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Authors alone are responsible for the statements made and the opinions expressed in their papers.

THE POND SHEER BOOM.

WRITING from 408, Broadway Court, Winnipeg, Manitoba, Mr. Chas. A. Bramble, late Lieutenant, Royal Westmoreland Militia, says :----

I am venturing to call your attention to a device which as it seems to me might be useful in certain contingencies in the present operations on the Continent.

The Pond Sheer Boom was invented by a New Brunswick lumberman, in the early eighties, to steer his logs in a bay where they could be held. It is now in very general use wherever big lumbering operations are carried on in Canada or the United States. The St. John River is about the same width, I understand, as the Rhine, and I can speak from personal knowledge when I say this boom can be made to span the former stream in a few minutes almost at right angles to the banks. The requirements for successful operation are sufficient water for the rudders to clear the bottom, and a moderate to swift current. My recollection of the St. John's rate of flow in summer is that it does not exceed 2 or $2\frac{1}{2}$ miles an hour at Fredericton.

The boom, as made by lumbermen, usually consists of joints consisting of a couple of baulks of timber jointed together, but at a pinch almost any kind of timber will serve. The area of the rudders must be largely in excess of the immersed surface of the baulks, to obtain the "otter" effect.

The patent has, I believe, long expired. The joints are shackled with short lengths of chain. Such a boom could be speedily improvised provided rudders and chains were on hand.

The Pond Sheer Boom is described as follows :---

This provides a rapidly-constructed bridge over a river of almost any width, although it was not devised for that purpose. By varying the inclination of the rudders to the current, the joints, either individually or collectively, may be made to assume any angle with the bank, from parallel to almost a right angle.

As made by lumbermen it would not carry troops excepting in single file, but if constructed more substantially, might have very much greater carrying capacity.

The only iron work necessary are the rudder fittings, and the short lengths of chain to shackle the joints to one another, and these latter could be dispensed with for short service, and rope used instead.



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way, and once in equilibrium,

" upstream will remain

In at

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large angle to the

a perfectly wonderful

One of the booms will " walk "

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ENGINEER TRAINING OF THE JAPANESE ARMY.

By the courtesy of the Japanese Military Attaché we have been enabled to reproduce extracts from the translation made by Capt. F. S. G. Piggott, R.E., of the above important work.

THE PRINCIPLES OF COMBAT AND ENGINEERING WORK.

SECTION 1.-GENERAL PRINCIPLES.

r. Engineers generally carry out work demanding special technical skill, and great digging powers. Although infantry and artillery should themselves construct the works they require, the engineers should, according to circumstances, give them guidance or help, and on special occasions they may take charge of the work which the other branches of the Service should really carry out themselves.

2. Engineers are employed to the best advantage under a single control; by this means the engineer commander can himself dispose the *personnel*, tools, and stores of his whole force in a suitable manner, and can superintend accurately all the work. However, when control is difficult, on account of the tactical situation, the configuration of the ground, or the area of work, the engineers may be divided, and attached to other units. Even on these occasions, when the need for them is finished, it is essential that they should be immediately restored to the command of the engineer commander.

Engineers directing the work of another unit should usually be attached to that unit, and there are occasions when this may be done if they are merely assisting in the work.

When other units are detailed to assist the engineers, according to the situation, and, in particular, to the type of work, they should usually be placed under the direction of the officer commanding the engineers as regards the actual work.

3. The officer commanding engineers will usually be directly attached to the commander of the force; he will have the control of the whole, or greater part, of the engineers, and, from time to time, of other units; he takes charge of the work required during every phase of the battle.

Engineers attached to another unit carry out the work required for that unit during the progress of the action, exclusively, based

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upon the intentions of the commander of the unit to which they are attached.

When engineers direct the work of another unit, the officers will assist in connection with the plan, allotment, and actual carrying out of the work, while the N.C.O.'s and men will show the method and examples of the work. When engineers assist in the work, they will usually take charge of that portion which demands their special skill.

4. Engineers should be employed as one body as much as possible; consequently, when they have charge of several different kinds of work, the relative degree of urgency should be borne in mind, and work begun upon that work which should be finished first, followed by the other work in rotation. If, however, it is necessary to carry out several different types of work more or less simultaneously, the engineers will be divided.

When the situation specially requires it, there are occasions upon which a portion of the engineers may be temporarily held back as a reserve.

5. As soon as an action has once begun, until its final stages, the engineers must carry out successively every kind of work required, in accordance with the progress of the engagement. It is therefore essential that the officer commanding the engineers should watch the course of the action throughout, and be thoroughly conversant with the situation at any moment. When carrying out any work, however, he must always obtain the orders or sanction of the commander of the force.

6. An engagement is usually opened by the protective troops, or by those having some other special duty; the officer in command will now rapidly make the necessary dispositions, and check the advance of the enemy, while reconnoitring his condition and the configuration of the ground. The commander of the force, taking with him subordinate commanders as required, will then take up a position as near the enemy as the situation will permit, and observe the conditions on both sides, especially the configuration of the ground ; he will give security of action to the troops of protection, etc., and, if necessary, form up the main body preparatory to deployment. At this time the engineers attached to the troops of protection will, under the orders of the officer commanding the latter, carry out such work as may be necessary for checking the advance of the enemy. On the completion of the work, or on occasions when there is no need of any work, however, they will usually return to the direct command of the commander of the force, and will be mainly employed in carrying out work to facilitate the deployment or forming up of the main body.

The officer commanding the engineers will carry out the required

reconnaissance, based on the intentions of the commander of the force, and will furnish the latter with the necessary material for making his decision and arrangements.

7. The commander of the force decides the general plan of the engagement, and, based on this, issues his orders. The infantry then begin the movements for attack, or for occupying some indicated point, while the artillery take up a position. At this time the engineers are usually all under the direct command of the commander of the force, or, according to requirements, a portion of them are attached to the troops in the first line, and carry out any work necessary to facilitate the conduct of the attack, or the occupation of a position.

8. When the commander of the engineers receives an order from the superior commander, he learns from it the situation of the enemy and of our own troops, the superior commander's intention, and his own duties, etc.; he should then immediately carry out the required reconnaissances, employing, if necessary, the requisite officers.

A reconnaissance must be rapidly executed; if the right moment for making it is lost, it will have no value at all, even though an accurate result be obtained; undue haste, which may deteriorate into carelessness, must not be aimed at. The effect of any work depends solely on the quality of the reconnaissance.

9. The officer commanding the engineers, as a result of the reconnaissance, should determine rapidly and accurately the scheme and distribution of work.

The essential points as regards the scheme and distribution are as follows: a decision as to the class and extent of the work, and the order and means of carrying it out, bearing in mind the indispensable requirements of the moment, and the time available, etc., based upon the situation, and, particularly, the object of our troops; and a division of the *personnel*, tools, and stores, in accordance with the above.

10. When the plan and distribution of the work has been decided, the engineer commander should issue orders, based upon them, to each of his subordinate commanders; these orders must be short and clear, so that each subordinate commander understands the dispositions of the enemy and of our own troops, the intentions of the engineer commander, the duties of each portion of his command, and the allotment of tools and stores, etc.

In issuing orders, the engineer commander should assemble all his subordinate commanders, point out the actual ground, and give them a general order; it is often profitable, however, to issue separate orders, or, first issuing short orders (and so rapidly getting each party to the desired position), then to issue detailed orders. The summoning of a commander of a body of troops engaged in work, or in action, to a distant point, and giving him orders, must at all times be avoided.

II. When orders have been issued, the execution of the work, or preparations for it, will be immediately begun ; at this time the engineer commander will rapidly report to the commander of the force the expected time of completion, and, if necessary, an outline of the scheme.

12. The engineer commander controls the work of each portion of his command, so that it is executed in accordance with actual requirements; it is of special importance that work should be completed at the right time, so as not to delay the general conduct of the engagement.

13. When work has actually begun, even in the event of meeting some unexpected hindrance, subordinate commanders of every rank should carry on resolutely with firm determination, without uselessly changing their plans, or hesitating over their execution. Even should there be a change in the situation, everyone should not wait aimlessly for orders, but should make arrangements suitable to the moment, and in accordance with his special duty; an immediate report should be sent in of what has been done.

14. When executing any work, care should usually be taken to conceal oneself from the enemy's view ; if the situation requires it, however, work must be carried on bravely and smartly, and without concern, even when exposed to the enemy.

15. During the execution of any work, when there is no covering party, measures for self-protection must be taken; should an attack from the enemy be received while at work, the necessary strength must at once be detailed to oppose it, while the remainder carry on with the work.

16. During the execution of any work, the engineer commander should be in constant communication with the commander of the force, and should report the state of progress to him from time to time, notifying also the commanders of other troops concerned; also, if necessary, he should carry out any reconnaissance in connection with work to be executed next, and settle on his scheme. His subordinate commanders should also act on these lines, and must maintain certain communication with the engineer commander, while making preparations to be always able to comply with any subsequent requirements.

17. The position of the engineer commander should be selected mainly so that he can direct the whole of the work ; in addition, the rapid delivery of orders and reports must also be considered. If the units under his command are working in places widely separated, he will take up his position at the point where the most important work is being carried out, and inspect the work of the other parties as may be necessary. If he changes his position, he must settle the means by which orders, reports, etc., shall reach his new position without delay.

18. For the transmission of orders, messages, and reports, the engineer commander will make arrangements for orderlies and telephones, settle on signals, frame codes, and devise various other expedients.

19. When no engineer work is being carried out, the engineer commander, in order to meet any demands for work arising unexpectedly, and bearing in mind the convenience of knowing thoroughly the changes in the military situation, should usually take post at the superior commander's position.

20. When an engagement is actually in progress, those engineers who are unemployed will usually form the reserve, with the infantry; a formation should be chosen so that they may be controlled as conveniently as possible, that suits the configuration of the ground, and that will render an advance easy; the reduction of casualties from the enemy's fire, however, must also be considered.

21. When engineers fight in co-operation with other troops, it is very important that connection should be preserved; the engineers, however, are strictly forbidden to think only of keeping connection, and to hesitate in executing their own special duties.

22. As the battle progresses, the infantry and artillery develop to the greatest possible extent the effect of their fire, and the infantry eventually deliver an assault; the engineers, therefore, should first clear a passage for these troops, and then charge with the infantry.

23. When victory is in sight, it is very important that the engineer commander should make preparations for the pursuit, without losing any opportunity.

24. Retreat easily degenerates into rout, and is liable to reach a stage when it is impossible to rally; the engineers, therefore, even when the situation is unfavourable, should exert themselves in every possible way, and, co-operating with the other branches, endeavour to retrieve the fortunes of the fight.

25. At night both the command and the movement of troops are difficult, and mistakes are easily liable to arise; for night work in the case of engineers, therefore, it is specially important that the scheme, and preparations, are thorough and accurate, and the distribution simple; further, orders in connection with night work should be issued as far as possible by day, and all preparations completed before sunset. There are occasions, also, when it is of advantage to point out beforehand the first steps to be taken after the completion of the work.

SECTION 2.—THE ATTACK.

General Rules.

26. Generally speaking an attack is the sole way of gaining the victory; its essence consists of a courageous advance against the enemy, with firm determination and a single mind. Natural and artificial obstacles, however, often hinder this, and make its execution difficult; the work of the engineers in the attack, therefore, has for its principal object the removal of these obstacles, and the facilitating of the infantry's advance to the attack, and particularly the actual assault.

27. The secret for disposing troops for the attack is the employment of overwhelming force at the actual point of attack; the main force of the engineers is also usually made use of in this quarter, but when there is need of executing any important work in another direction, the majority of the engineers may be employed there.

28. An attack is advantageously made by enveloping the enemy, that is, by attacking him in front and flank simultaneously; it is usually carried out by the advance of several columns together, or by reinforcements from the troops in rear. In order for the troops debouching on the flank of the enemy to manœuvre as rapidly as possible, there are times when it is necessary for a large force of engineers to make arrangements for communication.

29. At the beginning of an action, when the advanced guard, and other protective troops with special duties, are taking steps to check the enemy's advance, the engineers should, if necessary, join in the work. There are times also when the engineers must rapidly arrange for a good lookout, so that the advanced guard commander and the superior commander may have a convenient spot for observing the situation.

30. As soon as the superior commander has decided on the dispositions for attack, and issued his orders, each unit deploys, either from where it is formed up, or from column of route; the engineers are responsible for clearing communications for them, and facilitating their movements. In order that the artillery may have a good position, it is specially important that the engineers should facilitate its occupation, by strenuous work should the configuration of the ground be bad; the reason for this is that the quality of the artillery positions has an intimate connection with the infantry's advance to the attack.

31. When every unit has completed its deployment, the infantry advance to the attack, and endeavour with one accord to approach the enemy. The engineers, therefore, if possible, should reconnoitre the ground in front beforehand, with the infantry, and when an obstacle is encountered, dash forward in front of the infantry line and prepare for its passage.

32. Even an inch of ground that has once been occupied must never be given up again to the enemy. For this reason works must be constructed if necessary, and the place strengthened. On these occasions the engineers should assist the infantry's work as required, or should work independently at some specially important point; the progress of the attack, however, must never be delayed on account of this work.

33. The distance that should be taken up by the troops in rear varies according to the situation, and, more especially, to the configuration of the ground. In open country, at the beginning of an action, this distance is considerable, and is subsequently gradually reduced. Care should be taken, however, not to suffer casualties in both echelons simultaneously on account of the danger zone of infantry fire, or of shrapnel; on this account the necessary distance is about 300 metres. But when the moment for decisive action approaches, the troops in rear must close up to the line of battle, regardless of casualties.

34. As soon as the moment for decisive action has arrived, a portion of the artillery usually advances to the most effective range, and the machine guns also endeavour to push forward to the front, the engineers, therefore, must prepare lines of advance, and positions in plenty of time.

35. If the enemy cannot be driven away merely by rifle fire, it is absolutely necessary to deliver an assault; consequently the engineers must first remove any obstacles and clear lines of advance, and then carry out the charge in company with the infantry. When a counterattack from the enemy is received, they must fight hard to the utmost of their power, and try to bring about a successful charge.

36. When the engineers attached to the assaulting party use hand grenades, they should hurl them all together when the enemy is unprepared, and this moment must be utilized for delivering the assault. Any attempt to carry out a charge after a regular duel with hand grenades has once begun, will tend rather to impair the spirit of the advance and attack.

37. When a charge has been successful, the engineers should immediately take steps to facilitate the advance of the artillery, and, if necessary, to strengthen the ground seized. The engineers not employed on this work, however, will vigorously continue the attack with the infantry, up to some point where they can bring pursuing fire to bear upon the enemy; those units which do not join in the pursuing fire, will quickly arrange their ranks, and prepare for a subsequent pursuit.

Even if the enemy's position has been seized, care should be taken not to expose unnecessarily a large target to him, otherwise considerable casualties may be incurred in a very short time from some other part of the enemy's position, especially from his artillery.

38. When a charge is repulsed, the engineers, fighting bravely, must stand fast in the nearest possible place, and they must specially try, by means of keen and bold actions, to enlarge the lines of attack once more, or to construct rapidly strong supporting points to facilitate a subsequent charge, and do everything else possible to achieve success.

The Encounter Action.

39. In the case of an encounter action, in order to gain the advantage of the initiative, the superior commander will rapidly dispose his troops with firm decision, even if the situation is not yet clear; for this reason, each subordinate commander must act upon his own discretion according to the changes in the situation, in such a way as to fulfil the wishes of the superior commander.

