred from the neglect of this maxim are most numerous, but the cause of the loss of the Col de Maya Pass affords such an excellent one of the consequence of the neglect of it that we shall furnish it to our readers. General Stewart having the three passes of Aretesque, Lessesa, and Maya to defend, had one picket of 80 men in rear of a round hill, which entirely concealed the enemy's movements in front of the Aretesque Pass. The nearest support to this was four Companies of Light Infantry, which were placed more than a mile down the hill, while the rest of his Brigade was dispersed in different directions, but none of it nearer than three miles. No attempt was made to gain early intimation of the enemy's movements by the use of patrols or vedettes in front of the round hill, and the consequence was that when the French advanced in force they surprised and drove back the picket of 80 men, and though the support did all that was possible to hold its ground till aid should arrive, and though the Regiments turned out promptly, and arrived as fast as they could, the pace they came at, the distance, the ruggedness of the ground, all told against the possibility of their doing so in order, and their efforts to dislodge the French from the summit of the pass were unsuccessful. General Stewart was, at the time of the attack, absent at Elizondo, twelve miles distant. The loss of this pass might, if D'Erlon had acted with vigour, have caused the whole of Wellington's left to be cut off from his right, and that this did

not occur was no fault of General Stewart's, who made the best possible dispositions for the furtherance of it. The communications within a position must be free, and the defenders should at once be made acquainted with them, and it is of course indispensable that there should be an abundant supply of water under command.

The obstacles most favourable and most easily furnished in a mountainous country are stockades, "sangars," abattis, ditches ; but as an intelligent Officer can turn almost anything to account in strengthening his post, it were superfluous to dilate on this subject.

In the defence of a post the best method appears to be to unite the offensive with the defensive, that is, to receive an assailant with as heavy and destructive a fire as possible, and, when he arrives, blown with the pull up and shaken by the fire, to hurl a determined bayonet charge on him ; obstacles, which will seriously interfere with his advance and will not afford him cover from our fire, should be carefully prepared, and detachments of marksmen sent to place him under a cross-fire during the whole time of his attack. These bayonet charges should be executed by detachments taken from the post, and they should be most vigorous, if possible unexpected, and directed on the flanks ; but it must be borne in mind that once having driven him back, these parties should halt, and on no account attempt to pursue down the hill, while every facility should be given to them to re-enter the work when necessary. There are some posts, like the Crag picket at Ambeyla, which rise so abruptly out of the surrounding ground as to afford facilities to the enemy to collect in numbers beneath the parapet preparatory to a final rush, and as any attempt at musketry fire entails great loss of life, all posts so placed should be furnished with hand-grenades or small $4\frac{2}{3}$ -inch shells, to throw over the parapet into the middle of any such assembly of the enemy. The most stringent efforts should be taken to prevent the useless waste of ammunition, so common when the firing has to be independent, for it is most unsoldierlike conduct. Let us in this take a hint from our late gallant enemies the BOONERS ; let our soldiers, as theirs do, make up their mind to "bag" a man for each shot, or at all events think themselves clumsy if they throw away more than three shots on one man. This careful firing only requires practice, and we see no reason why either Englishmen or their gallant allies the Sikhs should not be as capable of it as any other men.

Defence of posts.

More mountain posts are taken by sudden daring surprises, than by any other mode of attack, and therefore the greatest vigilance should be maintained within the post, and sentries should be thrown out on all sides to give warning; these sentries should remain silent till an attack is actually threatened, and they should be protected, by some obstacles, from being stabbed suddenly in the dark.

Explicit orders should always be left with Officers in command of posts, and those which are important should never be abandoned without an express command, for the loss of the small number of men composing the picket is nothing compared with the loss of a post, which may place the enemy in command of the whole of our position, or of our communications, and Officers placed in such positions would do well to cast away all thought of self, and, emulating the glorious example of JOHN DAVIDSON, prefer to die the death of a soldier to abandoning a post entrusted to their care, being certain that no after honours they could get, can compare with the spotless glory of falling at their posts, with their face to the enemy, and their last thought as free from all wish to retreat as their first. Such was DAVIDSON's death; let the heart-felt admiration of a brother soldier go with him!

