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Friday, February 4, 1881

COLONEL SIR LUMLEY GRAHAM, ~~Baronet~~ Member of Council, in
the Chair:

THE OFFENSIVE-DEFENSIVE BY INFANTRY IN
EXTENDED ORDER.

By Colonel T. LYNDEN BELL, 37th Brigade Depôt.

THE privilege of appearing before this meeting to-day has, as regards myself, two aspects, one (although it may appear like "begging the question") involves some hesitation lest the proposals which I have to make should be considered too simple to be effectual, the other giving encouragement because of the importance of the subject and the hope that valuable discussion may take place regarding it, so that the general result may indicate some definite and plain principle by which infantry in extended order shall be enabled to hold a given front against the enemy with even greater stability than can now be commanded by larger numbers acting according to existing routine.

I will proceed in connection with this subject, first, to state what now seems to call for change, secondly, what is proposed as an amendment, and, thirdly, my reasons in support and other considerations bearing upon them.

Having in view the eventful circumstances of the Zulu and Afghan Campaigns, it would appear to have been generally found impracticable or impossible to retain infantry sufficiently long in extended order to break the force of rushes of irregulars or fanatics against the main body, and that in consequence of this recognized difficulty the attempt was, in some instances, never made, and the infantry were kept in close formations, having an outlying safeguard of cavalry only.

The wisdom of this was justified on some occasions, but on others the result was disastrous, and it seemed to depend on the quality of the troops engaged, whether it was the one or the other—that is, successful or unsuccessful. It was a retrograde measure to meet the condition of things at the time, proving that men extended (as at present) could not keep their ground against the rushes of the masses brought against them. Had we, however, been opposed by any but a savage or undisciplined foe, without training in the use of modern arms, without field artillery or powers of manœuvring, we must admit that to fall back upon the conduct of battle before the introduction of arms of precision and long range, would have been a fatal mistake, and it may be possible for us to meet at any time armies of superior strength which can combine the rush we could not

effectually resist, with the subsequent discipline which could render it so dangerous an opening to an action.

It appears, therefore, evident that be our enemy disciplined or undisciplined, something ought to be devised to give greater *tenacity* to the cordon of infantry *covering the real force* which a General should be capable of developing according to his plan of battle, and rely upon for ultimate success—so that no wave of the kind, by breaking directly upon that force, may cause disorder and prevent deliberate manœuvring to carry out his object.

I venture to propose that instead of the fighting or skirmishing line, thrown out as a covering body in advance of other troops, being in single rank when firing, it should at the halt, and whenever halted, form quadrilateral figures of fours (see Diagram No. I), the left files forming on the right. This gives a line of squares of fours which support each other mutually, with one man in reserve for each four.

Secondly, that when reinforced from the supports *for the purpose of resisting attack* the reinforcements should form into fours on the fours of the first line; making a very strong offensive-defensive chain. (See Diagram No. IV.)

The men should be in the lying down position, and turn the body only in the direction required to deliver the fire.

The half-battalion in reserve (to adopt as example a battalion only) could, under cover of the chain formed by the reinforced line, act with advantage in close files against any infantry or cavalry who might bring extra pressure to bear on parts of the line, or who might have broken through or partially turned it.

It may be further remarked that men disposed in squares of fours can fire in any direction—that no intermediate movement is necessary to prepare for cavalry—that reinforcement by the supports not only gives great additional strength but does so without loss of tactical unity by the company or party supporting.

The nature of the grouping also is such as to give confidence, whereas in a single or even a reinforced line of skirmishers none is felt, the men themselves being aware of its weakness for resistance, and that they must make another formation for refuge whenever cavalry is likely to act against them.

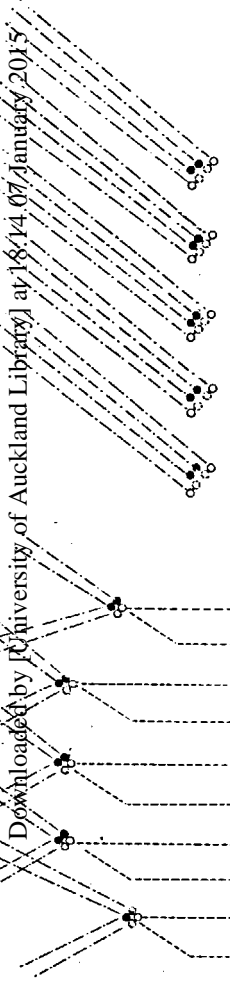
In squares of fours their duty is to shoot steadily and hold their ground, feeling that the reinforcement of the supports makes them doubly strong, and that the reserve companies will be brought up to give further aid when the necessity arises.