40. The advanced guard, in order to fulfil their mission, will bring on an action if necessary, and should the frontage be very wide, a strong supporting position will be occupied without delay. On this account, the engineers attached to the advanced guard must assist the infantry and artillery as necessary, carry out works to make occupation secure, and, in particular, clear the necessary roads for the advance of the artillery ; further, when the intention of the superior commander is known, they must prepare a position, and approaches, for the artillery of the main body. When there is any fear of the enemy completing his deployment first these measures are specially important.

41. In encounter actions, in order to complete deployment before the enemy, it is an advantage for each unit to deploy direct from column of route. The superior commander, although he should use every endeavour to join battle with his whole force under his control, will, on occasions when he wishes to confirm an advantage seized by the advanced guard, or to reinforce the latter without losing time, order each unit of the main body as they successively arrive, immediately to take part in the combat. On these occasions the engineers will be principally responsible for work to facilitate the deployment of each unit, more especially the artillery, and also the infantry's advance to the assault. The engineer commander, therefore, must endeavour to bring the engineers of the main body to their work in front, as rapidly as possible.

42. In an encounter action, each engineer subordinate commander will see that he is acting in conformity with the rapid course of the action by making special efforts to be prompt in his plans, dispositions, and actual execution of work. He must not lose valuable time by a desire to execute some perfect piece of work.

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The Attack against an Enemy who has Occupied a Defensive Position.

43. Against an enemy who occupies a defensive position, the attacker usually has plenty of time to reconnoitre the enemy's dispositions, and the configuration of the ground, and also to choose the time, direction, and method of attack; he must therefore determine on detailed plans, and make very full preparations beforehand.

The value of the enemy's position has a considerable influence on the plans of attack; in the case of a strong position, in particular, the result of the technical reconnaissance forms the foundation of these plans. The engineer commander, therefore, by elaborating schemes for every eventuality, based upon the superior commander's wishes, and by reconnoitring the configuration of the ground, the condition of the enemy's position, especially the construction of his *points d'appui*, the type and degree of strength of his obstacles, and the arrangements for flanking defence, etc., must strive to supply the superior commander with material for plans for a powerful attack. Even during the progress of the action, the engineer commander will continue to act on the above lines.

44. The superior commander, having issued his orders, first forms up his troops preparatory to deployment; at this time the advanced guard will avoid bringing on a conflict, but will be ready to oppose the enemy if he should assume the offensive. The reason for this is that a mobile defender may assume the offensive at the moment that the head of the attacker's troops appears. The engineers attached to the advanced guard, therefore, must take the necessary steps for the artillery to enter their position rapidly, and must also frequently carry out work to strengthen important points.

45. When the plans for the attack have been finally settled, each unit takes up its position preparatory to attacking, in accordance with the orders of the superior commander. The engineers, therefore, must prepare as rapidly as possible covered approaches for each unit, especially for the artillery; the reason for this is that it is essential for the artillery to open fire not only at the same time as the other units, but also unexpectedly.

As soon as each unit has reached its position preparatory to attack, the engineers will co-operate with the infantry as rapidly as possible, and make a detailed reconnaissance of the configuration of the ground; if necessary they will execute any work required, or make preparations to do so, and so wait for the orders as regards the advance, from the superior commander.

46. When the attack does not progress easily, or if an attack in force by daylight is not required, it is often profitable to approach the enemy under cover of night. On these occasions the engineers

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will previously carry out a reconnaissance of the ground in front, with the infantry and artillery, before sunset; in order to facilitate the night movement, they will clear the necessary lines of advance, or take steps to mark them, and make any other arrangements required.

47. When carrying out an attack against a very strong position, there are times when one is compelled to approach the enemy by constructing successive attack positions; this has the disadvantage, however, of being wasteful of time, and of allowing the enemy to still further strengthen his defence, so the attack positions must be constructed as near the enemy as possible.

48. It is not necessary for attack positions to be in one connected line, but the total length of such positions in any locality must be suitable to the strength of the troops in the first line; the intervening spaces, also, must be able to be defended by the fire of the adjoining attack positions, or by means of reinforcements from the troops in rear.

49. In order to make safe the communication between the attack positions, and from the ground in rear, communication trenches must be excavated as necessary; their direction and width will be determined by the enemy's dispositions, the configuration of the ground, and the kind of troops who will pass through them.

50. Although the construction of attack positions and communication trenches is mainly the duty of infantry, the engineers will direct or help them when necessary; any special arrangements, however, will be mainly carried out by the engineers. There are also times when they take charge of the tracing of the works and trenches.

51. When actually constructing an attack position, each working party will send out patrols in advance of the line where it is working, and if the enemy should make a sortie will themselves oppose it on the line of their work ; in a dangerous quarter, however, protective troops must be specially posted.

52. Attack positions and communication trenches are usually constructed under cover of night; the troops begin work on them immediately on reaching their prearranged positions, and the work must be at least advanced to such a stage by dawn that the trenches may be enlarged during the day, and subsequently gradually strengthened as may be necessary.

53. When it is possible to construct the whole length, or a greater part of the attack positions, or communication trenches simultaneously, it has the advantage of making the progress of the attack uniform and rapid; but as the execution of the work becomes gradually more difficult in proportion as the enemy is approached, it is often better to work on these occasions with several small parties unknown to the enemy, and execute disconnected works, which are joined up later. 54. In the construction of attack positions and communication trenches, care should be taken to work secretly, in order to avoid being discovered by the enemy; if discovered by the enemy, and coming under his fire, the work should not be stopped, but continued as long as possible, and efforts made to complete it rapidly.

55. When the attack has progressed so far that the remaining distance to be covered can be probably charged over in one rush, a final attack position will be constructed, and passages for the charge cleared, in order to prepare for the assault.

56. Until the infantry have occupied the final attack position, the artillery will advance their position under cover of night, according to circumstances. A portion will frequently push forward into the very front line, in order to bring the most effective fire upon the point of assault; there are occasions, therefore, when the engineers must execute a considerable amount of work, in order to provide the artillery with a covered position, and lines of advance.

57. When clearing paths for the assault, the engineer officers must make sure that there is no miscalculation, by determining beforehand the places and methods of passage, and by getting ready the tools and stores required.

58. In clearing passages for the assault, the engineers should carry out the work under cover of darkness, mist, etc., or under covering fire from our own troops, and complete the work before the assault; if the situation does not permit this, however, they will advance at the head of the assaulting party when the latter charge, and carry out the work by sheer force.

When paths for the assault have been cleared before the assault, the engineers will keep them under observation; they will also once more reconnoitre the state of the obstacles immediately before the charge, to make sure that the enemy has not repaired them, or placed new ones in position.

59. There are often very formidable arrangements for checking an assault, in the case of the *points d'appui* of a very strong position ; the attack of such will follow the lines of an attack on permanent fortifications, very great reliance being placed upon the engineers' special technical qualities.

SECTION 3.—THE DEFENCE.

60. Defence is liable to degenerate into passive resistance, and result in our losing freedom of action, consequently it must be turned into a decisive offensive as soon as an opportunity presents itself.

The conduct of a defence when it is intended to win a decisive victory must invariably be carried out in conjunction with offensive movements; when the object is merely to contain the enemy,

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however, all that is necessary is that the position be held on to with all one's strength. The selection and preparation of a position is primarily determined according to which of these two objects is in view.

61. The superior commander will determine what kind of defence shall be carried out, in accordance with the mission allotted to him, after considering the condition of the enemy and of our own troops, and the configuration of the ground.

The engineer commander, in accordance with the intentions of the superior commander, will make a rapid reconnaissance of the configuration of the ground, and submit the necessary *data* as regards the occupation of the position, and, more especially, its preparation for defence.

62. In the defence, the work which the engineers take charge of is very considerable; consequently it is specially important for the engineer commander to arrange with the very greatest care for the distribution of his men, and the order in which they shall begin work, in a suitable manner.

63. It is especially important for the troops who occupy a position to be able to develop fully the effect of their fire, and the position must also always have a belt of ground where the offensive can be assumed.

The position must be suitable to the strength of the force. It is advantageous to make use of high ground, villages, woods, etc., in so far as they do not hinder the adoption of the offensive; but one must not be dazzled by the existence of local ground features which might possibly exert an unfavourable effect upon the position as a whole.

The most favourable position is one where the ground in front is open, and there is a distant field of fire, where there is free communication internally and to the rear, where there is concealment from the enemy's view, and where the flanks can be supported by strong *points d'appui*.

It is seldom that each portion of a position possesses all the desired attributes; any defects, therefore, must be supplemented by a suitable distribution of troops, and by the construction of appropriate works.

64. When about to take up a position, a party is usually pushed to the front with the object of covering our occupation of the position. On this account, when the enemy is near, there are times when a few infantry detachments are pushed forward to offer a temporary resistance; in most cases, however, this mission is allotted to the cavalry, who merely reconnoitre the enemy's dispositions, and, if possible, delay his advance.

65. The infantry fighting line is usually prepared in front of the artillery position, and must be chosen so that there is good fire effect

from our infantry and artillery against the energy's infantry, and at the same time that our artillery may be covered; although the distance in front varies according to the configuration of the ground, on level ground about/500 metres is suitable. The positions for the machine guns are on the line of the infantry position, and may be prepared either actually in the fire trenches, or in detached spots; sites must be selected so that there is no danger from the enemy's long-range shells. It is also frequently necessary to prepare reserve positions for the artillery and machine guns.

The artillery and machine guns must be able to develop their fire effect to the fullest extent against the expected direction of the enemy's attack, and at the moment of our taking the offensive must be able to bring very effective fire on to the zone over which our troops will advance.

66. The superior commander, according to the object of the defence, and bearing in mind the configuration of the ground, and convenience of command, divides the position into a certain number of sections, and allots to each a suitable complete unit. Work on the position should usually be executed by the troops detailed as garrison for each section; the engineers not only direct this work, and assist generally, but are responsible for the preparation of important portions of the position, especially *points d'appui*, communications, etc.

In order not to provide the enemy with an area of safety, the superior commander will allot the ground in front to the section of the defence, and see that each section can flank the dead ground in front of the neighbouring sections.

67. A series of lines must not be constructed with the object of defending a position step by step; only a single position must be || prepared, and that one made extremely strong.

68. In the case of a position where the object in view is a decisive action, strong works will be constructed on those important points which support the position; work in other places will usually be confined to the smallest limits. In the case of a position where the object in view is merely defence, however, all parts must be strengthened, and especially powerful works constructed in addition on important points which support the position.

In every case it is essential that the provision of internal roads for communication, and arrangements for signalling and lookouts, be perfected, that the field of fire is widely cleared, and that distances are measured; and particularly when a decisive action is in view, full provision for communication must be made, so as to facilitate the advance to the attack of the general reserve.

69. Defence works should not be constructed by forming a connected line of fire trenches, but by dividing the works into several groups; in the case of a large position it is usually a good

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plan to allot a battalion to each group. The intervals between these groups of works, and the ground in front, must be under the effective fire of neighbouring groups; if the configuration of the ground, or some other condition requires it, any work necessary may be carried out in the intervals.

In the case of a group of works having for their object the stubborn defence of some particular locality, strong defence works should be constructed against every quarter; with the object of checking surprise attack, in particular, obstacles should be prepared round the perimeter. When the locality is cramped, however, and it is not possible to arrange for a group of works, a closed redoubt is constructed instead.

70. The time required to carry out any work should be estimated, and the work arranged accordingly; in the event of there being any spare time over, the work will be gradually strengthened.

71. It is important that the position, and particularly the defence works on it, should be concealed from the enemy as long as possible; on this account patrols are sent out from each section to the front, or observation parties posted, so as to check the enemy's scouts; it is also of advantage, however, to construct covered, and disguised, works.

In order to mislead the enemy as to our strength and dispositions, false works are sometimes constructed.

72. When the construction and arrangement of works is suitable, the fighting strength of a force is enormously increased for the numbers required for the defence are economized, and the general reserve destined for the assumption of the offensive, increased : consequently the effect in making the foundation of victory sure is very considerable.

73. It is usually very important for the defence to know the enemy's intentions; if the works which he is carrying out are carefully observed, there are times when his plans may be conjectured.

74. The course of a defensive action depends on the advance of the enemy; the garrison of the position, by developing the effect of their fire more and more fully as the enemy approaches, endeavour to destroy him. During this time, the engineers make the defence works still stronger, if necessary construct new works or repair those destroyed by the enemy, etc., and constantly endeavour to perfect the position.

75. When the enemy's attack is checked by the fire of the defenders, or when the enemy is observed to commit some fault, the superior commander will at once make use of his general reserve, and assume the offensive, while, if necessary, all or part of the garrison in the position will be simultaneously moved forward to the attack. At this time those of the defender left in the position, by developing the effect of their fire to the fullest extent, will prevent

the enemy in their front from having any leisure to consider what is going on elsewhere.

76. During the course of an action, if there should eventually be no opportunity to be seized, and the enemy have pressed forward to a very short distance, the garrison should bring all their fire to bear, cause the enemy to waver, and then dash out on him with their whole line; in the event of the enemy's troops bursting into our position, a desperate fight must be maintained to the last.

77. Defence at night is doubly difficult ; the defenders, therefore, should exhaust every expedient to guard against the enemy's approach. With this object in view the engineers will light up the foreground, and keep the obstacles under observation ; they are also responsible for discovering any works that the enemy are constructing.

78. When the position is strong and the defence stubborn, the enemy is eventually obliged to approach us by constructing successive attack positions.

When the enemy is about to carry out work on these, the defenders must immediately search them out, and endeavour to hinder the work and delay the progress of the attack by means of sorties with small parties composed of infantry and engineers. For this reason it is essential that engineer officers should continuously reconnoitre the enemy's works, and discern his intentions quickly.

During the progress of an engagement a particularly important duty of the engineers, in conjunction with the infantry, is the preservation of our obstacles; consequently, when the enemy approaches to close quarters, and plans the destruction of the obstacles, he must be hindered to the utmost of our power. If necessary the enemy's onset must be checked by repairing the obstacles, or constructing them anew.

79. The preparations for withstanding a charge, and the defence of a strong *point d'appui*, follow the principles of the defence of a permanent work; on those occasions, also, the engineers assume very important duties.

SECTION 4.-PURSUIT AND RETREAT.

So. When victory is won in an engagement, it is very essential that a fierce and resolute pursuit be immediately undertaken, so that the effect of the defeat may be driven home by the destruction of the enemy's forces. For this reason, every unit which has dashed into the enemy's position should open a severe pursuing fire, and, when the enemy is about to escape from the zone of our effective fire, at once rapidly pursue him. The superior commander will rapidly organize a pursuing force from those units which are comparatively concentrated and conveniently placed for an advance, and make this force responsible for the pursuit; those units who are already in pursuit will be re-formed, and preparations made for a fresh advance. On these occasions the engineers attached to the pursuing force must move near its head, clear away obstacles prepared by the enemy, and facilitate the movements of the pursuing force, more particularly of the artillery.

81. During the pursuit the removal of obstacles must be extremely prompt; if this work is delayed the enemy will succeed in escaping from our rapid pursuit. The commander of the engineers attached to the pursuing force, therefore, should quickly come to a decision as regards the configuration of the ground and carefully consider the likely points on the enemy's line of retreat where obstacles may be constructed, and also the method of construction; if necessary he should prepare the requisite tools and stores beforehand; he should also send out officers far to the front to reconnoitre the obstacles prepared by the enemy, arrange for methods of removing them, and to ascertain whether there is a good route for making a detour round them.

82. After an action, the exhaustion even of the victors is considerable; but both the strength and spirit of the vanquished are very low, and their exhaustion has almost reached the extreme limit. In order that the pursuers may continue the pursuit resolutely, therefore, every officer must not hesitate to make demands upon his men for the utmost exertions possible.