Officers should also be wary of abandoning their posts in the opinion that their so doing will aid the general operations; for, though it might, if the General commanding does not send them orders, they can never be called to account. A fatal instance of this sort of zeal caused the loss of the St. Gothard to the Austrians. Colonel Strauch, who guarded with eight battalions the rugged sides of the Grumsel and the Furca, thinking to aid the Duc de Rohan, who was hard pressed by the French General Thureau, detached a great part of his Force to his assistance, and the consequence was that during their absence, his post, which was of far greater importance, was attacked and carried with the greatest ease, thus leaving open the way to the St. Gothard.

The attack of posts also admits of certain rules, the foremost of which is that no post should on any account ever be attacked in front which can be turned, or the evacuation of which can be forced by other means. It has been truly said that there are few mountain posts which do not offer facilities for such efforts, and the innumerable instances which have occurred of their successful use are surely sufficient to induce

Necessity for the utmost vigilance.

Posts never to be abandoned without explicit orders.

Or in the idea that such conduct will aid the general operations.

Attack of posts.

the most hot-headed Commander to strive to avoid the useless bloodshed caused by a front attack. No efforts should be spared to find out some pathway by which the position can be turned, and, if the enemy have committed the unutterable folly of leaving unoccupied any heights which command it, these should be seized without a moment's hesitation. A plentiful dose of shells should invariably precede every attack, and if these are carefully thrown so as to roll and burst inside the work, the number of the defenders will be very seriously diminished, and when the assault is about to take place, parties of marksmen should advance and seize every position from which they can keep down the fire of the defenders. Every possible stratagem should be put in practice to draw off the enemy's attention from the real point of attack, and when the assailing party advance they should remember of what little practical use fire from lofty heights is, and the Commander of the party, keeping his men as little exposed as possible and saving their wind till the last moment, should make his final rush as rapid and dashing as possible, doing all with the bayonet.

The use of stratagem is finely illustrated in the capture of the Advantages of calling stratagem to our aid. impregnable mountain position of Hemendal in Catalonia by the French Colonel Henriod. He marched from Daroca with 2,000 men and three guns against this Convent, which was on the upper part of a ridge shooting out of a mountain crest and overhanging the town of Orogula. The flanks were protected by steep rocks, and Henriod, seeing that an open attack must fail, devised the following stratagem; he skirmished towards evening with six companies as if to turn the Spanish right, which the Spaniards seeing immediately gathered there, and Henriod, apparently disappointed in his attempt, ostentatiously drew off the greater part of his Force, leaving a portion however at hand, concealed by the darkness of the night and the rugged ground. The Spanish Commander, seeing the last of the baggage of the French disappear, and thinking all danger past, was thrown off his guard, and, when Henriod at the head of his party appeared, he found an easy conquest at his disposal.

And the brilliant recapture of the Crag picket at Ambeyla by Major Keyes shows what a few determined men can effect by a sudden and energetic attack. Every effort should be made to bring the assailing party up fresh, as, if blown, they are open to defeat if vigorously charged by the enemy on their arrival, and advantage should therefore be taken of all ground which, at the same time that it screens the men from the enemy's fire, enables

them to regain their wind ; provided always the advance of the assault is not unnecessarily delayed. To conclude—the attack on such posts should be sudden, energetic, and unforeseen.

The attack and defence of defiles is similar in many important respects to that of posts, but in others there is a difference, and we therefore consider a few words on the subject necessary. Of course no defile that can be turned should ever be attacked in front, and as all defiles consist of two heights and a gorge, the best method of attack appears to be to crown the heights on either flank and to have another column to attack below, when the operations of the flanking parties appear to be developed. This is the invariable method which appears to have been adopted by all Generals ; by it Napoleon, in 1799, carried the terrible defile of Neumarckt ; by it Soult forced the pass of Roncesvalles, and by it Pollock succeeded in the passage of the Khyber. The arrangements of the last-mentioned General in the operation alluded to are so perfect in conception and so complete in detail that it would be superfluous, with such an instance, to attempt to elaborate or improve on it. The following is an abstract of the orders on the subject.