It may be said that such groups or squares of fours would be a large mark for artillery, but the men would be in the lying down position at double (or more than double) interval in their normal condition when firing to the front, and if an attack by cavalry, skirmishing infantry, or irregulars were being made, it should be impossible to employ artillery against them.

It is contended that if such a rush be checked, opportunity is given for more offensive counter action, and it is reasonable to think that when infantry see that they are well posted for resistance they will not be subject to that uncertainty of mind which may lead to panic.

EXPLANATION OF DIAGRAMS.

Left files are shown thus...
 The crossing fire shows the extreme lateral range; most of the fire would be directed to the front.



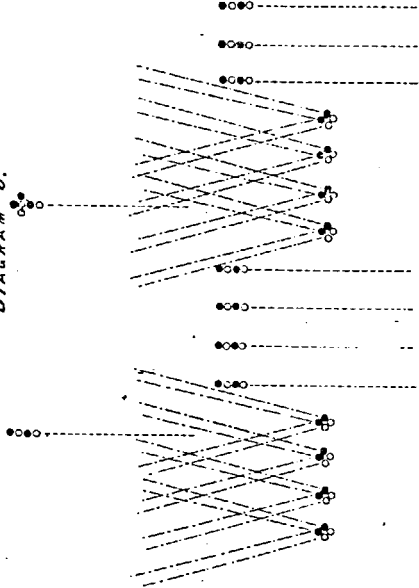
Advancing skirmishers, forming squares of fours at the halt, and lying down.

DIAGRAM 4.

The rear files—of squares—opening out so as to bring every rifle to bear to a flank.

DIAGRAM 6.

Showing how fire could be directed to front.



Advances by rushes of four alternate sections of fours.

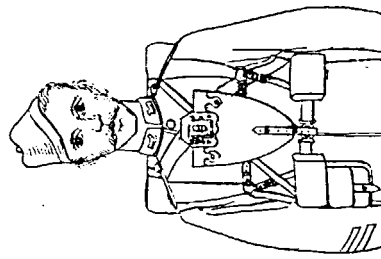
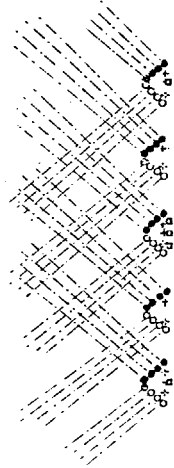


DIAGRAM 5.

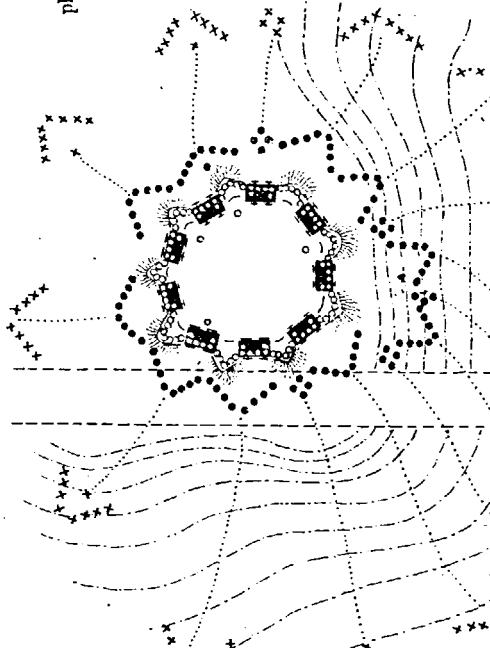
- (1.) Line of squares of fours previous to re-inforcement.
- (2.) Prepared to receive re-inforcements in the broad arrow formation.



- (3.) The re-inforcement by support company in broad arrow formation.

Squares of fours re-inforced by the supports in similar squares.

DIAGRAM 7.



REFERENCE—DIAGRAM 7.

- xxxxxx — 1st Position.
- oooooo — 2nd
- oooooo — 3rd

Formation of defensive post with wagons, covered by half the detachment thrown out in broad arrows.

GENERAL NOTE.—The four Companies acting as Regimental Reserve behind the cordon of skirmishers and

Prior to the advance of the fighting or skirmishing line (should such be required) after repulse of an attack, it would only be necessary to supplement it by some of the squares of fours from the supports so as to fill gaps, &c., and the supports themselves could get into single rank or files, and follow at supporting distance, taking advantage of cover. To retire the supporting line, after having repulsed an attack and supplemented the first line, would also be a simple matter of drill, viz. :—supports, retiring at the double, forming files (or single rank) on the march—covered by the fire of the fighting line.