83. The essential point in the conduct of a retreating action is to rapidly get free from the enemy; for this reason the superior commander will carry out the retreat by making arrangements to move in as many columns as possible, after indicating the objective of the march, detailing the covering troops, and pointing out the covering position. At this time the engineers will prepare the covering position and construct obstacles to delay the enemy's pursuit; if necessary they will also be detailed to repair the roads on which the retreat takes place, and so facilitate the movements of the force.

84. When the superior commander has decided to retreat, the engineer commander, acting in conformity with his intentions, will send out as quickly as possible several officers to reconnoitre various parallel roads leading towards the destination of the retreat ; according to requirements a sufficient number of engineers will be sent forward to repair the roads.

85. As soon as the superior commander has made his dispositions for retreat, a certain number of engineers will usually be detailed to the covering force, and the others divided among the columns as necessary; at this time, if the engineer commander has already received the superior commander's wishes, he may carry out the reconnaissance in connection with the preparation of the covering position. 86. A covering position is selected in accordance with the general situation, so that the retreating force may be able to concentrate under its shelter, and also be able to make a sortie. The artillery position requires to be chosen, as much as possible, to the flank of the line of retreat, or on high ground in the vicinity. The engineers will take especial care to clear and repair the roads so that the artillery can occupy their position easily, and evacuate it rapidly; if necessary they will carry out any work to render the close approach of the enemy difficult.

87. It is very advantageous if the covering party can become the rear guard at once; if the situation does not allow this, however, a new rear guard is detailed.

The engineers attached to the rear guard are responsible for delaying the enemy's advance by either destroying or barricading the roads and bridges, etc. If the place and method selected are suitable, a considerable effect is gained; and if the enemy is prevented from repairing the damage, by means of a few cavalry and infantry, the effect is still greater. The engineers, therefore, even if the enemy's pursuit is extremely hot, must not consider their own casualties at all, but must carry out their work coolly and accurately. Further, when the rear guard halts with the intention of checking the enemy, it is often necessary for the engineers to construct some works.

88. When it is anticipated that a retreating force will occupy a new position, the engineer commander, in accordance with the intentions of the superior commander, should make preparations to join up the various portions of his command which are distributed among the several columns, during the retreat, so that he can have them under his hand immediately after arriving at the new position.

On these occasions the majority of the engineers are often sent on ahead in order to prepare the position.

SECTION 5.—THE DELAYING ACTION.

89. The object of a delaying action is to avoid a decisive engagement, and to gain time.

When troops detailed to cover any operations have to join battle, they usually fight a delaying action. There are also occasions when the troops in the enemy's front adopt the same course, when it is intended that they should wait for an opportune debouchment of troops detailed to surround, or make a turning movement against, the enemy, etc.

The works executed in a delaying action are, generally speaking, the same as in a defensive action; it is important, however, that they are carried out bearing in mind whether the subsequent operations will be defensive, or whether the offensive will be assumed. 90. In delaying actions, in every case the units in the front line will usually be deployed on a front wide in proportion to their strength; it is often specially important, therefore, for the engineers to execute in these engagements a considerable amount of dummy, and covered, works.

SECTION 6.—RIVER FIGHTING.

91. Rivers and streams intercept both attacker and defender, and render their movements and scouting difficult. When properly utilizing their special characteristics, therefore, the attacker can surprise the enemy, or, deceiving him, overcome his opposition, cross the river and deliver an attack; while the defender, according to the object in view, can assume the offensive at the moment that the enemy is half across the river, or else can confine himself to opposing the passage. The engineers, therefore, especially in the attack, must play a very important *rôle* in preparations for the passage of a river.

92. In the attack, the engineer commander, in accordance with the intentions of the superior commander, will reconnoitre positions for bridging, for the crossing of the covering party, and for the forming up of the bridging train; if necessary he will find out whether there is any material that can be improvized, available. For this purpose he will employ a certain number of engineer officers; it is advisable for the commander of the bridging train, also, to reconnoitre the ground where the train is to form up.

The site for the bridge will usually be a place opposite an important tactical point, and conveniently situated for an advance; it should possess a suitable covering position, and be hidden from the enemy's view and fire, the ground on both banks should give free communication, and have suitable positions for the troops to assemble, and for the bridging train to form up. Further, the state of the river must suit the bridging material to be employed, the work to be executed on both banks must be simple, there must be a suitable place for laying out stores, and the banks must be convenient for launching boats.

The place where the covering party cross must be chosen in a locality as near as possible to the site of the bridge without interfering with the bridging work; it must also have several departure and arrival points, convenient for embarking and disembarking.

The forming-up ground for the bridging train should be selected near the site of the bridge, and be of the required width; it should be a spot where the surface of the ground is as level and as hard as possible, so as to facilitate the movements of the vehicles, and the unloading and arranging of stores.

In collecting improvized materials, they should be taken as much

as possible from near the bridge site, and particularly from points up-stream, for convenience in transportation.

93. The passage of a river in presence of the enemy is extremely difficult; it is, therefore, necessary to surprise him, or to deceive him by a demonstration and then cross rapidly. It follows, therefore, that the reconnaissance, and every movement in connection with the passage, must be concealed from him. Consequently the preparations for the passage should be carried out at some spot out of the enemy's sight and hearing, and should be completed as much as possible before beginning work on the bridge; bridging must often be carried out at night and completed before dawn.

94. When crossing a river in presence of the enemy, it is almost impossible to avoid discovery up to the very last moment, and it often happens that the rest of the passage has to be carried out by sheer force after half of it has been accomplished. The attacker, therefore, in order to cope with this eventuality from the first, will place his infantry and artillery under cover, and take up a position with them beforehand on the near bank, in addition to taking any other steps he can think of. The engineers also will complete all necessary preparations, and calmly continue their work even if hindered by the enemy.

95. In bridging work it is usual to send a party of infantry, supplemented if necessary by some cavalry and artillery, to occupy any important ground on the farther bank, so as to cover the operations; with this in view the engineers should prepare beforehand as many boat rafts as possible, and be responsible for ferrying over the covering party.

Even during bridging operations, the engineers must make use of as much material as possible in the way of boats and rafts, provided the actual work on the bridge itself is not delayed, and endeavour to pass the infantry of the force to the further bank, after the crossing of the covering party has been completed.

96. The moment for the passage of the covering party is determined after taking into consideration the general situation, and, in particular, the configuration of the ground; it is essential that it should not be carried out prematurely, or our intentions will become known to the enemy.

In transporting the covering party across, as many units as possible must be landed simultaneously on the enemy's bank at the first journey; care must be taken not to break up these units.

97. The spot where the demonstration is made must be chosen so that the enemy may be deceived into thinking it is the point for the real crossing; and various bridging operations must be carried out there so that the enemy cannot distinguish them from those carried out at the real crossing point.

98. In the case of bridging operations in the presence of the enemy

column stores are principally used; in order to meet any subsequent demand for these stores, however, it is very important that they should be replaced by improvized stores as quickly as possible.

The taking down of any bridge will usually depend upon the order of the superior commander.

99. The secret of defending a river is the assumption of the offensive when the enemy is half across. For this reason observation parties should be posted at all anticipated crossing places, while the main body should be concentrated and placed at some spot whence it can rapidly confront the enemy from whatever direction he should come. It is very important not to be deceived by a demonstration on the part of the enemy ; cavalry, therefore, will be sent forward to the farther bank to search out the enemy's dispositions. At those places, however, where it is specially important to ascertain whether the crossing is real or false, engineer officers should be sent out to reconnoitre the enemy's intentions.

100. In the defence, the engineers should first collect any material for crossing that exists in the neighbourhood, and moor it on the near bank; they should either destroy, or prepare for demolition, any bridges that might be used by the enemy; they should reconnoitre fords, and, if necessary, carry out any work required to make the enemy's crossing by means of them difficult. Finally, they should complete any arrangements necessary for the onset of the main body, and for communication and observation, at the moment when the offensive is assumed.

IOI. In the case of a defence whose object is to delay the enemy, the troops will be posted directly along the river; on these occasions the engineers will be specially responsible for the preparation of positions, and for obstructing all the enemy's intended plans for the passage of the river.

SECTION 7 .--- HILL, WOOD, AND VILLAGE FIGHTING.

102. In all mountainous regions the ground for deployment is narrow, intercommunication inconvenient, and movements difficult; it consequently often happens that all subordinate commanders are required to act on their own initiative.

In hill fighting it is often necessary for a portion of the engineers to be divided amongst the various units.

103. In mountainous country, both in attack and defence, efforts are made to occupy a position which commands the enemy, where artillery, and particularly mountain artillery and machine guns, can be used to sweep roads, valleys, and slopes with their fire, and where it is easy to observe the enemy's movements. The engineers, therefore, with this end in view, are responsible for perfecting all arrangements for intercommunication.

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104. In mountain fighting it is necessary for the attacker to advance, making use of roads, valleys, and crest-lines leading in the enemy's direction, so as to cut off his line of retreat by surrounding him, or by threatening his rear with a distant turning movement. In order to attack, every unit makes use of dead ground and endeavours to seize a *point d'appui* or important saddle of the enemy's position; in the attack, therefore, the engineers must chiefly exert themselves in clearing the roads. After the attack is successful, and when a portion of the artillery, or machine guns, are about to join in with pursuing fire, it is especially necessary that the required arrangements should be carried out with rapidity.

105. In the defence of mountainous country, all roads leading in the direction of the enemy must be strongly guarded. When the communications are good the number of troops allotted to the various sections of the defence should be reduced, and the main body turned into the general reserve and stationed at some spot whence they can easily debouch ; when communications are bad it is better to distribute the general reserve in several places. The troops in the first line must occupy important cols, and must be disposed so that they can command with their fire the valleys and slopes from the summit; in particular, they must be able to flank dead ground. The engineers, therefore, will take especial care to arrange for the flanking of dead ground; they will also make special provision for the cover of positions on the tops or sides of the hills from the concentrated fire of the enemy; and they will clear the necessary passages for the advance of the general reserve.

106. When a wood or village exists on a battlefield, they often become the focus of the fight; the defenders may occupy them and form *points d'appui*, while the attackers may utilize them as points of support for further operations. In the case of these topographical features, however, as movements and vision are restricted and control difficult, the engineers must carry out considerable intercommunication work.

107. It often happens that an enemy who is relying on a wood, and especially an enemy relying on a village, offers a stubborn resistance. In the attack of such, therefore, the engineers should destroy any obstacles, walls, etc., clear a path for the assault, hurl hand grenades if necessary, and, in conjunction with the infantry, drive out the enemy. When the enemy retreats, an immediate advance must be made on his heels, the obstacles on the route cleared away, and efforts made to push forward through the further edge of the wood or village ; at this time, if the enemy is still holding on to any house inside the village, the engineers will destroy the walls and drive him out. The necessary signposts must also be provided without delay for the benefit of the troops in rear.

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108. When occupying a wood, the edge of a wood which can be easily distinguished by the enemy should be avoided, and a firing line selected in rear of the edge, at such a distance that the tree trunks do not obstruct our fire; in open, straggling woods, the above principle is especially applicable. In the case of very dense woods, there are times when it is advantageous to prepare the firing line in advance of the wood, and only use the wood itself to conceal the troops in rear. The engineers are responsible for clearing paths, erecting signposts, blocking up unnecessary roads, and preparing obstacles along the edge of the wood, etc.

109. When the construction of the houses and walls of a village is strong, the perimeter may be made the main line of battle; when the houses are made of wood, however, they are very liable to catch fire from the enemy's shells, and consequently should only be used for concealing the troops in rear, while the firing line had better be established in front. When the perimeter is made the fighting line, the area each unit is to defend must be settled in accordance with the condition of the houses and walls; even if the enemy should break in at one place, arrangements must be made that the other areas are not affected. It is essential to select a strong building in a suitable position, even when in the interior of the village, and to occupy it in order to facilitate any subsequent attack made by us to recover the place.

The engineers will prepare the walls and houses for fire, and arrange for necessary internal communications; when the troops are divided up among different houses, or the reserve located in the village, this is particularly important. It is also essential that unnecessary roads are blocked up.

110. In the defence of a village, when there is a hand-to-hand fight with the enemy round the enclosure wall, the engineers throw hand grenades, and, co-operating with the infantry, drive the enemy back.

SECTION 8.—THE ATTACK AND DEFENCE OF PERMANENT WORKS. General Rules.

III. In the case of a permanent work, the arrangements for protection against assault are generally very complete; consequently the attacker approaches the enemy by means of saps and mines, on the surface of the ground and beneath it, and destroys these arrangements before delivering a charge. The defender also opposes the approach of the enemy by the same methods, and endeavours to preserve the arrangements that have been made for protection against assault.

112. Sapping, mining, and work in connection with the assault, both in the attack and the defence of permanent works, mainly

depend upon the special skill of the engineers; and all of these usually have to be continued during many days under the most severe and arduous conditions.

The Attack.

113. In the attack of a permanent work, successive attack positions, based on a detailed plan, are usually made for the advance : the final advance is then carried out by means of sapping and mining, both on the surface of the ground and beneath it, until the crest of the glacis is reached; here an assault position is prepared as a *point d'appui*, the arrangements for checking the assault destroyed, and a charge delivered. When the arrangements for checking the assault are not very complete, however, or when the resistance of the defenders is not very stubborn, while the effect of our artillery fire is very great, every effort should be made to construct an assault position at such a distance in front of the fort that the charge can be delivered at one stroke, so as to carry the place at once with a single determined onset.

114. As the attack works gradually advance, and approach very close to the enemy's fort, the work is exposed even at night and becomes extremely difficult to carry out; consequently the final approaches, and attack positions, have to be constructed by means of sapping. The engineer commander, therefore, in accordance with the intentions of the superior commander, and bearing in mind the enemy's dispositions and the configuration of the ground, will determine the objective, and starting places, of the saps, and also the number of approaches; based on these decisions, the officer in charge of the construction of the saps will settle the direction of the approaches, their number, and the places for beginning them.

115. In excavating the sap, endeavours will be made to reach the destination as rapidly as possible; for this reason the enemy's dispositions will be continually reconnoitred, and the direction and number of the saps altered, so as to suit the occasion. Further, whenever there is an opportunity of carrying on the work while exposed, it must be pushed forward with the utmost ardour; at night, and when there is a thick mist, etc., the enemy should be surprised, and by rushing forward, as much cover as possible rapidly thrown up; by joining this up, and forming approaches and attack positions, every effort must be made to expedite the progress of the attack.

116. When it is known or conjectured that the enemy is mining, or if the attack saps are actually destroyed by their mines, and their progress has to be stopped, an attack position will be formed round the area of the explosion, and the subterranean enemy subsequently driven away by means of mining; our advance will then be resumed both on the ground, and beneath it.

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117. When about to drive mines, the engineer commander will judge the position, direction, and number, etc., of the defenders' mines, and make those ones which he wishes to destroy his objective ; one system of mines will be settled for each objective, and the engineer commander will determine the position of the trench from which mining is to be started, and also the number of mines that are to be driven.

118. The trenches from which mining starts are usually in front of the attack position, and are arranged so that each system of mines should surround its objective as much as possible; their position is fixed so that they may be covered by the fire of the position in rear, and that they may not be damaged by the explosion of the defenders' mines. There are occasions, however, when mining starts from the attack position itself.

119. The officer in charge of a system of mines should see that the advance of the heads of the mines is uniform, so that the flanks of our mines may not be exposed to the defenders' mines; consequently, if even the slightest phenomenon should appear either underground or on the surface, it must not be disregarded, but continually watched, and the enemy's dispositions observed; it is also essential that all our movements should be concealed, and no material for observation given to the enemy. It is also of advantage to make use of every expedient to deceive the enemy, and mislead his judgment.