Attack and defence of defiles. Advance guard, 1 Company Europeans,—6 Companies N. I.,—Sappers and Miners,—9 guns,—2 Squadrons Dragoons,—next, the Camels carrying the treasure and ammunition,—then 1 Squadron Dragoons,—Commissariat Stores protected by two Companies of Native Infantry,—1 Squadron Light Cavalry,—then all the Baggage and Camp Followers,—2 Squadrons Irregular Horse,—spare Ammunition and sick men,—last, Rear-guard of 3 guns,—1 Squadron Light Cavalry,—2 ditto of Irregular Horse,—2 Squadrons Dragoons,—2 Horse Artillery guns,—and 6 Companies of Infantry. Such was the order of march of the centre column. In addition there were two flanking columns, each consisting of 2 Companies Europeans,—18 Companies Native Infantry,—300 or 400 Jezailchees, and some Sappers. These columns were all drawn up on their respective places, which had been carefully selected, while one of the batteries of Artillery was drawn up opposite the mouth of the pass to distract the enemy's attention as much as possible from the flanking columns, and a Regiment of Cavalry was ready on some open and undulating ground to the left of the pass to charge any party of the enemy that attempted to make a flank attack from the low hills in that direction on the baggage, &c. The main or rather centre column was not meant to do any fighting, but was to remain halted in front of the pass

till the flanking columns had won their way to the rear of the barricades which the enemy had thrown up in the mouth of the defile, when it was to advance through the obstacles which the Sappers would have destroyed. A bugler was told off to each Commanding Officer of detachment, to sound whenever anything occurred to stay the advance of his particular party, and this call was to be taken up by every other bugler, and the whole of both flanking columns were to halt till the obstruction had been cleared, when the same bugler as before was to sound the advance. Thus the columns advanced simultaneously, and, the advance of each being carefully regulated, there was no fear of their being overwhelmed in detail. The clearest orders were laid down as to the position of the baggage of each Regiment, and an English Officer was told off from each Corps to see that the places assigned were kept. So particular was General Pollock that every man should clearly understand what he had to do, that he went round to each individual Commandant to satisfy himself that all was comprehended. Such arrangements as these deserve the success they received. It may be thought by some that the minute detail of the place of every Camp Follower by the General commanding was rather unnecessary; not so, there is no operation in war in which confusion is more likely to take place, none in which confusion is more fatal than in the forcing of a narrow mountain pass; and if the success of this instance, or the disaster caused in Elphinstone's Force by the neglect of these rules, be not sufficient, none better can be offered than that of the retreat of Korsakoff from Zurich. This General, with a large Force of Russian Troops (who nowhere show better than in a retreat) had every chance of making good his retreat towards Schaffhausen, and there forming a junction with the Austrian General Hotze, if he had only adopted more fitting arrangements; but, instead of a formation which would have given him every possible chance of success, and afforded to each arm its proper sphere of action, he retreated out of Zurich with his Infantry first, then his Cavalry, and lastly his Artillery and Baggage, and the consequence was that his Infantry burst splendidly through the French, his Cavalry was nearly annihilated, and the whole of the Artillery, amounting to 100 guns besides immense stores of ammunition, was captured by Massena.

This method of attacking a defile suggests the way to defend one; the mouth of the pass should be strongly
 Defence of a pass. barricaded and furnished with guns, and the crest also should be strongly held, so as to prevent the enemy from

getting on commanding ground. This, of course, cannot prevent the pass from being turned ; but, strictly carried out by determined Troops, it ought to prevent its being forced ; but, if it should be forced, the same principles carried out at every likely spot will do all that can be done to effect the defeat of the enemy.