There is a clear distinction between the foregoing and the formation for attack, the manner of conducting which, being provided for by regulation, does not come within the scope of this paper; but there is nothing now brought forward to prevent its being carried out, as already proposed, in connection with a flanking movement, while the front is held by our defensive chain, or (as perhaps an extreme measure) by an advance through the intervals of the chain itself, to which it could give support, by being pushed forward, following the attack, and intrenching itself at the points formed by the squares of fours.

As a last alternative, the covering troops forming the chain could be ordered to advance as the head of the attack.

To revert. One very important question seems to arise, viz. :—In what manner can the largest frontage be held in the strongest way by a battalion of infantry, furnishing its own supports and immediate reserve, in opposition to a skirmishing or other attack, or for the prolongation of a flank to resist a threatened turning movement? (in connection with Gatlings, or artillery, or cavalry, if available).¹

I have with great deference ventured to propose one solution of the difficulty. Perhaps other Officers may think it worth while to give the matter the benefit of their professional experience with a better result.

It is necessary to explain, with regard to the apparent similarity of the formation which I advocate to that contemplated by Par. II, Section 26, "Field Exercise Book," that the latter is a refuge against cavalry from an untenable position, and that the very fact of being obliged to take it up under pressure unsettles the troops and has a tendency to make them unsteady; moreover, such groups, as a rule, at once come to the "prepare for cavalry," and firing must slacken.

What is fatal in the line is common to it when reinforced, namely, its inability to resist a flanking dash of cavalry, and to form groups, after casualties have occurred in the single and under any circumstances in the reinforced line requires organization by the Officers or non-commissioned officers on the spot, and is, I contend, essentially different from the deliberate adoption of the order of squares of fours, which arrangement provides for ordinary firing, for emergencies without being shaken by change at a critical moment, for reinforcement

¹ Gatlings could be worked between the groups of infantry in the first line.

without loss of tactical unity and by making right and left files really "comrades in the field," turns to account their previous association, and mutual confidence *before* the moment of danger.

It may possibly be said that it is open to question if the supporting squares of fours are well placed, so as to give their fire.

As an alternative in this case, it is easy to form a *broad arrow*, the four men of the fighting line being at the apex (two on each side), the supporting four prolonging the sides (two on each), and the Officers and supernumeraries filling up the enclosed space, in rear; tactical unity is still practically maintained by the deliberate placing of the reinforcement in a certain temporary position for a certain object, but it is not admitted that the supporting squares, as shown in the diagram, cannot fire effectively.

It is quite possible, with the "intrenching tool," of which diagrams are submitted herewith, for men in the kneeling position to make good cover in a short time for the group of fours; two men of each working in rear of the other two, who might keep up fire.

The men should use the tool as a hoe—on such an occasion pulling the earth towards them with the blade after striking and then pushing it forward with the reverse side, working on their knees—when necessary to give impetus to the stroke.

Here it may be incidentally remarked that cover for groups is much more easy to make and more practicable under difficulties than a continuous shelter-trench: a rise of ground here or there may be improved so as to afford protection, and the levels avoided as much as possible.

The tool was forwarded to the Horse Guards by me on the 11th June, 1879. It might be made of any convenient weight, the handle could be carried by one man, the blade by the other. It forms a spade; it can be used to fire through in a shelter-pit (having a loop-hole), and the blade acts as a shield when worn on the breast; it is a tool for the skirmisher; and although otherwise useful, has its chief merit in its adaptability to the condition of troops who are exposed to fire, and who require to make cover so as to fight more effectively.

The intrenching tool, as will be seen by the diagram, can be carried without in the least interfering with the performance of any field duty. The instrument forwarded for the inspection of His Royal Highness was not as perfect as I could have wished, but the manufacturer would have made others so if I had been in a position to order them.

Permit me to introduce into the infantry scheme of such battles as Ahmed Khel and Maiwand the proposals which I have brought before this meeting, in order to show how they would have fitted in with those occasions, and whether their employment would have been beneficial.

I do not presume to offer any criticism upon the actions themselves, but merely take them as examples, in the manner that might be done if the troops engaged were pieces in a war game.

There were several points in which the conditions were similar, some in which they were essentially different; the results were, of

course, different. Both were fought by a British brigade of all arms against an irregular force superior in numbers. In both the actual initiative was taken by the enemy, who on each occasion attacked the front and both flanks.

At Maiwand the enemy had a preponderating artillery force, at Ahmed Khel he had none.

At Ahmed Khel the situation at the critical period of the action, when the flanks were attacked as well as the front, appears to have been this. The infantry having been in the attack formation had reinforced the fighting line and absorbed regimental supports and regimental reserves. There was one battalion in reserve, two companies on escort, the cavalry was partly unshaken, the front was unbroken, the right front was thrown back to resist pressure on that flank.