120. The officer in charge of a system of mines should advance by means of saps if an opportunity occurs, and endeavour to break into the middle of the enemy's mines by sinking a shaft.

121. As each mine advances, and the time arrives for blowing up the enemy's mines, a charge chamber should be immediately prepared at the head of each mine, these exploded simultaneously, and the craters occupied.

Sunset is usually a suitable time to select for the explosion, so that the craters may be occupied under cover of night; while waiting for this moment, however, one may be forestalled by the enemy, and suffer very great damage; rather, therefore, must one be too soon, than too late.

The party detailed for the occupation of the craters will complete all its preparations before the explosion, and take post at the nearest point where they will not be injured by it; after the explosion they will immediately advance towards the crater, the infantry establishing themselves on the lip and preventing the enemy making a sortie, while the engineers prepare the place for fire, and excavate the rearward communications.

122. Having occupied the craters, these are connected up, and an attack position formed, while mines are driven from the bottom of the craters. 123. After the explosion, if the enemy's mines can be discovered and an entry effected into them, it is a great advantage; if an entry is once made, the utmost exertions must be put forth in order to brush aside the enemy's opposition, and occupy as much of his mines as possible.

124. The craters formed by the enemy's explosions must also be occupied without losing any time.

125. When the attack both on the surface and underground has progressed, and reached a point in front of the crest of the glacis, craters are formed, joined up, and attack positions formed by enlarging them ; these positions must surround the front and flanks of the fort, so that the assaulting columns can advance from several directions.

126. When the assault positions have been constructed, mines will be pushed on again, the counterscarp wall and the arrangements for flanking defence destroyed, and a passage cleared across the ditch. Efforts will now be made to drive out rapidly the enemy in occupation of the remaining counterscarp mines and flanking casemates in the vicinity.

127. If the situation permits, an advance will be made by rushes above ground, and the ground in the neighbourhood of the glacis crest occupied; cover will be thrown up here, and shafts sunk and exploded.

128. When the counterscarp wall has been overthrown, and the arrangements for flanking defence destroyed, the obstacles in the ditch, and the escarp wall will be destroyed. If one cannot anticipate being able to carry out a single determined charge at one stroke, on account of the garrison of the fort still resisting with the utmost stubbornness, and the neighbouring forts pouring in a deadly fire, one is compelled to drive mines once more, this time beneath the parapet, with the object of overthrowing it. If possible the escarp slope and exterior slope should also be successively occupied by means of sapping, and the advance continued.

129. When the routes for the assault have been completed, the assault is delivered. In order to utilize the preparatory fire of our artillery, the assault is usually carried out by day; it is of advantage to deliver it just before sunset, so that the work in connection with the occupation of the place may be carried out under cover of night.

130. When the assaulting party occupies the assault position, their movements must be circumspect, and care taken that they are not discovered by the enemy; when it is impossible to avoid loss from the enemy's fire, it will be necessary to occupy the position only a short time before the assault.

131. When the moment for assault arrives, the infantry in the foremost positions will subdue with their fire the enemy established on the parapet. The assaulting party will form several columns

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according to the number of routes for the assault and, directing themselves against the front, flanks, and gorge of the fort, charge simultaneously. At this time the engineers will advance in front of each column, completely destroy the enemy's hastily-constructed obstacles, and facilitate the rush of the column ; a party of engineers will also follow immediately in rear of the assaulting party, in order to carry out work in connection with the occupation of the position, and clear rearward communications, after the assault has succeeded.

132. At the time of the assault, when about to cross over the ditch by means of the assaulting tools and materials, these must be thoroughly prepared according to the state of the demolitions; when the infantry are to make use of them, it is essential that they should thoroughly master the methods of using them, under the guidance of the engineers, before the assault.

133. After the assault has proved successful, and even when the assaulting party have already occupied the parapet, a stubborn enemy will still continue his resistance from the interior of the fort, or from the vicinity of the gorge; consequently the engineers, in conjunction with the infantry, will carry on a vigorous fight with rifles and hand grenades, and expel the enemy from the fort. The rest of the engineers will repair the parapet, and prepare it for holding.

134. After a successful attack, when the enemy has been completely driven out of the fort, the engineers, in order to make its occupation secure, will at once repair the fort, especially the gorge. If necessary they will rapidly construct obstacles, or repair the ones already existing; search for any land mines prepared by the enemy, and cut the train; and rapidly open up the rearward communications.

The Defence.

135. In the defence of a permanent work, the work which the enemy is carrying out must be reconnoitred, his intentions judged, and his preparations for approach and subsequent assault checked to the utmost of one's power.

136. When the enemy has begun his attack works, the defenders should frequently carry out small sorties, and hinder his operations; usually the most advantageous moment to seize is when the enemy is about to begin work. When carrying out a sortie, care must be taken that the enemy does not pursue, and force an entry into our position.

137. When the enemy is gradually approaching, and intends advancing by means of saps, the engineers will usually check him by sapping forward to some place where they can bring flanking and oblique fire to bear upon him, and preparing a position there; they will also, in co-operation with the infantry, dash out against the head of his saps, drive the enemy away by means of explosives and hand grenades, and endeavour to hinder his work as much as possible. 138. The enemy will often advance with a single rush, under cover of night, fog, or a fierce artillery bombardment, and try to throw up cover; the engineers must therefore continually be on the watch against this, and lose no opportunity of checking him.

139. When the defenders know that their fort lies in the direction of the enemy's attack, they must immediately supplement the mines that are already constructed; the officers in charge of each system of mines, therefore, must at once start work, either based on alreadysettled plans, or, if necessary, after settling on a new scheme.

The mines of the defence must be pushed forward as far as ventilation will allow, so as to compel the enemy to start mining from a distance; the depth of the mines should be fixed so as to allow of the enemy's mines being blown up from below.

140. In order to deceive the enemy, and engender in him a feeling of uncertainty and fear, it is of advantage to prepare beforehand detached powder chambers in an area where no mines exist, particularly towards the front of our mines.

141. When the enemy's saps have advanced, and reached the sphere of explosion of our mines, the latter must be exploded, and the enemy compelled to continue his advance by means of mining.

142. When the enemy begins mining, not only should his advance be checked by means of our mines, but every effort should also be made above ground to hinder the progress of his work ; the engineers, therefore, must endeavour to destroy the entrance of the mine, either by a stealthy advance, or by making a sortic with the infantry.

143. As the enemy's mines advance, and reach the neighbourhood of our mines, bore-holes should be made or branch galleries driven in a suitable direction for blowing up the enemy's mines, as far as it is possible, from a flank; the explosion should not be too soon, but should take place as soon as the enemy's mines can be destroyed by it.

144. When a crater has been formed by one of the enemy's explosions, the engineers will dash forward resolutely with the infantry, hurl explosives and hand grenades, and use every effort to prevent the enemy occupying the crater; they will also endeavour to blow up the bottom of the crater from below.

145. The enemy sometimes advances by rushes without mining, until he reaches the vicinity of the crest of the glacis, which he makes a starting point for driving his mines; the defenders, therefore, must closely observe the enemy's movements, and use every effort to check his operations.

146. Should the enemy force his way into our mines after an explosion, every effort must be made to drive him out; if the situation does not allow this, barricades will be constructed, and efforts made to dispute his advance step by step. If it should

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gradually become impossible to hold the mine, it must be completely destroyed by a small explosion, and its use denied to the enemy.

147. When the enemy has gradually advanced, occupying as he comes ground both on the surface, and below the surface, and is about to construct a position in the vicinity of the crest of the glacis, the engineers will hinder him by hurling hand grenades, or else blow up his works by means of subterranean boring.

148. Even when the flank defences and counterscarp wall have been already blown up, the defenders must still stand fast in the nearest casemates, stubbornly check the enemy's entry, repair the flanking defences as much as they can, or else rapidly construct new arrangements for flank defence either in the ditch or outside the fort. They should also clear away, if possible, the earth heaped up in the bottom of the ditch on account of the demolition of the counterscarp wall.

149. When the flanking defences, and outer ditch have fallen completely into the enemy's hands, and he has begun to drive fresh mines in the escarp, the engineers will hinder him both on the surface of the ground and beneath it; they will also prepare new defence works inside the fort, and near the gorge, convenient for successive lines of defence.

150. When the parapet of the fort has been already destroyed, and the enemy, climbing up the parapet, charge in, the engineers will co-operate with the infantry and drive him back by means of hand grenades and the bayonet; even if a portion of the parapet be eventually occupied by the enemy, a counter-attack must be delivered so as to surround the enemy, and strenuous endeavours made to drive him out.

151. When the enemy's charge has been repulsed, the engineers and infantry will securely occupy the parapet, repair it if necessary, and prepare for the enemy's return to the charge.

152. If the counter-attack is unsuccessful, and the fort is about to fall completely into the enemy's hands, he will be hindered in the works he is carrying out with a view to occupying the place, the previously-laid land mines will be exploded, and the enemy destroyed.

SIEGES AND THE DEFENCE OF FORTIFIED PLACES BY THE BRITISH AND INDIAN ARMIES IN THE XIXth CENTURY. (Continued).

By COLONEL SIR EDWARD T. THACKERAY, V.C., K.C.B. (LATE R.E.). THE SIEGE OF SEBASTOPOL (continued).

The Way in which France and England administered to Their Armies.

In this work—only relating to siege work, and not being intended to include any description of the battles fought between the Russians and the Allies—no attempt has been made to describe the Battle of Balaklava fought on the 25th October, with its famous Charge of the Light Brigade, or of the heroic Battle of Inkerman fought on the 5th November.

We may now proceed to a short description of the way in which France and England ministered to their armies in the East.

To say nothing of our English stepping-stone, Malta, the Allied Armies were at first established on the territories of an ally, the shores of the Dardanelles and the Bosphorus, without confronting an enemy. Next, having been moved to Bulgaria they prepared to undertake regular operations in the field by striving to collect with all speed the requisite means of land transport.*

Next, transported by sea to the Crimea, and there landing without opposition, they seemed to have dominion of a country abounding in food for man and beast, and means of land carriage. Then, by their victory on the Alma, they converted their dominion of the country into unresisted possession, and for a moment it seemed that the task of supplying the armies had been happily lightened. But this only lasted for five days; for by their flank march, commenced on the 25th, the Allies abandoned their conquest of almost all the Crimea, and by descending the Mackenzie Heights, made the step they were taking irrevocable.

Next, intent on the siege, they suffered themselves to be compassed about, and imprisoned upon a small area of barren ground; . and then it became evident that, at least for some time, the life of the troops must depend altogether upon what might be brought to them by sea.

* When the orders came out which suddenly shifted the theatre of war from Bulgaria to the Crimea, Mr. Filder had already collected 5,000 beasts of burden.
But another and even more trying change yet awaited them; for in November, when already bleak winds and chill rains were sweeping over the Chersonese, it was determined that where the armies were, there they must be prepared to lie for months, and that the French Intendance and the English Commissariat must meet, as best they could, the huge accession of wants that would be created by striving to keep troops alive on the top of the Chersonese Heights throughout a Crim-Tartary winter.

Trusting mainly to their own stores at home not only for articles of equipment and all implements and munitions of war, but also for flour, corn, biscuit, coffee, wine, spirits, and salt meat, they sent out all these things to the shores of the Bosphorus; there established magazines and hospitals, and thus constituted for their armies a secondary base of operations less remote from the theatre of war than the south coasts of France and England.

For the means of land transport, fresh meat, vegetables, forage, and timber, if needed, they trusted mainly at first, of course, to the resources of the countries occupied by their armies; but when the Allied Armies suffered themselves to be penned up upon a small barren corner of ground, there was the anxious task of providing them by sea with everything that they needed, however bulky and cumbersome, so that, when disembarked with great labours from the ships, the freights would not only include huge parks of artillery, and munitions of war, but moreover crowd acres and acres with draught and pack horses and mules, with camels, wagons and carts, and herds and flocks awaiting slaughter, with pyramids of grain and flour sacks, mounds of vegetables, ricks of hay and straw, hillocks of charcoal for fuel, and numberless stacks of timber.

Distressing experience proved that a Government buying things for an army from traders at home may not only have to wait, but in spite of all the money it offers, to go on waiting and waiting during a lengthened period. It took five months to supply our troops on the Chersonese with new tents, and even seven months elapsed before they received the whole number of 3,000 tents demanded in the month of November.

It soon became plain that the whole mercantile shipping of England and France, and of all the neutral countries besides, was insufficient to meet at short notice the growing exigencies of the campaign; so that for long periods together, there were troops, munitions, and stores of all kinds collected for shipment to the East, yet detained at the opposite extremity of Europe for want of vessels to carry them.

For want of means to land or trans-ship goods which had reached their destined ports, they too often remained on board during lengthened periods, and apparently it now and then happened that a vessel left the port she had reached without having completely discharged her cargo, yet continued to go on plying, so that stores

and munitions long moved to and fro on the waters. The insufficiency of the steam vessels at the command of the British also proved baneful to the health of the troops by curtailing their supplies of fresh meat and vegetables. Then remained the task of landing the stores, disposing them in magazines, drawing them up to the camp, the task of distributing them, and bringing them into due use. For this the French were more happily circumstanced than the Their harbours, Kaniesch and Kazateh, no less than the British. adjacent landing grounds, were so ample and convenient that with the great number of workmen they had at their command, there was nothing to hinder their disembarkation. The regiments had their own bakers with them, and until wounded or stricken by sickness, the French soldier used his own skill and resource in making the very best of his too meagre ration, and his wretched means of shelter. To the English, on the other hand, the advantages enjoyed by the French were all unhappily wanting. They had not sufficient harbours. and Balaklava constituted a very indifferent port of supply for the vast and ever pressing needs of an army.

To facilitate the landing of cargoes, the British engineers in spite of great difficulties managed to construct some wharves. But from the insufficiency of the harbours, and from the want of hands an accumulation of supplies lay for weeks and months on board the ships, some of which had to be kept in the roadstead outside for want of berth-room within.

Soon too a new exigency began to press hard on the Allies, for the enemy had been receiving great accessions of strength, and on the morning of the 25th October he took the offensive at Balaklava. From that day until the 5th November, Inkerman Day, the Allies were under a peremptory challenge, delivered by an army largely outnumbering them and during this critical period of twelve days, there was not, and could not have been, any thought of having roads made by the small number of British troops, which were performing the enormous tasks of besieging Sebastopol, defending Balaklava, and defending the Heights of Inkerman against the enemy's assembled hosts.

Although resulting in victory, the morning of Inkerman Day brought with it so great a disclosure of the enemy's strength that far from lifting off a weight from the minds of the Allied generals, it quickened their sense of the need that there was for preparing resistance to largely superior numbers. And so Lord Raglan began his measures for converting the road by the Col into a "metalled" highway. Four hundred Turks were employed on this task, and the work made fair progress during the few fine days which succeeded the storm of the 14th; but the torrents of rain which afterwards fell, and the sickness and deaths which ensued, proved destructive to the hope

of completing the work without many more hands. Of the 400 Turks who had at first been employed, only 150 could now be collected, and even these were in too feeble a state to be capable of performing anything like a full day's work. No hired labour worth having could be obtained at this season. The Commissary-General, it is true, was able to hire workmen on the shores of the Euxine and the Bosphorus, and he accordingly imported them by hundreds; but they died by fifties, and the duty of burying them deep enough to prevent their bodies from tainting the air became an additional task. Of course under such conditions the work made small progress; and yet the time had now come when the need of a completed road was most urgent, for torrents of rain were converting the old carriage tracks into a quagmire of tenacious clay. Again and again the irrepressible truth stood forth that the business of the road was one of life or death to many of our soldiers, if not indeed to the army.