It is, of course, as necessary to crown the heights and take all the other precautions detailed above in retreating as in advancing through a pass ; a curious proof of this is afforded by the fact that General Pollock, who led the way in the return from Cabul and invariably adhered to his former plan, was never once attacked, while Generals Nott and McCaskill, who brought up the rear and neglected these precautions, were frequently harassed by the matchlock fire of the enemy.

But a retreat through a mountainous country is perhaps the most difficult operation in war, and should not therefore be passed over with these few words. There is nothing more important than the choice of an Officer to command the rear-guard ; on such an occasion he must be no common man from the roster, but one endued with the most abundant resource and coolness in danger, and possessed of a most determined, inflexible nature. In a retreat the first thing to be done is to restore the most complete discipline in the Army, which, it may be supposed, is somewhat disheartened by the circumstance which has caused the retreat, and in this view the greatest severity is not only allowable, but positively advisable ; all disobedience of orders should be as promptly as severely punished, and if, in such a case, a General should hesitate at the infliction of death, he should first remember that his mistaken leniency may end in the total disruption of his Army. Of course it is always an object to get as quickly out of the enemy's reach as possible ; but the speed with which this is attempted should never be so great as to disorganise and dishearten the Troops ; indeed, considering the causes which will combine to put them out of pride with themselves, the marches should be as short as possible. Now more than ever the spirits of the men should be kept up—now more than ever the General should assume a confident air in his manner and in his orders, and, far from letting the men think they are engaged in a hasty retreat before a victorious enemy, they should be induced to believe that there is every hope of retrieving their defeat by drawing the enemy after them into some difficult position. It has been said the retreat should be conducted as leisurely as possible, but great care should be taken that the enemy does not seize some

defile which will cut off the retreat ; this should be guarded against either by sending a detachment to hold it, or by marching at once for it with the whole Force. If the pursuit is very vigorous, it will be necessary to take advantage of every bit of ground which offers facilities for keeping the enemy in check, and the rear-guard should strike him hard with energetic offensive attacks at the moment he is advancing exultant with success and dreaming only of victory. But the rear-guard should avoid the mistake of holding its ground one moment longer than is necessary, and arrangements should be made by which the Army shall not get beyond reach of affording support to its rear-guard. The conduct of Rosenberg, in the retreat of Suwarroff through the Schlachenthal, Muttenthal and Engiberg, affords a perfect model for a rear-guard Officer ; furiously and repeatedly attacked by Massena, harassed on either flank by light Troops, he never faltered or gave way, but ever turning on them coolly, but suddenly and vigorously, he defeated all attempts to break the order of his glorious Troops. The whole account of this retreat should be carefully studied by the reader who is anxious to learn from the past what may be dared for the future. Never has the stout maxim "Never say die," been more gloriously applied ; pressed on all sides, with his Troops fatigued and dying of hunger, his cattle perishing miserably, obliged to abandon his Artillery, with the French behind him, before him, on all sides of him, no thought of surrender ever crossed the mind of the glorious old veteran Suwarroff ; far from it, he wished to cut his way through the French and form a junction with Korsakoff, and when he was overruled by more timorous or prudent (call it which you will) spirits, this man, who had witnessed unshaken the terrible three days' fighting at the Trebbia, fairly burst into tears.

In manœuvring to prevent the successful retreat of an enemy, detachments should be sent by forced marches through mountains. to seize all the defiles ahead ; and his retreat should be vigorously and unceasingly pressed ; on, on, and again on, should be the only words for the Officer of the advance guard ; incessant attacks should be directed on his rear, and his flanks should be harassed by Irregular Troops, while he was worn out by ceaseless watching and waking, by night attacks on his camp, and every advantage taken of short cuts through the hills to appear in front of him at the same moment that he is assailed in rear.

Need it now be said that though Mountain Warfare does not admit of the application of certain rules, Maxims to be deduced from the study of Hill Campaigns. it is most undoubted that the experience of

campaigns of this nature does furnish examples from which the following maxims may be deduced, viz. :—

1st.—Strive by the use of well-contrived stratagems or by the unexpected use of a superior Force to defeat your enemy.