At Maiwand the infantry was in line, with the right partly thrown back; a portion of the front was shaken, as also the cavalry, by artillery fire, and there were no reserves.

At Ahmed Khel the repulse of the flank attacks, which appear to have penetrated behind the right and through the rallying squares of the left battalion, seems to have been due to fire directed to the rear by part of the front line, and to the reserve troops including the escort, as well as the cavalry; in fact, speaking generally, to the reserve with the partial co-operation of the front line.

At Maiwand, the troops of the front line and the cavalry were not, for the reasons stated, able to offer effective resistance.

If there had been a strong hostile artillery on such an occasion as Ahmed Khel, the reinforced line with supports and regimental reserves absorbed would have suffered more, and would therefore, it may be assumed, have been less in hand (independent of the amalgamation caused by reinforcement) to assist the reserves in repelling the attacks on the flanks.

Had the situation been a converging attack on the front by irregulars, combined with a frontal artillery fire (as long as practicable), and turning movements more directly on the flanks and rear, opposed on our part by a line reinforced by supports only (the regimental and other reserves being unabsorbed), would the fighting line reinforced partially be as competent to meet the converging frontal attack of a mixed force in rallying squares as it would be if disposed in the mutually flanking "broad arrow" formation, which allows of the fire not being slackened under any circumstances? With the system I advocate, the actual absorption of regimental reserves would not take place in repulsing an attack, as after action by them, they would still retain their tactical unity, always keeping behind the fighting line, and be available in part wherever the pressure might be greatest, either in front or to the flanks.

Again, would not the *fire* of a line of reinforced squares of fours or "broad arrows," be equally, if not more effective, than that of a fully reinforced line which is so likely to become overcrowded, and which, from the fact of there being double the number of rifles, would, in

proportionate degree; be prevented by the hanging smoke from seeing the objects fired at?

It is not reasonable to expect that a line fully reinforced and subject to artillery fire or other attack, could be able to reorganize itself into its tactical units, so as to withdraw quickly and effectively a portion for the purpose of repelling a turning movement, therefore, it ought to be perfectly clear that regimental reserves should never be absorbed except at the crisis of an attack on the enemy, and not even then, if no other effective support or reserve is at hand, when a flanking rush is possible.

To turn to such events as took place at Maiwand, applying my system, there would have been half the infantry in the position of reserve, support, or second line, whichever term is most suitable, half in the firing line. The reserves, although unable, from the conditions under which the battle was entered upon, to turn defeat into victory, would have checked the flanking advances for the time, and have enabled the guns to retire, covered by the infantry of the first line, which might have retired by alternate bodies, and having, by reason of the action of the reserves, less flanking pressure upon them, might possibly have been concentrated during retreat, and been able to pull themselves together, so as to show a front at a little later period, and cover the retirement of the reserves.

Convoys.

I desire to add a few remarks as to the manner in which the tactical order of groups or squares of fours seems to commend itself to such situations as the escorting of convoys. In the first place, the holding power of the infantry of the advanced guard or party would be materially strengthened, because two-thirds, if not one-third, might not only be reasonably expected to make a stand on a broad front, but also to inflict loss on the enemy, while the remaining portion would be free to act behind them in opposition on the development of the attack.

This applies equally to the rear-guard, and indeed to all advanced and rear guards.

The flanking parties, holding the place of outlying skirmishers with regard to the main body, which would be generally placed about the centre, would act similarly, being supported to give time for concentration.

The men, scattered, as they so often are, along the line of route, should be kept in parties of fours, moving off with the carts at intervals. They would thus be in a better position if required to assist on the occasion of break-downs or stoppages, and be more capable of taking care of themselves under any circumstances.

Here I would observe it is assumed that due precautions have been taken as to scouting well to the front and flanks of the convoy with cavalry or with the best means available, without which it is impossible to prevent surprise or defeat. Taking this for granted, also that notice of danger and probable attack have been given, and preparations to meet the same ordered, the delaying power of squares

of fours, with small reserves to back them up, ought to give confidence and facilitate the closing up of the carts into parks on three points of concentration most suitable for protection by, or refuge for, the three principal parties with the convoy, which, in its normal condition, were posted at the head, at the centre, and to the rear of it; according to rule these points ought to be within supporting rifle-fire of each other. It would, in such a case, appear wise that a proportion of the reserve ammunition, water, and provisions should be previously told off to each of these possible divisions, so as to be at once available in case of eventualities or temporary isolation.

The men detached along the line of route should be kept on the same side as the carts, and every four or five parties of fours be under distinct command, so as to be in hand, and capable of acting unitedly by order and in order.