The road, growing worse daily under the action of rain, was before long in such a condition as to be impassable for wagons, unless hauled through the clay by powerful teams. The change of draught power to the backs of horses or mules would have reduced the transport power, and yet the number and strength of our baggage horses and mules in the Crimea was being reduced daily and in mid-winter was so low as to be almost on the verge of extinction. Cold, wet, and hard work with prolonged want of food were not only killing the transport beasts, but fast weakening the artillery teams, and Mr. Filder was prevented from importing fresh horses and mules, of which he had numbers in readiness, because he knew that if they were landed, the means of feeding them were not available. Writing on the 29th January, Lord Raglan stated that Mr. Filder complained sadly of the nonarrival of the supplies of hay which he was led to expect he would receive from England periodically. The Commissary-General, on the 13th September, in his official despatch to the Treasury, wrote :---

"BEFORE SEBASTOPOL, 13th September, 1854.

" SIR,

Referring to my letter of the (blank) I have the honour to report, for the information of the Lords Commissioners of Her Majesty's Treasury, that the contractors having failed to provide the quantity of hay therein adverted to of proper quality, and under the uncertainty of being able to procure in this country a sufficient supply of forage for the great number of animals belonging to the two Allied Armies, I have the honour to suggest that 2,000 tons of hay be forwarded to Constantinople during the course of the autumn.

" I have the honour, etc.,

"WILLIAM FILDER."

The Treasury officials, however, did not comply with the Commissary-General's urgent request, but on the 10th October they wrote to Mr. Filder apprising him that it "would depend upon his further reports, whether steps should be taken to send out the hay mentioned in the letter of 13th September"; but at the same time they gave instructions for the despatch of a shipload with as little delay as possible. Until the 7th November no further step was taken; and owing partly to this delay and to the lengthened periods of time spent in finding and loading the vessels, the whole month of October passed away before the first cargo went off. Even to the end of November, the quantity of hay despatched from Eng'and's shores "during the course of the autumn" had reached 270, instead of 2,000 tons.

The army of General Canrobert was often, though not always, able to provide itself with good leaven bread, and to this there were added small allowances of rice, coffee, sugar, and salt; but as regards meat the soldiers were poorly fed, so that upon the whole their rations were hardly sufficient to fit them for bearing the hardships of a winter campaign.

The food of the English Army was a subject of anxious and ceaseless care to its chief. In addition to the regulation ration, consisting of either $1\frac{1}{2}$ lbs. of bread, or 1 lb. of biscuit, and 1 lb. of fresh or salt meat, Lord Raglan directed the Commissariat to supply daily to each soldier, as part of his ordinary ration, I oz. of coffee and I_{4}^{3} ozs. of sugar. Some weeks later, when the health of the army became seriously affected, Lord Raglan, upon the advice of the Medical Department, directed that there should be temporarily added to the daily food of the soldier, 2 ozs. of rice or Scotch barley, an extra 1 lb. of meat, and which was cordially appreciated above all a free ration of spirits. In the winter, for want of land transport the issue of rice was for some weeks suspended, and with the approach of winter, and the exhaustion of the supplies of cattle at Eupatoria, the issues of fresh meat became necessarily less and less frequent, the means of sea transport being wanting. As early as the 24th October, Lord Raglan commenced to obtain fresh vegetables for the British troops in sufficient abundance, but owing to delays in sea passages the quantity brought up to camp in good condition proved constantly less than was wanted for the welfare and health of the troops.

In the autumn, Dr. Andrew Smith recommended that large quantities of lime juice should be sent out, and a portion of this supply, 20,000 lbs. in weight, reached Balaklava on the 19th December, but the medical authorities did not apparently know that they had this resource close at hand, for until Lord Raglan interposed, and by that time scurvy had already proved baneful to health and life, no steps were taken for issuing the juice to our soldiers as part of their daily rations.

The French Army was ill supplied with means of shelter, for it mainly used the *tente d'abri*, a low canvas hutch, which is a miserable substitute for the ordinary tent.

Except when unhoused by the whirlwind of the 14th November the English Army was always sheltered by the ordinary bell tents. Still Lord Raglan felt keenly that against the rigours of a winter on the Chersonese, mere canvas would prove a miserably insufficient shelter, and he sent officers to Constantinople, and several ports on the Black Sea, to purchase large quantities of timber, nails, tools, and all the requisites for the construction of huts. But the task of hauling all the timber to the heights of the Chersonese, and converting it into huts was destined to be long retarded by the two great wants oppressing the British Army, want of transport and want of workmen.

An immense supply of all the thick woollen coverings lying on board vessels anchored off Balaklava that seemed best adapted for the soldiers was destroyed by the fury of a tempest. Lord Raglan succeeded in partly counteracting the effects of the tempest by obtaining warm clothes from Constantinople, but the scarcity of land transport between Balaklava and the camp prevented a general distribution.

The administrative arrangements provided for the care of our stricken soldiery were slight, crude, and indeed almost primitive. The London departments provided no efficient ambulance corps, appropriated no well-fitted vessels to the care and transport of our soldiers, sent out no artificers of the kind demanded, refused Admiral Boxer's wise request for a receiving ship at Constantinople. For attendance upon our sick and wounded in hospital, no provision at all was at first made; and in the absence of properly trained hospital orderlies, our people had to rely upon the clumsy old plan of drawing sergeants and soldiers from the ranks for duty as nurses.

Our establishment of hospitals in the Levant extended at one time to the Dardanelles, spreading yet even further to Rhodes as well as Smyrna. For the most part, however, our hospitals in the Levant were established on the shores of the Bosphorus. Of these one for our land-service troops at Koullali received a large number of patients, but by far the greatest part of our Levantine hospital system became concentrated at Scutari.

The supply of things greatly needed for the use of our hospitals was hampered, and for a long time prevented, by the want of decisive authority by those responsible for making the requisite purchases. With the absence of an anterior organization for hospital construction and management, and the want of authority and active brain power to make good past neglect, it can scarcely be wondered at that the endeavours to deal with any very large numbers of sick and wounded men was for a long time baffled.

One of the causes which grievously augmented the sufferings and consequent sickness endured by our troops was the excessive work which the siege cast upon them. When great reinforcements had brought up Canrobert's Army to a strength far exceeding Lord Raglan's, it was suggested that there should be a readjustment of the toil endured by the soldiery. Lord Raglan's appeals to the French commander for a re-distribution of the siege labours between the troops of the two Allied Armies did not certainly encounter a complete and final rejection, but they were invariably met by General Canrobert with reasons for postponing the desired relief, and afterwards by delays still more lengthened than the reasons first suggested appeared to warrant. No dilemma more embarrassing to a General could be imagined. On the one side, a certainty that the sufferings of our troops would continue undiminished, and that many lives would be sacrificed; on the other, a grave risk of disaster to the whole Allied Army, resulting from want of concord.*

Under these conditions the Allied Armies, still engaged day and night in a siege which they could not forsake, held fast the bleak heights of the Chersonese, and there, uncomplaining, and loyal, awaited the close grasp of winter.

The Storm of the 14th November.

On the evening of the 13th November, after wild storms of wind and rain, a calm set in which continued until an hour before sunrise on the following day; but then over the open downs on the Chersonese, and the neighbouring coasts, harbours, and roadsteads, there swept a violent hurricane accompanied by thunder and lightning, by heavy rain, hail, and sleet, and followed before the day ended by driving snow.

Of the French shipping, one man-of-war, the Henri IV., one despatch boat, and several supply vessels and transports were lost; but it was upon the British supply ships and the British camp that the disasters fell most heavily. Of the vessels freighted with munitions and stores for our army no fewer than twenty-one were dashed to pieces and totally wrecked, with grievous loss of life, whilst eight besides were dismasted. The *Retribution* (having the Duke of Cambridge on board) had her rudder unshipped, lost two of her anchors, and was long in extreme peril. Even in the little landlocked pool of Balaklava, the shipping there was rudely battered together by the whirling tornado; whilst, moreover, the captains of vessels

* This condensed statement is based upon numerous passages contained in Lord Raglan's Despatches, as well as his private letter. which had been lying outside, seized the one hope of saving their craft which seemed to be left them, and lawlessly drove their way in, carrying yet more confusion and havoc into a crashing thicket

of bulwarks, and masts, and spars. On shore no less than at sea the hurricane raged. It tore up trees by the roots, and not only were houses unroofed, but even the vast sheets of metal which covered the naval magazines of Sebastopol were partly carried away. Into the camp of the Allies the tempest at once brought "unspeakable misery."*

The tents not only fell, but many of them were torn to pieces and utterly swept away, with all the things they contained. Affrighted horses broke loose, and fled in all directions until struck down by the whirlwind. Wagons were overturned, and great quantities of food and forage which had been brought up to camp were destroyed or spoilt. The hospital marquees presented so great a breadth of canvas to the fury of the blast that in spite of every effort to uphold them, they were amongst the first tents to fall; and then not only men fit for duty, but the wounded, the sick, the dying, became exposed all at once to the biting cold of the blast, and deluged with rain and sleet.[†] The trenches were quickly flooded. The soldiers were unable to cook their food, for no camp fires could be lit. To this miserable condition of things no remedy could be applied; for the storm made it hard in the extreme to move from one spot to another, and not only men on foot, but the horses of riders attempting to make head against the blast were again and again overthrown. Under the fall of snow which began when the storm was abating, many laid themselves down without having tasted food, and some, benumbed by cold, were found dead next morning in their tents.

Amongst the twenty-one ships wrecked was the Prince, a ship containing everything that was most wanted: warlike stores of every description, surgical instruments, guernsey frocks, flannel drawers, woollen stockings and socks, boots, shoes, greatcoats, and all that the Government could devise for the equipment and comfort of the troops.

The Resolute, too, suffered total wreck, and she was the principal ammunition ship of our army. Of the Minié ammunition alone, there went down in her no less than 10,000,000 rounds.[‡] The loss of provisions and stores on board other wrecked ships was appallingly great, the hay alone destroyed being in quantities that would have sufficed for all the horses and mules of our army for a period of 20 days.§ That loss of hay was one destined to prove calamitous

* Journal of the Royal Engineers, p. 53.

Ibid., p. 55. § "Mr. Filder's great fear," writes Lord Raglan, " is want of forage for the horses. He lost 20 days' hay by the tempest."

[†] Ibid.

beyond measure. Lord Raglan, however, without losing an hour applied himself to the task of providing for the speedy replacement of his lost stores.

The disastrous 14th November was followed by a brief interval of fine weather; and as early as the 18th Lord Raglan intimated that the camps were "wearing a less desolate appearance." But already the sufferings and privations which the storm had inflicted on our troops, were resulting in an increase of sickness; and the horses, too, in great numbers died from the effects of exposure. Lord Raglan's plans for replacing the stores destroyed by the storm were so prompt and well conceived, that they speedily produced their intended effect, but there were some of the losses, and especially the loss of the hay, which no energy exerted from the Crimea could quickly repair. And it is certain that a large proportion of the hardships endured by our army in the following December and January were due to the hurricane of November.

Sufferings of the Armies.

Of the Russians engaged during winter at the war, a great proportion always lived with a roof overhead, some being in barracks in Sebastopol, some housed in neighbouring villages, some in huts, whilst even the troops out on duty, though suffering cruel hardships, had advantages over their enemy in the opposite camp, not only being accustomed to withstand northern winter, but also having behind them a garrison town and an arsenal. The roads broken up by floods of rain however increased their troubles to such an extent that administrative confusion was rife.

The Russians lying stricken with sickness or wounds were at one time 25,000; and the hospital succour in readiness fell so hideously short of the need, that the number of prostrated sufferers exceeded by more than 9,000 the number of hospital berths.*

The French, as compared with our people, enjoyed great advantages owing to their highly-organized system of war administration, their mastery of the art of campaigning maintained by long practice in Africa, the spaciousness of their harbours and landing places, and above all their ample numerical strength.

They used for shelter the *tente d'abri* consisting of separate slips of canvas which by aid of a short, small stick might be raised some 3 ft. off the ground. This in Africa had proved more or less successful but was too frail a thing as a means of protecting troops against the rigours of a Crimean winter and was denounced with indignation and disgust, for the shelter to be found in their dog-tents was only to be gained by crawling on all fours through the frozen or wet mud and snow without, to the mud and wet snow within.

* Todleben, Vol. I., p. 705 et seq

Before October had ended, the French War Department brought up or caused to be made a large quantity of warm clothing for Canrobert's troops and as early as the 28th November, a large portion of these supplies was already in camp. But the distribution long remained incomplete. Men in thousands were frostbitten, and many died; whilst of those who survived, the majority were grievously mutilated; and indeed it is declared that but few escaped the sad fate of being maimed for life.*

Without shelter in this severe weather, and also too often unfed, the French horses perished by hundreds; the cavalry were almost dismounted, the artillery and the land-transport trains lost half their teams, and this at a time when double teams were needed for moving even slight loads.

The accustomed rations of the French soldier were scarcely sufficient for any campaign of a kind entailing hard, lasting toil, still less for sustaining him under the hardships of the Chersonese winter. He was from time to time unsupplied with bread. The supplies of fresh meat were not only rare and scant, but of poor quality, while there was no supply at all of fresh vegetables, so that the men had to live upon biscuit and salt meat.

We learn that the admission of patients into the ambulances of General Canrobert's Army were as follows :—In October, 1854, 4,747; in November, 8,990; in December, 6,432; in January, 1855, 9,259; in February, 8,298; in March, 7,737; and in April, 6,323, making altogether 51,786.

It is stated that in the seven months which extended from the 1st October to the end of April, 4,901 men died in the ambulances alone, whilst the deaths in hospital during the four last of these months were 6,557, thus bringing such of the deaths as have not been kept out of sight by the want of monthly returns to the number of 11,458. Within the 20 months November, 1854, to June, 1856, the ambulances of the French, and four only, out of their 23 hospitals, received 23,250[†] patients afflicted with scurvy.

Lord Raglan's Army at that time was suffering under a great complication of ills. Their outpost duties were always anxious and harassing, their toils with spade and pickaxe fatiguing; but the men who suffered most were the guards in the trenches, often wet through from the first, who had to be sitting all night in postures which cramped their limbs. To such tasks in the middle of winter our men were too often kept no less than five nights out of six. Very often the weary soldier omitted the task of cooking altogether,

* "War appeared in all its horror; men exhausted by illness, scarce protected by a few rags of covering, arrived on the beach to be embarked."—*Rapport Officiale*, p. 76.

† "Dans le mois de Février, le scorbut, prend un developpement considerable, et menace d'envahir toute l'armée."—Rapport, p. 81. throwing away his salt beef, or bartering it with the French, and eating his salt pork raw, and thus depriving himself of nourishment or taking food in an uncooked or ill-cooked state, becoming an easy prey to disease. Whether by some misunderstanding, or by the paralyzing effect of cold and privation, many regiments were very slow to appropriate the warm clothing provided for them.

The evils affecting our camp kept on acting and re-acting upon each other with a baneful effect; suffering from wet and cold, and deprived of due rest by an excessive burden of duties, the soldier more than ever required wholesome and generous food, but benumbed and tired out with the stress of those very hardships which had made him need such a diet he too often shunned the toil necessary for grubbing up fuel and preparing his ration. Worn down by hard toil and wet, suffering from wants so pernicious as to be too surely followed by scurvy, assailed by cholera, dysentery, fevers, and numberless other complaints, the British army underwent appalling losses day by day.

The whole number of officers disabled by battle or sickness soon became very great, and in some regiments but few remained. The Royal Fusiliers at one time had only three officers left, but it was amongst the rank and file that sickness most destructively raged. On the last day of February the army, out of a mean strength of 30,919 for the month, had no less than 13,608 men lying in hospital. Between the beginning of November and the 28th February we lost in hospital 8,898 soldiers.