2nd.—Act as much as possible on the communications of your enemy, but be very jealous of all attempts on your own.

3rd.—Never attack a position in front which can be turned.

4th.—Do not disseminate your Troops more than is unavoidable.

5th.—Let all your operations partake of the offensive, and as many as possible of the initiative.

6th.—Always keep on interior lines.

7th.—Be cautious in council, but daring in execution.

8th.—Remember that, if forced to act on the defensive, nothing can save you but the possession of a central position, interior lines, and the use of daring offensive strokes.

9th.—Neglect no means of increasing the mobility of your Force and the extent of your information.

With these maxims, it is time to conclude, merely saying that, though a General may neglect them with impunity if in possession of overwhelming numbers against a pusillanimous enemy, they will carry him through any Mountain Campaign where success is possible.

The necessary requirements of a Force destined for operations

Equipment of a Force for a Hill Campaign. among hills are so evident that it seems almost superfluous to say much about them, never-

theless, as many of them are not unfrequently neglected, it is well to delay a short space longer. Of course any such Force must predominate in Infantry, and this should be formed, as much as is practicable, of men who are accustomed to hills, for, though we do not for a moment wish to uphold the courage of hillmen more than that of their brethren from the plains, it stands to reason that they must be more at home on ground similar to that with which they have been familiar since childhood. There is much also to be attended to in the equipment of the Infantry, especially if they have not been accustomed to much hill-walking, for carelessness in this particular may render the whole Force temporarily inefficient.

Necessity of providing good shoes. Therefore they should be provided with shoes with strong and broad soles, with loose upper

garments, and they should not be encumbered with one atom more to carry than is absolutely necessary. Such remarks may be laughed at by those who consider such minutiae beneath the notice of a writer on such a subject: but nevertheless, in them lies the

maxim that more battles are won by legs than arms ; neglect the legs, and the arms will not be up to much.

That a Force should be furnished with Artillery of some sort none can doubt ; but the calibre of it must depend in a great measure on the nature of the enemy's position, the means of transport, and on the resistance expected. On the Artillery requisite. Strange as it may appear to recommend the transport of heavy guns in countries where there is often barely room for a footman to stand on, there are occasions when it is necessary to do so ; and, though the difficulties of this measure are always necessarily great, many of them disappear if it is remembered that one of the secrets of Mountain Warfare is to operate by the valleys. These will nearly always afford the means of transport, provided that time is allowed for some improvement of the roads ; and therefore in determining on the advisability of taking guns of such heavy calibre, it is well to consider beforehand whether the advantages of their presence are not inadequate to the disadvantages of the delay caused by their transport. The transport of heavy guns, through the valleys will not present any very insurmountable difficulties, as, time being allowed, the roads can be improved, and the power of draught increased to almost any extent ; it is the carrying them from the valley to the heights from which they are to come into play that will be found to be most difficult. As this depends so much on the nature of the ground, it is not easy to give any very precise instructions ; the intelligence and determination of the General commanding should be able to furnish these, for it is certain that no obstacle that any mountain ever presented is insurmountable to a determined mind.

Nothing will nerve to the attempt more than the knowledge of the fact that these difficulties have been overcome before, and this a perusal of the detail of the park which accompanied the several columns in the Ghoorkha war is sufficient to prove. This was as follows:—Ochterlony's Division had two 18-pounders, ten 6-pounders, and four mortars ; Gillespie's Division, two 12-pounders, eight 6-pounders, and four howitzers ; Wood had four 6-pounders, three 3-pounders, and four mortars ; and Marley four 18-pounders, four 6-pounders, four 3-pounders, and twelve mortars. These guns were frequently carried up to the tops of very high hills, and were most effective in reducing the stockades and strong stone forts of the Ghoorkhas. The actual distance from the valley to the height to be furnished with guns ought always to be as much lessened as possible by bringing the guns in the closest practicable proximity