Every moment of delay between the direction as to parking at the points of concentration and the actual attack, must draw together the units of defence and improve the prospect.

We have so small an Army, that the employment of weak detachments under circumstances when the desirability of larger ones would be consistent with prudence, is often a matter of stern necessity to prevent collapse, therefore, it has been my earnest desire to point to a system which would, in my belief, enable—or tend towards enabling—such parties, when not without water, ammunition, and provisions, and when the elementary principles of reconnaissance and scouting have not been neglected, to make in a few minutes, with the assistance of intrenching tools, carried by themselves as part of the equipment, not only that resistance to attack by superior numbers which British soldiers always attempt, but one most likely to have a successful result.

I invite attention to a diagram, No. VII, representing a detachment in charge of a convoy (or part of one) having thrown out some of the men in the "broad arrow" formation for the protection of the remainder while forming a defensive post with their wagons.

In anticipation of certain questions on the general subject brought forward, which might require more careful consideration than could be given on the spur of the moment, I have noted down a few possible queries calling for information which has not been elicited, with my replies.

Question 1.—How would you advance a reinforced line of "broad arrows" to a better position, under fire, but not otherwise opposed?

Answer 1.—The men of the first line could advance by alternate rushes of four sections of fours as shown by Diagram No. VI. The supports should remain lying down until the fresh position had been taken up, and then reinforce by rushes in single rank, and form as before.

Question 2.—How would you retire a reinforced line of the same sort, under fire, but not pressure?

Answer 2.—The supports should first retire in single rank, covered by the fire of the front line, and form the points of fresh arrow-heads on the ground chosen. The front line should then get into single

rank (without rising to the standing position) and retire by alternate men (front and rear rank) according to regulation, keeping up fire until near the new line of resistance, when they should rush to the rear and form on the supports.

Question 3.—How would the supports be placed before reinforcement of any kind?

Answer 3.—In single rank extended lying down within supporting distance, under cover if possible, and the nearer to the front the better; provided there be cover.

Question 4.—How would you, in the first instance, dispose of the half-battalion in reserve?

Answer 4.—After sending out the four leading companies (or leading half-battalion) from quarter-column, to take their places as first line and supports, the reserve half-battalion, might form "fours "left," be wheeled to right, open to double company interval from a central company, halt, lying down in columns of fours (the left four leading). But it would be undesirable to tie the commander to any fixed position not favoured by the ground, his object being to get within striking distance, and yet be covered as far as possible from fire.

On reinforcement by the supports he would make a corresponding advance with, say, his two centre companies, front forming, and moving forward by rushes, to any cover which might admit of his being nearer to his objective.

Question 5.—How would you act in case of a partial breaking of the reinforced line by a body of the enemy?

Answer 5.—I should bring up a company, with fixed bayonets, at open files with sloped arms at the run, cheering, and (having previously cautioned the men as to what I intended) should halt and deliver fire (one round) at fifty paces, then charging with the bayonet. This should be followed up by another company, kept together with all the steadiness and control possible.

(I beg, to observe that this is merely suggestive, and firing would be conditional.)

Question 6.—Would you employ all your reserve companies to repel an attack?

Answer 6.—No; it would be best to keep one company still in reserve, to form a rallying point in case of retreat or an attempt to turn a flank; but if the battalion were on a flank, special arrangements would have to be provided to meet such a contingency as the latter.

Question 7.—How would you arrange that the regimental reserves should be at hand to repel an attack?

Answer 7.—Whenever notice was passed of an approach, with a view to force the line, the companies of the reserve disposable for the purpose should close up, if necessary, to within striking distance, in the most stealthy manner and so as least to expose themselves.

It is assumed that the enemy's artillery fire would slacken if there were a movement in direct attack covering the front.

Question 8.—How would you act in the event of a strong organized attack being observed to be in progress against your fighting line?

Answer 8.—(1.) Notice should be sent to the Brigadier or General Commanding the division requesting any reinforcements available;

(2.) The position should be held as long as possible, acting in accordance with the principles already set forth;

(3.) The front line, under ordinary circumstances, should, on taking up its position, have at once commenced with half its strength to make cover, and it is assumed that cover would be provided in part, if not altogether, for the "broad arrow" formation, by the time of the development of the attack;

(4.) Part of the reinforcements sent by the General should take up a covering position in rear, retaining a support. The original reserve company would be liberated and added to any further available men who would be pushed to the front;

(5.) Gaps should be left in the formation of the reinforcing troops pushed forward, so as to admit of the men in front rallying behind them if driven back in confusion.

Question 9.—How would you retreat under pressure of such attack?