From time to time, at this period, reinforcements were landing at Balaklava, yet unhappily did not effect a proportionate and sustained augmentation of the number of men under arms; for the newcomers, all at once subjected to the hardships of the winter campaign, fell sick with great rapidity, so that within a few days, the fresh body of troops became rather a superadded assemblage of hospital sufferers than an actual accession of strength.

Even of the 11,000 men on the Chersonese still able to handle a firelock and keep their names out of the sick list, it must not be imagined that all, or perhaps even a great part, were free from grave bodily ailment; for there reigned in this suffering army so noble a spirit that many, though ill, refused to increase the labours of their comrades by going into hospital. All their hardships officers and men endured with a heroism unsurpassed in the annals of war, and there is good ground for saying, though of course only in general terms, that the men did not choose to complain of the hardships and privations under which they were suffering.

If the soldier had to endure grievous hardship and bodily suffering,

his General's portion was almost unceasing care, for to Lord Raglan every day of his life and "with dreadful exactness 'the morning state 'told all."* His visits to the divisional camps and hospitals impressed him more and more painfully with the extent of the sufferings endured. It was in general by continuous work at his desk that he obtained such distraction from grief as made endurance possible. In the whole multitude of his despatches and letters, general orders, specific directions, memoranda, remonstrances, and minutes that he penned at this time, as stated by the Historian Kinglake, there is not to be found one ill-aimed appeal, one random or misapplied word, one statement disclosing confusion or obscurity in the mind of the writer.

When the sick were carried down for embarkation to the port of Balaklava they often endured long delays and consequent sufferings, which however perhaps in most instances could be traced to want of hands and of space. No adequate arrangements had been made by the Home Government for removing them in vessels which were either sufficiently spacious, or properly equipped for the purpose; and although they had only to traverse a distance of some 300 miles, the privations and hardships they endured while making the passage, proved often such a cruel addition to their original sufferings that, during the months of December and January respectively, they died in the proportions of 85 and then 90 per thousand.

During a period of only seven months from the 1st October, 1854, to the end of April, 1855, out of an average strength of 28,039, there died in our hospitals, or on board our invalid transports 11,652 men, 10,053 from sickness alone. Of these misfortunes the causes were :—With the French, a scanty allowance of meat and a miserable kind of tent. With the English, excessive toil, an interruption of the land-transport power, resulting in many privations; and a grievous inadequacy of the means required for watching over the health of an army and tending the sick and wounded. The evil lay—not alone, and not even capitally—in the want of better means for facing a rigorous winter, but rather in the ugly predicament of having to winter at all without long antecedent preparation on bleak, open downs in Crim-Tartary.

In war, as we all know, dire predicaments result often from defeat; but here, strange to say, it was by the joyous path of victory that the Allies placed themselves to meet the winter on a high, barren promontory, without even a hope of keeping themselves alive unless by means brought them in ships from many and distant shores.

* The Quartermaster-General before the Chelsea Board, p. 171.

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Improvement in the Health of the English Army.

However, towards the end of February, matters began to improve. Owing to the assistance of a fund called the "Crimean Army Fund," administered by two honorary agents, Messrs. Tower and Egerton, an immense quantity of stores of every description were sent out from England, and a thousand tons of goods were sent out to Kadikoi, the chosen site of their magazines, somewhat more than a mile from the beach. Owing mainly to the skill and energy with which Tower and Egerton worked, and to their tact and good feeling, our army responded to their exertions in a spirit described as one of "universal goodwill." The thousand tons of gifts altogether are believed to have represented a value of about £60,000. The moral effect of these offerings upon the mind of the soldier was good beyond measure, showing the sympathy that united our people at home to their suffering army abroad. The advance towards good health went on steadily down to the close of the war. Computed in proportion to force, the decrease since January, 1855, in the number of admissions to hospital became so great during the last month of the occupation of the Crimea in 1856 that it might be indicated without very large error by a ratio of ten to one. So its numbers slowly augmenting, its toils at last happily lightened, its wants almost all supplied, the army regained health and strength.

THE SIEGE OF SEBASTOPOL FROM NOVEMEER 6TH, 1854, TO FEBRUARY, 1855.

The Allies, as it has been shown, having given their adversaries the priceless respite they needed for the Flagstaff Bastion, and not judging the Sebastopol front to be anywhere else in a state that would warrant assault, now found themselves committed to what seemed destined to prove a long siege.

Instead of approaching their object with that huge preponderance of numbers, before Vauban's time ten to one, which science had declared to be needed for the reduction of a fortress, they were, on the contrary, outnumbered by tens of thousands; the Allies had confessed themselves unable to invest the fortress on the north, whilst even on the south they were leaving the enemy free to come in or go out as he chose.

By a part of the Russian Army on their flank, and the garrison of Sebastopol entrenched along their whole front, the Allies had allowed themselves to be completely hemmed in on the land side. So long as they had been able to hope that within a few days they would break their way into Sebastopol, the delay suffered would be regarded as only a brief restraint to be followed by a dazzling conquest, and an end to all their troubles; but the moment they had resolved that the crisis of their enterprise should be indefinitely put off, the Chersonese on which they had alighted, as

though it were simply their stepping-stone, seemed thenceforth to be their prison. With their parallels, "first," "second," and "third," and all their siege apparatus, they still had the air of assailants, yet were not in reality minded to risk striking any prompt blow; and on the other hand, they were subjected to whatever might be adventured against them by an army which they could not shake off, and also by the garrison of a fortress which they had not even tried to invest. Whatever might be the difficulty of forcibly reducing Sebastopol, an undertaking to withdraw the Allies, and to cover their embarkation, would have been still more formidable, and must have proved an utterly desperate task.

Imagining that the enemy might some day renew his great enterprise of the 5th November, the Ail.es constructed, armed, and maintained defensive works on Mount Inkerman; threw up works of countervallation on their left; perfected the eastern and northeastern defences of Balaklava, and even strengthened yet further the hardly assailable lines which crested the Saponnè Heights on General Bosquet's front. Thus self-defence entered into the motives which impelled the now harassed Allies to toil day and night at their works.

It was still by the Flagstaff Bastion that the French were at this time hoping they might some day break into Sebastopol. They did not indeed try to lessen the distance of some 180 yards which parted their most advanced trench from the counterscarp of the opposite bastion, but they did their utmost to perfect the third parallel opened on the 3rd November, and prepare to break down by over-dominant metal the fire that threatened to rage against any column advancing to storm and capture the work.

As is usual with besiegers when prevented in their task of pushing forwards "approaches" by trench work, the French with great diligence resorted to the expedient of mining. They also by degrees saw that their own special task must include a great extension of siege-work towards their left. They therefore not only made ready to deal with the Flagstaff Bastion, but became step by step the besiegers of all the Sebastopol Front from the line of the Wironzoff Road to the edge of the Quarantine Bay. To maintain, to improve, and a little advance their approaches, to confront with new batteries an enemy ever restless and aggressive in his use of the pickaxe and spade, and finally to prepare for the object of supporting the French on their right, was all that in the way of siege work the British were able to do. They did no less than their utmost ; yet in face of the mighty defences piled up before them, could not at all make sure that they would be able to win for the French such immunity in the direction of their right front as was given them on the 17th October, when under the fire of our guns the Malakoff Tower was silenced, and the Great Redan lav in ruins.

The strain upon the fortitude of our army by the exigencies of siege work and continuous strife with the enemy, superadded to the task of living or painfully trying to live, was excessive. In the midst of its most grievous straits for want of other means of land transport, one might too often see hundreds of our weary soldiers, every man of them heavily laden, painfully employed in carrying up the supplies over miles and miles of deep quagmire, whilst also at the very same time might be seen on the track by Karani a team reckoning no less than from thirty to forty of our few surviving horses, engaged in dragging up to the front by ploughing through depths of clay some mighty gun intended for the all-demanding siege.

Whilst the suffering and hampered Allies could employ workmen only by hundreds, the Russians kept engaged on their works an organized body of labourers with a varying strength of from six to ten thousand; and if it be remembered that the enormously constructive sources thus possessed by the garrison was wielded by Colonel de Todleben, some conception will be formed of the inferiority in working power which kept down the Allies.

It was with these vast advantages, wielded by consummate genius, that the formidable colonel of Sappers proved able to work his wonders. Not even neglecting that quiet and unmolested "North Side" which a less wary man might have judged to be exempt from all risk, he converted Sebastopol into a mighty fortress prepared for the fight at all points, and defended on the land side alone by great guns already numbering 700, beside all the lesser artillery, held ready at every apt spot to confront storming parties with round shot, and volleys of mitrail. He closed the gorge of the Little Redan, and of the Malakoff, and afterwards that of the Flagstaff Bastion. To make sure that the French would meet with destruction in event of their carrying the Flagstaff Bastion, by means of underground wires he connected the powder magazine of the work with a peaceful spot. As regards the French mining operations, Colonel de Todleben met them by countermines.

By all the works thus accomplished did the great engineer make his fortress secure against any attack the Allies might attempt. But he did not so believe; he believed that with all his resources he could not defend the threatened bastion against a determined attack; whilst moreover he judged that the loss of the work would so split the Sebastopol defences as to ensure the fall of the place. But short of undertaking great sorties, Colonel de Todleben did all that he could to conduct his defence of Sebastopol in an eagerly aggressive spirit, and one might say that he manœuvred with earthworks as others manœuvred with troops.

Another way in which de Todleben maintained his aggressive defence was by sinking and maintaining "rifle-pits." So vexatious a kind of encroachment was not always to be maintained without provoking

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resistance, and the struggles for rifle-pits occurring in the course of the siege began with the exploit of young Lieut. Tryon, who wrested one of these from the enemy, and thereby won warm praise from both the Allied commanders. de Todleben also caused a sufficing breadth of ground to be scientifically chosen and duly taped out by skilled engineers, then delivered under cover of night, to strong working parties, who would instantly and swiftly entrench it. All this he saw could be done; and thenceforth the besiegers had cares which resembled in some sort those of people besieged; for too often the morning disclosed a small bit of what might be called a counter-parallel; and these lodgments soon became oppressive beyond measure. It was on the French, for the English approaches had been less closely pressed, that the lodgments especially frowned.* The explosion de Todleben effected on the 9th February did the French no physical harm, but he was convinced that by the vigour of his countermining operations, he caused the French to mistrust every foot of ground upon which they must tread when marching against the Flagstaff Bastion, and in that way did much to deter them from ever assaulting the work.

There was no resort during the winter to powerful sorties, which, as some able critics thought, the Russians ought to have hazarded, but of small sallies, ventured at night, the garrison made frequent use, so that owing to the hostile pressure which Todleben was always applying the guards of the trenches were constantly kept on the alert.

Another expedient used by the Russians seemed one less meant for the exigencies of actual fighting, than as one for dealing with soldiers surprised, confused, and distracted by a sudden incursion at night-time. At one time they certainly used the lasso, and also the gaff, or some tool resembling a boathook, as their means of first upsetting or otherwise arresting an adversary, and then so pulling him in as to be able to make him a prisoner. This abhorred innovation was so highly resented by the French that General Canrobert, under a flag of truce, made it a subject of complaint addressed to the Russian authorities; and in a magnanimous spirit of concession, General Osten-Sacken, commanding the garrison, put an end to the practice.

Burgoyne all this while had not ceased to insist that the Malakoff Front was the one more than all others meet for attack and had put forward counsels to that effect. In the face of our dread "Morning States," and the absence of any English succour approaching, he long clung fast to a hope that the honours of attacking the work which he held to be the all-mastering key of the position might accrue to his fellow-countrymen, and even when forced to see that no heavier share of siege work could be laid upon our people, still

 \ast Out of 34 lodgments, which at one time were counted, two only menaced the English.

tried to find a way, by proposing that Canrobert's troops should relieve the British infantry from the task of supporting the Left Attack, and that with the force then set free Lord Raglan should undertake the Malakoff.*

It was on the 20th November that the French had begun to push forward their great mining enterprise, and they had thenceforth conducted it with unwearying energy, their first design being to surprise the enemy by effecting an explosion under the Flagstaff Bastion. Unenlightened, it seems, by either spies or deserters, they worked their way forwards, moving their earth-trucks to and fro. Such work has always to be carried out with every precaution for minimizing noise which can be detected at a considerable distance, and at times located with some accuracy. The foe whom they had challenged by entering on this underground warfare was perhaps one more thoroughly practised, more highly skilled in its mysteries, more eager to use his resources, than any other man living; † and before they had burrowed their way to the ground required for their purpose, an enemy like themselves, subterranean, but silent, unheard, unsuspected, was awaiting them in his listening galleries.

The great engineer scarcely awaited the reports of deserters; for when he saw that the French did not push their approaches beyond the third parallel, he inferred that they would try to work their way underground, and he resolved to meet any such enterprise by a vast system of countermines. At length, on the 30th January, the expected reward of long toil was attained, for then Colonel de Todleben learnt that at the extremity of one of his listening galleries the French could be heard, and he was even able to assure himself that they were piercing ground on a level with that to which he pressed his keen ears when listening for signs of their presence.

In the strife between miner and counterminer, he who first hears his antagonist obtained the ascendant. Todleben with a great selfrestraint determined that before he assailed them he would let the French burrow still closer, and thus so reduce the thickness of the interposed clay as to give him the means of overwhelming them by an explosion of only moderate strength.

At length on the 3rd February, the fourth day after the one when the miner's approach was first heard, Colonel de Todleben fired a camouflet, which left undisturbed the whole surface of the ground overhead, but tore its way into the gallery where the French had been heard, killing two of their men as it passed and visibly finding its issue in the open air through ground behind their third parallel, thus showing him where lay the entrance to their system of mines.

* Journal of the Royal Engineers, pp. 63, 139.

[†] At one period of his life General de Todleben had devoted himself with the greatest zeal to the science of mining and at that period a very large proportion of his time was spent underground.

The French chief engineer, however, hoped that they might still draw advantage from their system of underground approaches on which much labour had been expended, because it would enable their miners to open up a line of craters which might afford cover, and perhaps made the beginning of a fourth parallel. He therefore by an explosion threw up one crater of moderate size, but it was seized and crowned and definitively held by the Russians, and the second design of the French being thus defeated, it resulted that so far Colonel de Todleben obtained and kept his ascendant at the seat of the underground war.

The works of defence on Mount Inkerman were by this time complete; and of those which from the first had remained in charge of the British they continued to hold; but the bulk of our troops on the Chersonese lay henceforth compactly disposed between the 2nd French Corps on their right and the 1st French Corps on their left.

Acting in concert, in so far as was possible, and each making good the other's deficiencies, the French and the British Armies began to fulfil the conditions laid down on the 1st January, and constructed two batteries which by means of flanking fires were destined to aid our Allies in their meditated attack on the Malakoff.

After his defeat at Inkerman, General Dannenberg was removed from the command of the 4th Army Corps, and replaced by General Osten-Sacken, and amongst those "reorganizing" directions, which General Niel had brought out, there was one which removed General Forey from the command of the 1st Corps d'Armée, and entrusted it to General Pellissier—an officer destined to reach, though not until some months afterwards, a yet more exalted position.

Under the directions of Lieut. Stopford, of the Royal Engineers, our people in the beginning of December constructed an electric field telegraph; and towards the close of the same month, Mr. Campbell, a civil engineer, began his operations for making the railway between Balaclava and the camp. In December the command of our fleet passed from Admiral Dundas to Admiral Sir Edmund Lyons.