to the foot of the height. Great care should also be taken that the height selected will really serve the purpose in view, as it is simple folly—to call it by no worse name—to risk undergoing such enormous labour as the construction of such batteries imposes, for nothing. There were several cases of the neglect of this precaution in the Ghookha war; indeed, it was one great reason for the tardiness of Ochterlony's operations in the first campaign. Elephants will be found most valuable assistants in such work, for their enormous strength enables them to perform the most astonishing tasks, while their wonderful sagacity makes them useful when even human ingenuity is at fault; but, when it is remembered that the heaviest gun an elephant can carry is a 9-pounder or an 8-inch mortar, we should not think of their being used for burden, but for draught. An intelligent Engineer Officer, with strong working parties, should always precede any such attempt, in order that he may smooth, as much as possible, the difficulties of the transit. A sort of covering made of brushwood or of a large tree hollowed out should be provided for the guns, and then elephants, mules, horses, bullocks or men can be made available to drag them up. In the passage of the Great St. Bernard by Napoleon, a hundred large firs were hollowed out each to receive its piece of Artillery: "The carriages were taken to pieces, the ammunition put into small boxes, and both were conveyed on the backs of mules, and with such admirable precision were these arrangements made, that the dismounting and replacing of the guns hardly retarded for an hour the march of the columns, and the soldiers, animated by the novelty and splendour of the enterprise, vied with each other to second the activity of their Officers. To each gun a hundred men were harnessed, and relieved by their comrades every half-mile; the soldiers strove with the greatest emulation in the fatiguing undertaking of dragging the guns up the toilsome and rugged track, and it soon became a point of honour with each batch to prevent their cannon from falling behind the Army. To support their efforts, the music of each Regiment played at its head, and, where the paths were peculiarly steep, the charge sounded to give additional vigour to their exertions." In the still more extraordinary passage of the Splügen by MacDonal'd the same plan was followed with equal success; and with such examples before us, who can doubt the practicability of the adoption of the system in any country? Of course, for short distances the soldiers themselves can be made available to carry the guns, but they cannot be well transported by men on the line

of march unless on wheels. It is not necessary to lay down any fixed number of men for the carriage of each gun; this can easily be determined when the nature of the ground is seen, but those who have noticed the Tartar coolies carrying enormous beams of wood in the hills must have been struck with the excellent manner in which the weight was equally divided, and it is evident that their plan can be applied to carry any sort of weight.

Though Mountain Train guns, when properly managed as regards their mobility and practice, are most useful against bodies of men, no dependence whatever can be placed on them against stone forts, stockades, or even "sangars." Mortars should invariably accompany a Force, as they are of the greatest service in

The great importance of vertical fire. shelling the excellent and almost unbreachable stockades which hill men are so clever at making. The only animal, except the elephant, which can be

Mules to be used for transport. applied to the transport of guns among hills is the mule, the pony being very liable to break down among hills. The mules chosen should be compact strong animals, not too tall, and above all, accustomed to travelling among hills; but the best of them will soon be found useless if the utmost attention is not paid to their packing and loading, so that the weights be equal on both sides and sit firmly to the baggage saddle. All the ammunition of the Force should be carried on mules, and care should be taken that the supplies of this are ample, not as an incentive to the disgraceful waste of it which took place at Ambeyla, but as a precaution; a certain amount should be given to each Regiment, and the mules carrying it should always be required to keep up with their respective corps; and a reserve should be formed to come up in the rear under the direction of an Officer.

In all mountainous countries there are numerous streams and chasms which require to be bridged, and Sappers and Miners. these bridges require careful construction; there is also always a likelihood of much road-making, and for the construction of fortifications of various degrees of perfection, and it is therefore necessary that a body of skilled Sappers under intelligent Officers should accompany every Force operating among mountains.