Answer 9.—(1.) Part of the reinforcement would be in the situation suggested in paragraph 4 of the previous answer.

(2.) Part of the troops contending with the enemy should be withdrawn, if possible, into position in further support of the second line.

(3.) The men actively engaged, and being driven back, should be impressed with the fact that a supporting line was already established, so that when forced to do so, they might retire behind it, and take up a fresh formation in rear.

(I think it will be allowed, that such a question as No. 9 is a difficult one to answer under any circumstances, and that success cannot be assured by any system whatever. I ask your indulgence on the point.)

Question 10.—How would you throw back a flank to meet a turning movement, being in the "broad arrow" formation?

Answer 10.—The outward flank should have been strongly posted to begin with, and thrown back in échelon, with a special force in support and reserve, so as to cause the enemy to make a détour or else expose his own flank.

This would be a favourable time for the employment of cavalry and artillery, or machine guns.

Any available reserve troops should be brought to bear to support the exposed flank.

As a matter of mere drill, if time and circumstances permitted, a reinforced line in "broad arrows" could form two lines in files, or in single rank, and throw back a flank on fixed points at the double, re-forming afterwards.

I have ventured, in a simple form, and in an unpretending manner, to deal with this subject, without raising it to the proportions it would assume if applied to large bodies of troops. If the principle be accepted as meeting the necessities of smaller forces, the battalion unit can be multiplied and modifications take place to fit in with other tactical essentials.

By entering into minor details, some of which do not materially affect the question, I am aware that I am laying myself open to refutation on many points, but I say, with deference, that so long as details are not arrived at by someone, so long will general vagueness continue, and a difficulty exist in applying practically to the condition of our army what may possibly suit in every way the different and larger organizations of other countries. I therefore throw myself on your consideration in a good cause.

I submit that it may be found generally serviceable and useful in the circumstances of a campaign to have the power, in any ordinary condition of ground, to establish at once a defensive chain which may be moved onwards or backwards, which can be prolonged to a flank, be quickly intrenched at points if desired, which covers a frontage and protects, to a considerable extent, the direct line of retreat; which gives, as it were, a fresh movable and approximate base (on a small scale) from behind which the offensive can be taken at an opportune moment upon the enemy, if he advances on the front presented to him.

I also hope it will be seen that a proportionate front can be made strong, and possess great powers to inflict loss by fire, particularly when joined to machine guns, with half the available force, liberating the remainder for the offensive and for general reserves; that the chain does not lose tactical unity as to companies while on the offensive and unforced, and that, consequently, the battalions forming it can be quickly brought into hand, when required to take their places in any field operation to which change in the conditions of the engagement may point.

Colonel G. H. MONCRIEFF, Scots Guards: I only wish to ask one question: I do not quite understand why all the fire is crossed and not straight to the front of the men engaged (as shown in the diagrams).

Colonel BELL: The crossing was to show what would be brought to bear upon a certain frontage at a certain time; but, of course, the fire is intended almost entirely to be to the front.

Lord MARK KEER: The fire section of fours across would have the same effect as—a more killing one probably than—firing to the front. I was not prepared for what the lecturer has brought before us. It is entirely a matter of defence, and that is one of the most difficult parts of skirmishing drill. It is hardly the meaning of open order fighting, and never has been tried with success. What the lecturer says is very true, that it is a matter for detail and practice, not for talking about much. He has said all that can be said, I think, in favour of it, and what he has said is very true and good. The great aim of skirmishing drill is for attack, and I do not think it has been tried in retirement, except in the Franco-Prussian War, where it never was successful. Both Germans and Frenchmen retreated and got more shot, the further they went to the rear. The subject of retiring steadily in skirmishing order before an overwhelming enemy is, however, a very difficult one to grapple with in theory, and in war it is probably impracticable.

Captain COCKBURN, late 42nd Highlanders: This is a subject in which I have taken great interest, and more than twenty-two years ago I heard a friend of mine snubbed for having the audacity to suggest something similar to what has been now suggested about the power of receiving attacks in open order. What he then said was—and it was only a civilian that saved him from being sat upon by military men around him—that tactics were so thoroughly commanded by weapons, that since the introduction of the rifle he considered the whole of our old close order and double

rank tactics should be done away with; that the British square was the most terrible piece of folly that could possibly be adopted with our present weapons, and that it would have in future to be a square of skirmishers, 1,000 men covering 1,000 yards of frontage, the men ten paces apart and ten deep, in échelon ten paces behind one another. I heard him say that he considered the days of large masses were past; that he believed, and he thanked God for it, there was stuff in Old England yet: that we could teach men to lie down and sell their lives dearly. That would make victories over men in close order by men in open order advancing on them so terribly expensive that victories would be worse than defeat. It was in remembrance of those words of my friend, that I came down here to listen to this lecture, which I hoped would have explained what my friend then suggested, and what was pooh-poohed at the time, but to a certain extent has been adopted since.