Although in a measure disorganized by the bloody defeat sustained by the Russians at Inkerman, and by the immense loss of officers, yet so high was the spirit of their people, and so great the firmness, the skill, and the resource of the engineer then directing their energies, that far from yielding to depression, they carried on the defence which almost undid the curse of defeat, and so bore themselves that, after a while, they stood, as some thought, in less jeopardy than the baffled victors of Inkerman. It might indeed have been said of the besieged and the besiegers that during several months each lay at the mercy of the other.

Eupatoria.

Although up to the middle of the month of February, 1855, the Russians may perhaps be said to have obtained some ascendancy in the siege operations before Sebastopol after their defeat at the Battle of Inkerman, they suffered another reverse at Eupatoria, where they were repulsed by the Turks in an attack made on the city of Eupatoria on the 17th February, 1855.

The seaport town, Eupatoria, had surrendered to Admiral Lyons in the earliest hours of the invasion, and the Allies thus established close and friendly relations with not only the people of the town, but also their country neighbours. These countrymen, however, soon found that they were dangerously circumstanced, and when the Russian cavalry came near their homesteads, they hastened to fly from the imagined wrath of their Czar, took shelter within the town, and pastured their flocks in its neighbourhood.

Russian cavalry after a while drew a cordon about Eupatoria on its land side, and took care to maintain it so closely that the flocks in their neighbouring pastures were no longer safe against capture. Some ten thousand head of cattle, which would otherwise have furnished good meat to our suffering troops on the Chersonese, were seized instead by the enemy, and driven off into his camp.

Upon learning that General Khrouleff had carefully explored the ground, and considered it possible to take Eupatoria without grave losses, Prince Mentschikoff not only made up his mind to have the enterprise tried, but to have it conducted by one who, directly in the face of judgment pronounced by his immediate chief (Baron von Wrangel), had formed a counter-opinion, and imparted it to the Commander-in-Chief.

Thus it happened that on the morning of the 17th February, the Russians made a vigorous attack, opening their fire against the defences of Eupatoria with 76 pieces of cannon. It completely disabled one Turkish battery. It killed Selim Pasha, struck down another general and 19 men, brought about several explosions, and the town at last slackening fire seemed to own itself ripe for the assault. In columns of companies two of the chosen Azoff battalions moved forward. They approached to within some 25 yards of the ditch, but were then beaten back by the fire of the place. Soon, however, they rallied, and were advancing once more when stricken again by the fire from the parapet they again began to fall back.

And now a Turkish battalion pressed forwards with bayonets fixed, sprang on the beaten columns retreating across its front, and pushed them northward, and preventing them reaching shelter. With some 200 horsemen, who constituted what was almost the whole of Omar Pasha's landed cavalry, Iskender Bey trotted up on the flank of the beaten battalions, cut them off from the shelter of the Russian burial-ground, and pressed their retreat in

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the open till one of them, formed up at last in a hollow square, was able to stop the pursuit. The Russian loss was put at 760, and that of the garrison at 387.

This repulse might seem only a trifling discomfiture, yet (as oftentimes happens in war) was destined to gather some weight from the fact of its proving conclusive. From the moment of Khrouleff's retreat to the end of the war, Russia always acquiesced in the briefly-delivered arbitrament of the 17th February, and thenceforth left to her foes the absolute, unchallenged ownership of Eupatoria, which by many was believed to be the true key for laying open Sebastopol.

Although the little discomfiture thus sustained by the Russians was only of the kind that soldiers call "a repulse," the Czar Nicholas felt it acutely. By relieving Prince Mentschikoff of the command, he perhaps found some vent to his feelings, yet could not allay his anguish, and continuing to grieve, he fell ill.

The bare sequence of facts ran thus:—The Czar's troops were repulsed by the Turks on the 17th February; the telegraph soon told him the truth; and he died on the 2nd March.

(To be continued).



COL SIR LONSDALE HALE, Late RE

MEMOIR.

COLONEL SIR LONSDALE HALE.

MILITARY ENGINEERS have a wide field to cover. They are bound to specialize and have not much leisure to study the art of war as a whole, still less to write about it. Yet it cannot be said to be no concern of theirs when we have an Engineer officer as our War Minister, and another is commanding all the armies of France. It is well, therefore, that among the chief educators of the Army in the course of the last half century, the Corps can claim two—Charles Chesney and Lonsdale Hale. At Chesney's death Hale spoke of him as "one of that band of writers who have of late years striven so hard and so successfully to provide for the British Army a supply of sound military literature" (*R.E. Journal*, April, 1876). But he was under fifty when he died, and had not time to gain that farreaching influence which Hale acquired by half-a-century of indefatigable work.

Lonsdale Augustus Hale was born at Charterhouse on 11th May, 1834. He was the fourth son of William Hale Hale, Archdeacon of London and Master of Charterhouse (v. Dictionary of National Biography). John Lonsdale, afterwards Bishop of Lichfield, was his godfather. He was educated at Charterhouse and Woolwich, and was commissioned as 2nd lieutenant in the Royal Engineers on 21st December, 1853, being second in his batch. He became lieutenant on 21st March, 1854. At the end of that year he was sent from Chatham to Alderney, and in May, 1855, he was ordered to the Portsmouth district, which seems to have included Aldershot at that time. He was employed in the construction of the camp at Aldershot, and contributed some memoranda on stabling to Vol. VII. of the Professional Papers. He took part in amateur theatricals there, being an excellent comic actor. The Queen was present at one performance, and was so much amused that she caused him to be presented to her. In doing so, General Knollys assured Her Majesty that the young officer was as good at work as at play. He had joined the newly-formed A Troop of the R.E. Train when it returned from the east, and served with it at Aldershot and Chatham alternately. Colonel G. Philips, his close friend from those days, writes : "Shortly after my return invalided from the Crimea, I was

ordered to Aldershot. The R.E. were then in lodgings, and on my arrival I looked up Hale, *then a stranger to me*. I suppose he saw that I was very weak and pulled down, for he insisted on my occupying his bed while he slept on a sofa; a good practical Samaritan."

On 13th January, 1859, Hale was married to Emily, daughter of Hugh Hamersley, of Pyrton Manor, Oxfordshire. In the following month he went on foreign service to Corfu. On 10th May he was promoted 2nd captain. In July he was ordered to Gibraltar, where —with the exception of six months of sick leave—he remained till January, 1862, when he took up an appointment as Instructor in Fortification at Sandhurst. This was the beginning of his long career as a teacher. He remained at Sandhurst 8½ years. He threw himself heartily into the life of the place, took part in Staff College theatricals, and was devoted to cricket, though an injury to his right hand while rabbit shooting disabled him from playing. Charles Kingsley, then Rector of Eversley, was among his friends.

In July, 1870, when garrison instructors were introduced, Hale was made garrison instructor for the S.E. District, and three years afterwards he was transferred to the Home District. Notes of some of his lectures at Dover and Shorncliffe were printed under the titles, *Principles of Outpost Duty* and *What to Observe and How to Report It*. The latter went through several editions. It sprung from talks to the officers and N.C.O.'s of two cavalry regiments at Shorncliffe on the art of reconnaissance. After the Sudan Campaign of 1884-5, Colonel Percy Barrow, of the 19th Hussars, wrote from Dongola to tell him that the brilliant reconnoitring work of the regiment during the desert march was entirely due to the seed he had sown. He had become regimental major on 5th July, 1872.

At the beginning of 1874 he was appointed Instructor in Military Law and History at the S.M.E., Chatham, where up to that time there had been no provision for the teaching of those subjects. In the summer General Sir Alfred Horsford went to Brussels as British representative at the Conference on the Rules of Military Warfare; Hale (who had served under him at Dover) went with him as Assistant Military Secretary, and received the thanks of the Foreign Office for his services. When the work of the Conference was over they visited some of the battlefields round Metz. In the course of the next 20 years Hale frequently revisited these and other battlefields of the war of 1870-71, taking parties of officers with him. After one of these visits he was presented with a goblet inscribed "Lonsdale Hale, from his nine pupils, 1889, Weissenburg-Sedan," with their names added, Lord Wolseley, then Adjutant-General, and Sir Evelyn Wood, then commanding at Aldershot, being among them.

It was a fortunate thing that he had exchanged the teaching of fortification to cadets for a wider field of military instruction on the eve of the Franco-German War. That war at once riveted his attention and was the subject of unremitting study for the rest of his life. In February and March, 1875, he gave in the R.E. Journal a summary of the best literature then available on the war and its lessons. In 1877 his Tactical Studies of the Battles of Colombey-Nouilly and Vionville was published officially. They were examples of what was then a new method of describing a battle, following it step by step as at Kriegs-Spiel, and aiming at scientific precision rather than artistic effect. He helped Major F. C. H. Clarke with the proofs of his translation of the German Official History of the War, published in 1874-84, and he supplemented that work in 1890 by an Analytical Index, a most laborious task. He joined the United Service Institution in 1871, and in 1876 he took charge (as honorary editor) of a new section of the Journal, devoted to articles on foreign professional subjects and to notices of professional books. These "Occasional Papers" gave new life to the Journal, which had hitherto been a mere report of lectures given at the Institution.

After four years at Chatham, Hale returned to his old neighbourhood, being appointed Professor of Fortification and Artillery at the Staff College on 1st February, 1878. He went to South Africa in the summer of 1879 for the second stage of the Zulu War. He saw no fighting, being placed in charge of the Port Durnford base as A.A. and Q.M.G. He had to keep in touch with Fort Pearson and with the First Division in Zululand. He had also to see to the landing and embarking of troops and stores, and so it fell to him to embark Cetywayo in September. He received the medal and clasp for the war, and was back at the Staff College in November.

It was a great disappointment to him that he had no part in the Egyptian Campaign of 1882, but his rank was against him. He had become regimental lieutenant-colonel on 1st October, 1877, and colonel in the Army four years afterwards, and posts for full colonels were scarce. Seeing no prospect of realizing his hopes of active service, he gave up his professorship and retired from the Army on 1st August, 1883, much to the regret of his friends. Sir Herbert Stewart pressed him to reconsider his intention: "That you, whom I beg all my friends to go to the Staff College specially to hear, and learn what soldiering is, should leave, seems to me downright wicked."

But there was to be no such waste of Hale's "splendid energy" and knowledge of warfare as Stewart feared. In fact a wider field was opened for them. He set himself to help everyone who wished to learn the art of war; and he preached the truth as he saw it, whether men would hear or whether they would forbear. He did not leave Camberley, and remained in touch with our chief military centre. He often lectured at Aldershot, and three of his lectures were printed in the series of the Aldershot Military Society. Among

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them is "The Fog of War," a happy phrase which has passed into common currency. He defined it as the state of ignorance in which commanders frequently find themselves, and illustrated it from the action at Kissingen (roth July, 1866) between the Prussians and Bavarians. The lecture was given on 24th March, 1896, with Lord Wolseley in the chair.

But he did not confine himself to Regular soldiers : he did his best to improve the Volunteers. Towards the close of 1884 he gave a series of "Talks on Tactics" to the Inns of Court Rifles. He told them freely of their shortcomings, declaring himself a believer in the probability of invasion and in obligatory service for home defence; but he spared no pains to increase the efficiency of the force as it stood. In the course of the next 20 years he lectured to Volunteers in all parts of the country—in Sheffield and Manchester, Edinburgh and Glasgow, Cardiff and Oxford.

In 1885-6 the Home District Tactical and War Game Society (afterwards the H.D. Military Society) was started, to give officers of Militia and Volunteers means of study and practice. Hale undertook the duty of Umpire-in-Chief at the War Games (or Exercises, as he preferred to call them), and he carried it on till the society came to an end as a consequence of Mr. Haldane's changes. One of its original members, Colonel Sir Howland Roberts, writes : "Officers of all ranks of the Services came to hear the rulings and criticisms of our Umpire-in-Chief, which were so clear and evidently those of a master that such a thing as questioning his decisions was unknown. Not only did Colonel Hale draw up the general and special ideas, criticize the appreciations and consequent orders, involving heavy work, but often he would ask the combatants and lookers-on to meet him the following Saturday on the terrain where the battle had been fought on the map, so as to realize how the actual features of the ground would affect real troops."

Another Volunteer officer, Lieut.-Colonel A. K. Fletcher, writes : "He was by far the strongest Director I ever came across. One always felt the electricity of his presence in the room, and on the rare occasions when he was unable to be present there seemed a lack of 'go.' Of few words or even blunt, he was always fair and most helpful to young officers. . . Indifference rather than ignorance was his pet aversion, and on occasions when he thought it necessary he had a very caustic tongue. He would never allow a scheme to be spoilt by faulty leading, and on such occasions he was always ready with fresh orders, pinning down the wanderer to the right path."

During all this time he was busy at the United Service Institution. He continued to edit the "Occasional Papers" for some years. He was made a member of the Council in 1884, and remained on it almost without a break till his death, becoming Chairman of it in April, 1913. He was Chairman of the Journal and Library Committees from 1895 to 1913. He took an active part in the preparation of catalogues of the Library. In 1908 he arranged the military maps and plans, and in 1913 he arranged and catalogued the military manuscripts. In that year he was awarded the Chesney Gold Medal, "in recognition of his long connection with home and foreign military literature." In moving a vote of thanks to him at the end of his year of office as Chairman, Lord Methuen said that there was no officer to whom the British Army owed more, if so much. A portrait of him, painted by Colonel W. C. Horsley, V.D., hangs in the Institution.

The lectures and articles by him which are printed in the Journal deal with the new French infantry tactics (1876), the French Army (1883), changes in the drill of the German Army (1889), outposts (1881), infantry fire versus artillery fire (1883), supply of ammunition to armies in the field (1884), tactics as affected by field telegraphy (1887), operations in woods (1897), and end with a personal appreciation of Lord Wolseley (1913). There are also two lectures which are of particular interest, as they give his creed on the teaching of military history :--- " The Study of Military History by the Regimental Officers of the Army " (1876) and " The Professional Study of Military History" (1897). In the former he urged regimental officers, instead of reading Napier, to take the most recent war, and study it with the help of the German Staff History. They should go to documents, not to essays, select particular actions (such as the Storming of the Rotherberg) and make themselves thoroughly acquainted with every detail. He took the same ground 21 years later. He complained that cadets carried away false impressions from the Napoleonic Campaigns, because of the change of weapons. The professional study of military history should be purely utilitarian, aiming to make the soldier a better soldier; it should be suited to the rank of the officer and the work before him; and it should run chronologically backward, not forward.

In the discussion which followed this lecture, Colonel G. F. R. Henderson objected to exclusive devotion to the War of 1870, and held that, as regards strategy, British officers could learn more from the American Civil War and from Wellington's Campaigns. The Chairman (Sir William Butler) also favoured breadth of study, remarking that the accounts of recent wars are sure to be unfair and distorted. This drawback was recognized by Hale himself in a paper written for the Historical Congress of 1913, on "The Difficulties Encountered in Compiling Military History." There he described the German Staff History as "a marvellous example of suppressio veri from beginning to end," not as regards the events, but as regards the German leaders concerned in them. He pointed out that owing to this reticence, and to want of data from the French

side, there was no full account of the Battle of Gravelotte till 36 years afterwards.

A singularly ready speaker and writer, he was more concerned with practical ends than about his own literary reputation, and most of his work was occasional. But in 1904 he made his chief contribution to military history in "The People's War in France, 1870-71," a masterly account of the attempt and failure of Gambetta's armies, or rather of those operating from the Loire, to relieve Paris. He thought that British officers have more to learn from this phase of the war than from the earlier phase which ended at Sedan. He supplemented this volume later by two articles in the *Edinburgh Review*, on "Bourbaki's Campaign" (July, 1910) and "Gambetta's War Office" (October, 1911), based on recent publications of the French General Staff.