Cavalry can be of very little use among mountains, unless the valleys are very large and frequent, but, if used Cavalry of little use except as orderlies. to keep open the communications through the

valleys, they can be of the greatest service, and if some of them were mounted on sturdy sure-footed ponies they could be still further utilised by being used as orderlies at the front. But if there are valleys beyond, on which Cavalry can operate, the intervening ruggedness of the path should not be allowed to stand in the way of the detachment of a body of that arm. The ground over which Colonel Probyn brought his Regiment at Ambeyla shows that few paths are impracticable to a determined leader of this brilliant arm.

It may not be out of place here to call attention to the necessity for a very careful selection of Officers who

Officers.

are detailed for a Hill Campaign in the superior ranks, for it is a necessity of this style of warfare that there

should be numerous detached commands, and it is a certainty that very severe physical labour will have to be undergone by all engaged in such work. It may therefore be deemed an absolute necessity that the Senior Officers should be men of superior mental powers, and of very considerable physical energy and capability.

The amount of baggage necessary for each rank in a Hill Campaign is a very important consideration, and, though the following views on this subject

Baggage.

are somewhat Napierian, all true soldiers' friends will probably agree with them. In the first place arises a question—which has particular reference to this matter—as to the necessity of having European Troops in such warfare. For such irregular and desultory warfare they are scarcely necessary, and though

it is not wished for one moment to under-rate their many noble qualities, it does not become anyone, who knows the endurance, the valour, and the *elan* of our gallant Native Troops, to join in the cry that they are necessary for every fight, and that Natives can do nothing without them; it therefore only remains to be seen whether the disadvantages of their immense baggage trains are compensated for by the advantages of their presence.

On the necessity for taking Europeans.

But whether Europeans are taken or not, this much is certain, that in a mountainous country no tents should

Tents are superfluous.

be permitted, for the climate is never such as to require them; and each soldier should be supplied with an extra blanket and a piece of waterproof sheeting large enough to go over and under him.

The provisions should be compressed into as small a space as possible, and we think Government might well, in this particular, take hint from emigrants and hunters. The dried meat termed pemmican (one lb. of which is equal to 4 lbs. of ordinary meat) might be carried for Europeans (when they are taken), while the Natives might be supplied with an equally portable preparation used by the North American Indians in such circumstances, and termed "cold flour." Rum should be carried of proof strength and diluted afterwards.

And if we thus summarily reduce the baggage, let us not forget the Camp Followers, that fearful clog to the movements of all Indian Armies. Let us also reduce these to the very smallest possible number, to one more in accordance with the stern and soldierly scale of Europe. First, one servant only to each Officer should be allowed; all in addition should be struck off without reserve. Officers can get many of their necessities supplied for them by their men, and no true soldier should wish for more on service. A few "bheesties," an occasional cook might be allowed, but away with the sybarism of tent pitchers, scavengers, or of those dusky fair ones, the "milk women," the very sight of whom coming up the Ambeyla Pass made the dauntless Neville Chamberlain positively shudder.

By this sternness, there is some hope of the followers being kept in order, some chance of mobility in the Force. All soldiers who have read of our disasters in Cabul must be aware that one of the primary causes of the massacres in the passes of Khoord Cabul, Jugdulluck, and Huft Kotul, was the immense crowd of Camp Followers who hung round the Force, frustrating every effort at order or combination, by their terror-struck behaviour; and there can be no doubt that if they had not been there, some at least of that doomed Army would have reached Jellalabad.

Everything possible should be done to make the intelligence department perfect, for it may almost be said that the difficulty of conducting a Hill Campaign is in direct ratio to the amount of reliable information furnished to the General. Liberal payment will always secure good information, and there is no more false economy than attempting to get it cheap, for, however plausible may be the stories which spies (under such a system) will bring, it is certain that no men in the world will risk the cruel deaths spies are put to without a large reward.

In addition to the Officers of the Quartermaster-General's Department, an Officer should follow up the Force, mapping all the country he possibly can, for Asiatics, whether from the inadequacy of the chastisement to which they are subjected, or the buoyancy of their spirits, not unfrequently necessitate, by their after-conduct, Second Campaigns against them.

FINIS.