Lieut.-General A. HERBERT: As no one else appears inclined to make any remarks, I take the liberty of adding my testimony to what I consider the ability of the lecture that has been given. I am well known to have been for years a supporter of open formation. I think, however, that the necessity for those formations depends on the enemy to whom we are opposed. In Zululand, in Afghanistan, and in different wars where we were not opposed by trained forces, or by regular disciplined armies, the extended formation was not in the same way required as when we are opposed by regular forces with arms of precision, as long-ranging ordnance, in which case it is absolutely necessary, if any frontal attack is to be made, that the troops must be to a certain extent in open order. Whether the formation is by files in single formation, or, as recommended by the lecturer, in fours, does not to me appear very material; but there can be no doubt that for the defence of a camp the formation recommended by Colonel Bell appears admirable. In wars with savage forces, where we always have opposed to us at least three or four times the number of men we can bring against them, we must be invariably prepared for an attack all round, and it was in that formation the troops in Afghanistan constantly moved. They were always prepared for an attack everywhere, and I believe for that reason they were successful. With regard to the fours being a defence against cavalry, I believe cavalry would ride over them just as easily as they would over files. Perhaps the broad arrow formation might have a little more effect where they were supported; but this is a formation that we can always drill our men to; it is only adding two little items to the instructions in the drill we have at present. I see nothing in Colonel Bell's lecture opposed to the present system of drill, it is merely a suggested improvement on it. With regard to intrenching in attack, I am afraid very few men would be inclined, if they made a hole and got into it, to move on. From what I have seen and read of men in action, I have always observed that when once they lay down and stopped, it was difficult to induce them to advance; therefore I should be very wary of teaching men to intrench in attack, though on some occasions it might be advantageous. As a rule, I do not think that attacks should be made by advancing with intrenching tools. Again, in retiring, I believe every one who has read and considered the question knows that under the present heavy fire men cannot retire steadily; they will always run until they come to some firm, formed body, where they can rally; and the great art we have to consider is to endeavour to teach men, when they retire, to be accustomed to be rallied quickly. I think that can be done, especially if the formed body on which the men retreating are to rally had intrenched themselves. I have found it perfectly possible at manoeuvres to mix up regiments and in a few moments re-form them, by drilling men to rally rapidly on their Captains in all sorts of formations, either advancing or retiring, and re-form; but I do not think a force which has failed in an attack can retire by sections or in any given formation. It must skedaddle up to a certain point and then re-form. Many of the suggestions made by Colonel Bell are well worthy of consideration, and so far as I can see at present, some of his suggested formations may be on occasions very useful.

The CHAIRMAN: I think Colonel Bell has given us a very interesting lecture, and as General Herbert has said, I am sure there is a great deal in what he has told us. There were a few things which occurred to me on which I should like to ask him some questions, and first of all with regard to these fours. It appears to me the formation by fours is rather small. Colonel Bell dwells a great deal on these fours being comrades, and in the habit of acting together. Casualties would very soon