For three years after his retirement he was an Army coach, but he found the work distasteful. For nearly 20 years, from 1888 onward, he was a military examiner, and took part in examinations of officers for promotion, candidates for the Staff College, Militia officers and cadets. Few men have had such varied experience of teaching. He was one of the witnesses called by the Akers-Douglas Committee, which reported on military education in 1902, and his evidence, which occupies several pages of the Minutes, states his views on the subject in his usual clear-cut fashion. He reviewed the Report of the Committee in three articles in the *Pall Mall Gazette*. When his work in this line was over, he wrote some "Notes on the Marking of Examination Papers," full of shrewd suggestion. They were officially issued by the War Office at the end of 1910 with the intimation that they were "the ripe fruits of experience gained by many years of conscientious work as an examiner."

The short notice of Hale in The Times of 26th October mentioned that he was a constant and valued correspondent of that paper for a good many years. From 1890 onward he wrote series of articles on the annual manœuvres, especially the cavalry manæuvres, and on other military topics. During the South African War he wrote on "Lessons of the War," "Lord Roberts' Campaign," "The Cavalry in South Africa," and "The Cavalry in Natal." The articles were usually headed "From a Military Correspondent " or " From an Old Soldier," but his letters were signed. The latter dealt with a great variety of subjects; they were full of pith and marked by a dry sardonic humour. He wrote a good deal in the leading Reviews. Two of his articles in The Edinburgh have been already mentioned; another, on "War as a Teacher of War," appeared in April, 1902. A complete list of his articles cannot be given here, but those which he wrote for The Nineteenth Century will serve as a sample :--- " Professional Ignorance in the Army " (September, 1887), "Das I. Garde-Dragoner Regiment " (September, 1889), "The War Game " (February, 1891), "An Army without Leaders " (March, 1896), "Our Peace Training for War " (February, 1900), "The Home Generals and Their Work in the Coming Autumn " (July, 1900), "The Staff Work in the War " (September, 1900), "Sham versus Real Home Defence " (February, 1901), "The German Order of the Iron Cross " (October, 1901), "Our Pitiable Military Situation " (July, 1904), "The Insecurity of our Home Defence To-day " (August, 1908), "Watchman, What of the Night ? " (December, 1908), "Forewarned, but not Forearmed : A Warning from 1870-71 " (June, 1909), "Home Defence ' Unrest ' " (October, 1910), "Compulsory Service : A Minister's Manifesto " (February, 1911), "Up and be Doing " (December, 1911).

It will be seen from the above list that as time went on the warning note became more pronounced. He was fully alive to our "peril from over the way," as he phrased it, and was unsparing in his efforts to bring it home to his countrymen. To reach the working man he wrote a series of articles in The People :--- "Look Out for Trespassers: A Warning to Britishers." In 1910 he issued a pamphlet on "The Horrors of War in Great Britain," based on the experience of France in 1870. At the end of 1911 he had a long letter in The Times :--- "The Question for the Nation on New Year's Day, 1912." He had no faith in the Territorials. At a meeting at Camberley in 1908, called to support the Territorial Force, he disconcerted the promoters by making an impassioned speech on invasion, and following it up with an amendment in favour of compulsory service, which was carried by a large majority. Yet he would not join the National Service League, as he thought its programme inadequate, and would accept nothing short of a year's training for recruits. Compromise was not much to his mind.

With so many irons in the fire Hale had little time to spare for local affairs; but in April, 1900, being dissatisfied with the way in which they were carried on, he stood for the Frimley Rural District Council, and was returned at the head of the poll. He served his term (three years) and proved a very capable Chairman of the Sanitary Committee. At the first meeting of the Council after his death the Chairman said:—" In my humble opinion he was unique, and his loss leaves a gap which will not be filled. No appreciation that I could utter could do justice to that life crammed full of noble service and kindly actions . . . he was on a pedestal in our hearts." He endeared himself especially to officers at Camberley, for he was always ready to help those who consulted him in any difficulty, and grudged neither time nor trouble. There was general satisfaction when he was knighted at the time of the Coronation of George V., the only official recognition of the country's debt to him.

Hale had one son and three daughters. The son, William Alfred Lonsdale, born in August, 1876, passed with special distinction

through Sandhurst and was an excellent draughtsman. He joined the Northumberland Fusiliers in 1896, served in the Sudan Campaign of 1898 and was present at the Battle of Omdurman; but he died of enteric at Alexandria on 15th October. Hale arrived there a week too late. The loss of his only son was a heavy blow to him, and was followed by the loss of his wife on 13th January, 1903 (their wedding day). In 1905 he withdrew from the Athenæum of which he had been a member for 30 years. In the early part of 1914 his health and strength began to fail. When the European War came in August he was asked to lecture or write on it, but he could not, and he felt deeply his inability to be of use at such a time. He followed the war closely and was filled with pride and admiration at the way in which the British held their own against overwhelming masses of the choicest German troops. In the autumn he went to Westgate-on-Sea, and there he died on 23rd October in his 81st year. His body was cremated and buried at Woking.

The writer cannot end this notice without saying how much he is indebted to Miss Margaret Hale. At her request F.M. Sir Evelyn Wood has written an appreciation of his old friend.

> E. M. LLOYD, Coloncl.

AN APPRECIATION OF THE LATE SIR LONSDALE HALE.

When I joined the Staff College in February, 1863, Lonsdale Hale held an appointment in the Royal Military College, Sandhurst, distant about half a mile, and our acquaintance then begun ripened into a friendship which deepened yearly, and was maintained without a single jar until his death last autumn.

My friend was at that time, the beginning of our acquaintance, known as a very popular, effective teacher. His way of explaining difficulties made even the slowest-minded future officer realize that he was studying under a sympathetic and lucid instructor.

He was known on a hot summer's afternoon, when lecturing to a class of cadets, all of whom had been employed during the forenoon in outdoor work, and after a hearty luncheon, washed down by a glass of beer, were resting their heads on their desk, to arrest the attention of the lads by the emphatic remark "I address my observation to the *one* intelligent cadet I see in front of me," which had the effect of bringing every head briskly up with an air of attention.

I was employed at Aldershot regimentally, or on the Staff, from 1866 to 1873, and again in 1874, when Major Hale went to Chatham, and thus enjoyed for many years great opportunities of appreciating my friend's matchless power of imparting information.

In 1879 I was serving in the north of Zululand, while Hale was on the Staff of the Lines of Communication in Natal, and so only heard of the good work that he was then doing, which was fully appreciated by General Sir Garnet Wolseley.

Many years later Hale became admittedly the best-informed student of all tactical details of the Franco-Prussian War, 1870–1, and for many years personally conducted the senior branch of Staff College students over the more important battlefields in Alsace-Lorraine.

In 1889 he was accompanied to those battlefields by the then Adjutant-General of the Army, Viscount Wolseley, several distinguished officers of the Headquarters Staff, and myself, and we all appreciated highly his consummate mastery of all phases of the battles on which he instructed us.

Our closest intercourse however was during the period of my command at Aldershot, January, 1889—October, 1893. I was interested, and occupied in working out tactical lessons for all ranks in the command. My friend attended all the operations at and around Aldershot, and on the Berkshire Downs, and by my special invitation was present at the Conferences held at the conclusion of each day's work. Later Hale and I discussed with perfect freedom

the decisions I had given occasionally on the field, and in some cases in printed memoranda issued after all the verbal and written reports had been considered. Hale and I sometimes disagreed, and in private he never hesitated to question the soundness of my decision if he saw occasion, but such difference of opinion never clouded for a moment my affection for him, and my sincere respect for his military genius, and his deep study of our profession.

Hale's booklet, What to Observe, and How to Report It, was when he published it a very long way in advance of our official textbooks. His *People's War*, 1870-71, published in 1904, is one of the most illuminating studies that I have ever read.

EVELYN WOOD, F.M.

REVIEW.

PAGES D'HISTOIRE, 1914.

(Librairie Militaire Berger-Levrault, Paris : 5, Rue des Beaux-Arts).

A NEW Europe is in the making and we are passing through perhaps the most important epoch in the whole history of the world since the In order to preserve a permanent record of the events which Creation. are now shaping the future of Europe, in the light that they have appeared to the intelligent observers of the day, the Librairie Militaire Berger-Levrault of Paris has commenced the publication of a series of interesting pamphlets under the general title of Pages d'Histoire, 1914, in which are collected together extracts from the official documents published by the various Governments, as well as the important portions of leading and other articles relating to the war which have appeared in the leading newspapers printed at the principal centres of the world. The first nine numbers of this series have already been issued to the public, and the tenth is now in the press. The publishers are issuing an Edition de Luxe of this series, as well as an edition on ordinary paper; the former is printed on Japanese paper, a uniform charge of 10 francs being made for each pamphlet, whilst the prices charged for the ordinary edition vary from 40 centimes to I franc per pamphlet.

The first number of the series, entitled *Le Guet-Apens*, deals with the Austro-Prussian complot which has embroiled the greater part of Europe in the most stupendous military conflict of all time. The narrative commences with a very brief review of the exceedingly disturbed internal political situations in Great Britain, Russia, and France in June last; situations which it would appear were thought by Germany to offer a propitious opportunity for bringing Russia and France to heel in connection with the Prussian chase after World Power. This number also contains an extract consisting of the more important portions of the Austrian ultimatum to Serbia. The short extracts from the leading European newspapers which complete the contents of this number show clearly enough the intense anxiety caused throughout the Continent by Austria's action.

The second number of the series deals with the diplomatic tension which prevailed between the 25th and 31st July last. An outline of the reply made by Serbia on the 26th July to the Austrian ultimatum appears in this number, and a brief reference is made to the feverish excitement which followed in Berlin on the reception of the news that Serbia had refused to accept the conditions of the Austrian ultimatum in their entirety. The situation in Austria following on the rupture of diplomatic relations with Serbia, and the violent enthusiasm caused in

Vienna when this fact was publicly announced are also touched upon, as well as the attempts at mediation made by Great Britain, France, and Russia to avert the impending war. This number concludes with the text of the German ultimatum to Russia and the consequential measures taken in France.

The third number opens with the text of the proclamation to the French nation issued by the President of the French Republic announcing that the necessary steps had been taken to mobilize the French Army. This number also contains extracts from the French Law which deals with the procedure to be adopted in connection with a declaration of a "state of siege" in the country. Brief references are published relating to the violations of the French frontier and the occupation of the Grand Duchy of Luxemburg by German troops. The text of the protest of the State Minister of the Grand Duchy to the French Premier against the step taken by Germany in invading Luxemburg is published in extenso, as well as are the terms of the Treaty of London, signed in May, 1867, by which the neutrality of the Grand Duchy was guaranteed. The text of the German ultimatum of the 2nd August last addressed to Belgium and the latter's reply thereto dated the following day are also given in full. This number further deals with the attitude taken up by Great Britain in consequence of Germany's action, and an extract from the statement made by the British Foreign Minister in the House of Commons on the 4th August is also published. The text of the Imperial Rescript published by the German Emperor to his people on the 4th August is contained in this number which concludes with extracts from French newspapers dealing with the military situation during the early days of August.

The fourth number is devoted almost exclusively to the proceedings in the French Parliament on the 4th August; an extract from an article relating to this debate published in the *Figaro* of the 5th August being also reproduced.

The fifth number of the series, entitled *En Guerre*, deals with the events of the three days from 5th to 7th August, as described (principally) by the *Figaro* and *Le Temps*. An account of the German attack on Liège and of the Belgian defence of this town is contained in this number.

The sixth number contains the text of the official communiqués addressed to the Provincial Civil Authorities in France by the Central Government. These communiqués deal with military events which took place in the different theatres of war between the 5th and 14th August.

The seventh and eighth numbers contain information of a character similar to that dealt with in the preceding number, the seventh number covering the period 15th to 31st August; whilst the eighth deals with the period 1st to 30th September.

The ninth number of the series contains copies of letters which passed between the French Minister of War and the French Premier relating to the publication of an official newspaper under the style and title of *Bulletin Militaire des Armées de la République* under the patronage of the latter. This Bulletin is distributed to every officer and soldier of the French Army serving at the Front and is intended to keep him in

REVIEW.

touch with home news and the progress of events. This number contains the text of addresses specially written for and published in the Bulletin; the contributions have been made by leading Frenchmen, numbered among the contributors being the French President, the French Premier, General de La Croix, Vice-Admiral Gervais, Count de Mun, Clemenceau, Deschanel, and Millerand, the newly-appointed Minister of War in the Provisional Government.

The Librairie Militaire Berger-Levrault has also published a small pamphlet entitled *Trois Mois de Guerre*, which gives a brief account of the military operations which took place in the western theatre during the months of August, September and October.

The Librairie Militaire has with commendable promptitude published six further numbers of its Pages d'Histoire, 1914, since the review of the first nine numbers was prepared. The tenth number is in continuation of the preceding number of the series, and contains extracts from Le Bulletin des Armées de la République, published between the 4th September and 21st October, 1914. This number contains, amongst others, two short articles by Henri Welschinger, one dealing with the protest made in 1871 by Alsace and Lorraine against the surrender of these provinces to Prussia by vanquished France, and another containing a character sketch of the present German Emperor. An article by Charles Bonnefon entitled "Le Culte de Force" is also published. This number further contains copies of the congratulatory messages which passed between the Heads of the Allied States in September last after the successes following the Battle of the Marne. Many of the extracts published in this number are contributions from well-known Frenchmen, and, in consequence, are of considerable interest.

The eleventh number, entitled A l'Ordre du Jour, deals with the Mentions in Despatches, and the awards of the Legion of Honour and the "Médaille Militaire" during the period 8th August to 18th September, 1914. This number commences with two reports to the President of the French Republic, one from the French Minister of Foreign Affairs, dated 7th August last, cites the violation of Belgian territory by German troops and the valiant stand made by the Belgians at Liège. The minister recommends in his report the bestowal of the Cross of the Legion of Honour on Liège in order to perpetuate the memory of the gallant deeds of its defenders. The second of these reports is dated 9th August last and therein the French War Minister recommends that the "Médaille Militaire," the highest French military distinction (which can be bestowed even on a general officer), be conferred on H.M. King Albert I. As is well known both these recommendations were immediately given effect to.

This number also contains a copy of the representation made—dated 13th August last—by the French War Minister to President Poincaré urging the adoption of measures to secure a prompt bestowal of the Legion of Honour or the "Médaille Militaire" on those who had earned these distinctions. It appears that by virtue of decrees issued in 1852, a formal Vote of the Chamber of Deputies is necessary in order to confer these decorations on members of the military and naval forces, as they carry other advantages. To meet the present situation a short decree

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was issued on the same date as that on which the War Minister made his representation, and the terms of the same are published in this number.

The copy of another of the documents published in this number is that of a letter dated 5th September, 1914, from Bordeaux, in which the French War Minister draws the attention of the President of the République to the tradition in the French Army which provides for the decoration with the Cross of the Legion of Honour of the colours of a regiment which has captured colours or a standard from the enemy's troops. In his letter the War Minister recommends that this distinction be conferred on the 137th of the Line for the capture of colours from the 28th Prussian Infantry in the engagement which took place on the 27th August between a French Division and a German Corps. This number contains the names of a very large number of officers, noncommissioned officers and men who have been mentioned in despatches and also of those who have been decorated.

The twelfth number is in continuation of the eighth number of the series and contains copies of the official communiqués issued during the month of October, 1914.

The thirteenth and fourteenth numbers are in continuation of the eleventh number of the series; the former contains the names of those mentioned in despatches and decorated between the 19th and 29th September last, whilst the latter contains similar information for the period 2nd to 14th October last.

The fifteenth number, entitled Les Pourparlers Diplomatiques (23 Jeuillet-4 Aout), contains a French translation (in extenso) of the White Paper on the European Crisis which was laid on the table of the House of Commons in August last.





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