disturb that comradeship, and you would have a fresh grouping of fours of men who were not comrades. I think after the first action there would be a good deal of disturbance of the moral effect of grouping fours. Fours appear to me too small a group to work together. You cannot have a responsible man to command each four. If you adopt the larger groups that they have now in foreign armies for skirmishing purposes, you appear to me to attain the object better. In all foreign armies when fighting in extended order the men are formed into groups under separate leaders; each group leader is responsible for the action of his group, and as many as eight to sixteen groups in a company you may perhaps get responsible men to command them, but you would not get responsible men to take charge of the far greater number of fours. I do not see why the formation by fours in skirmishing line should give greater power of resistance than the usual formation. The fighting line can be reinforced as it is now to any degree. In fact, we know the rule is if you are attacking at the final moment, the line comes to very much the nature of a line in close order by perpetual reinforcement that makes it strong enough for all purposes. With regard to resisting attacks of cavalry, we are taught now that good infantry in extended order need not fear any ordinary attacks of cavalry. They may remain extended, they need not assume any closer formation, particularly if they have any advantages of ground. There are cases where cavalry may attack in very large swarms and come on very boldly when it may be advisable for infantry to assume a denser formation, to form rallying squares or company squares; then I think these squares would have more resisting power than either the fours or broad arrows, and with such a number of little formations they would be firing into one another very much, or at any rate would interrupt one another's fire. You could not expect them to be all dressed well in one line, or neatly in *échelon*, they would be all dotted about, and it would be very difficult to avoid firing into one another. One paragraph in the lecture seems to imply that skirmishers must always run into some formation when threatened by an attack of cavalry; but that we are told is not necessary, and it was proved not to be necessary in the war between Germany and France in 1870: both at Beaumont and Sedan there were instances of Germans receiving very determined charges of French cavalry in skirmishing order without forming squares. With regard to the groups, I think we may take warning by the example of foreign armies. They all had these groups of fours for some years, Germans, French, Russians, and they have all given them up and taken to the larger groups. The Russians had groups of fours during the war of 1877-78; at the end of the war they gave them up, and they have now no such formation as groups of fours. With regard to the tool Colonel Bell mentions, I should like to make a remark. I think as he says, it is a most desirable thing that every infantry soldier should have a tool, and that tool should be carried by the men, and not in carts or on pack-horses. Then I think it is important that whatever tool is carried should be complete in itself, that it should not be so that one man has a handle and another man another part, otherwise you would find it difficult to get the parts together when required for use. To what extent the tool should be used is another question. Many people seem to object to use it much lest it be dangerous to the *morale* of the troops. Officers must, of course, take care not to demoralize their men by over-intrenchment, but there is no doubt in many cases troops would be saved, and success insured, by having the power of intrenching. During the late war between the Russians and the Turks, the poor Russian soldiers in attacking the fortifications of the Turks had to dig out the earth with their finger nails and mess-tin covers because they had not any tools available. I see on the diagram the broad arrows disposed like a succession of little Redans all round covering the camp. That, no doubt, would have the effect of giving flanking fire. But supposing the enemy were firing, it appears to expose a great number of points to enfilade. It appears to me that that formation would not be wise under fire, though it might be very wise against an enemy who had not firearms, or who did not know how to use them.

Colonel BELL, in reply, said: Lord Mark Kerr, by his remarks, seems to imply that this plan had to do entirely with retirement. I did not intend it to be for retirement only; my object was to make the infantry in extended order *stand* under such difficulties as they would not now in extended order be able to resist; and, as I said in the concluding paragraph, I thought it would be serviceable in a campaign

to have the power to stop an unexpected attack by the enemy with the line of extended troops while you are able to pull yourself together. It may be said that these things do not occur, but, unfortunately, we know they do occur continually, when troops find themselves in action much sooner than was anticipated. Then, I say, throwing out a stop, making cover with it, and having a distinct reserve to back it up, would give time, at any rate, for a General to take whatever action he may think desirable. I know that the four-formation is small; I quite admit that; and I see the force of what Sir Lumley Graham said. But I have built upon the fours because it is a well-known formation in the British Army; it is a thing we all understand. If I had to begin the paper again, I should only adopt the broad arrow formation on reinforcement, because it can be always closed in rear in case of necessity. My idea with regard to fours was due to its being such a well-known thing, it would be more easy to alter it in a certain way to make it useful than to bring in a startling novelty. The same thing applies to what General Herbert said, that the alterations that I propose are very slight; but I think that no person can hope to succeed in making amendments which involve changes of a very abrupt character, and I thought it would be easier to build upon what we have.¹

The CHAIRMAN: I am sure you will all join with me in thanking Colonel Bell for the interesting lecture he has given us.

¹ I wish distinctly to state that I do not place the actual "attack" in a secondary position of importance; my efforts have been directed, in a great measure, towards paving the way to it.

To give an attack practicability, it ought to be directed against the weakest part of the enemy's position, without exposing oneself to successful counter-attack, involving danger to the line of retreat or any essential point necessary to preserve it; for these very reasons, the principles of my defensive movable fire-line are advocated, leading, as they do, to choice of point of aggressive attack while holding a front.

The abandonment of the fours in foreign armies for a larger group, although I understand it to be applied to moving in attack, involves more cohesion to a small centre, more exposure to fire from there being less likelihood of cover, less extension between men, greater encouragement to independent action (which latter may be of questionable advantage, particularly if the group leader falls).

In our fours or eights there can be no dangerous individuality. In foreign armies they seem to begin by independent rallying round the Officer. We hope to pass into the last stage of attack before that becomes essential.

An Officer remarked that he would have liked the important point of the ammunition supply to have been touched upon. With regard to this, I have only to say that, if the regimental reserve ammunition and transport for it are under the control of the regimental commanding Officer, he is responsible that the men take into action, in *the valise*, a reasonable quantity not broken up, and that, when this begins to be drawn upon, more care than ever should be exercised by Officers and supernumeraries as to its control. I would suggest that, on each packet of ammunition, a short warning should be printed, such as: *Be careful not to fire away all your ammunition.*