The Art of Marching

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Wednesday, March 15, 1893.

GENERAL SIR DONALD M. STEWART, BART., G.C.B., G.C.S.I., &c.,
in the Chair.

THE ART OF MARCHING.

By Colonel E. T. H. HUTTON, A.D.C. to the Queen, p.s.c., h.p., King's
Royal Rifles, late Commanding Mounted Infantry.

"The secret of war lies in the legs."—GENERAL FOX.

("History of the Peninsular War under Napoleon.")

"Let me see two armies on the march, and I believe I could tell you the respective value of each."—LORD WOLSELEY.

("Soldier's Pocket Book.")

"Si l'on classe les connaissances militaires relativement à leur degré d'importance, les marches sont incontestablement la partie la plus essentielle du grand art de la guerre."—DE TERNAY.

("Traité de Tactique.")

It was with considerable reluctance that I accepted the invitation of the Council of this Institution to read a paper upon the important subject before us this afternoon.

I am deeply conscious of my inadequate ability to deal with the various aspects of military marching in a manner worthy of its importance, and with a treatment suited to the experience and to the matured ability of the audience which is always to be found in this lecture hall. To deal adequately with a subject of such importance would entail a close study of the past military history of all nations and of all times, as well as a close research, for which I have not the time at my disposal this afternoon. My intention will be, therefore, to confine myself to the purely practical aspect of marching. In common with many other officers, I venture to think that the instruction of our troops in this most important branch of their training has not received the attention which it deserves, and it is with this especial object that I shall venture to submit to your consideration the following remarks.

The points which I shall endeavour to make, and the observations which I shall submit, are conceived with a view to suggest ideas, and to elicit the knowledge and experience of those among the audience who have had still larger and more varied experience than myself.

I feel that less of an apology is due from me to those present who are now serving in any branch of our national military forces, as they and I must alike feel that the training and the instruction of the men whom

we lead is the primary duty of all of us, whether in the Regular army with our ever-changing floods of recruits, or in that great military school for our civil population which we understand by the Militia and Volunteer armies. The last twelve years of my service having been almost entirely devoted to the practical training of men for active service, and for active service only, *i.e.*, for war—in contradistinction to mere parade and display—of which marching comprises one of the, if not the, most important elements, I know by personal experience the extreme difficulties and the worries incidental to the incessant instruction and training of soldiers, which are felt by all regimental officers. Having also had ample opportunity of recognising the earnest and anxious zeal which characterizes those responsible for the efficiency of our young regiments and battalions, I shall be proud indeed if I shall be able to make a suggestion, or bring to light a fact, which may assist them, or in any way contribute to an improvement in that most important duty of the soldier, *viz.*, his power of marching. Far be it from me to lead any one to suppose that instruction in this particular has been neglected; the most that I wish inferred is, that what instruction is given might be improved, methodized, and enlarged upon to the increased efficiency of the Service generally. Whether or no I am justified in so doing will be for my audience to judge.

Following the line thus indicated, I will divide my subject into—

- I. Tactical Marching.
- II. Strategical Marching.

I. TACTICAL MARCHING.

Tactical marching may be said to mean: firstly, the marching and manœuvring of troops when in front of, or in close proximity to the enemy; and, secondly, the changes of formation requisite for the placing of bodies of troops in position for delivering an attack, or of defending a position. It is obvious that for such we require extreme steadiness or discipline, quickness, and precision of movement, so as to enable masses of men to be worked and manœuvred under the trying conditions of an enemy's fire at long range and with smokeless powder, modern conditions which in the future must prove trying to young troops beyond all precedent in war. In order to ensure troops being capable of being thus effectively handled, the most assiduous care and attention to details of time, distance, and drill are necessary. The importance that is attached to this portion of the soldier's training is patent to all of us. We know that the efficiency of a regiment, the capabilities of the officers, and the soldierly bearing of their men are gauged for the most part by their parade movements, and by the facility and precision of their battle formations. Every one who has commanded men in action and in the critical moments of the field of battle, knows the absolute importance of the steadiness of the men upon all occasions when under fire—steadiness which can only be ensured by careful preparation on the drill ground during peace. More than ever do we now require a quiet steady discipline,

which must be a second nature to men when the moment of trial comes during the excitement of a general action. This discipline is the primary lesson learnt upon the drill ground, and is the essence of "tactical marching."

A glance at the Infantry Drill Book of 1889, or the Provisional Drill Book of 1892, will show the very great importance justly ascribed to this portion of the soldier's training. In the one case 503 pages out of 508 are devoted to the drill, ceremonial, and battle formations of infantry, and in the latter 257 out of 260, or practically the whole of each book. In the Cavalry Regulations of 1892 we have three volumes having a total of 662 pages, which, with the exception of five pages in the third volume, are exclusively devoted to the same subjects, important as they doubtless are, viz., equitation, foot drill, mounted drill, ceremonial, and battle formations.

It is obvious then to all how much importance is attached to the proficiency of the soldier in all that pertains to his rôle upon the field of battle, and how careful are the rules for his instruction, and for his guidance in face of the enemy. No one will gainsay either the vast improvement which has taken place in the training and in the discipline of our troops, apart from that of parade and of display, which has followed upon the introduction of the company and squadron system of training. These are facts well known to those who have served recently with the troops in the field, or who are acquainted with the present, as compared with the past, conditions of discipline and subordination in our army; but I submit that we hardly realize sufficiently how seldom tactics alone, independent of superior numbers, armament, or quality of troops, determine the result of a campaign. Many campaigns are, as we know, decided by marching alone, and almost without fighting. It was the marching power of the Germans which brought together the numbers that overwhelmed the French in the great battles of 1870; it was numbers, even more than tactics or the needle-gun, which brought about the defeat of the Austrians at Sadowa. Even at Waterloo, Napoléon and his hardened confident troops were powerless against the overpowering numbers brought against him on the arrival of the Prussians, by their long and dogged tramp through the muddy lanes of the Dyle Valley. Rarely could even Napoleon's genius turn the tables on the battle-field when the numbers were against him. Again, the casualties arising from the marches, the "strategical marches" incidental to great strategical combinations, often exceed those of a battle. "Therefore, from the point of view of economy of life," says an English military writer, "the march requires as careful study as the battle." The wastage of men and horses has been estimated at 2 to 3 per cent. per 100 miles, and under unfavourable conditions this percentage may be indefinitely increased.

We must be prepared to admit that the acquisition of the "art of tactical marching," synonymous with drill and manœuvre, monopolizes almost exclusively our attention, in so far as the training of our men and horses is concerned, and it is to this consideration in conjunction with what follows, that I would especially invite your attention.

The old Musketry Regulations of the Army not long since contained the statement, "that the man who could not shoot was an incumbrance to the battalion." Surely if such a statement were ever true of "shooting," it must be doubly true of "marching," inasmuch as a man or a regiment, who or which cannot march, cannot be expected to be brought into a position where he or it can shoot, be it well or ill, and he or it must consequently be an even greater incumbrance. However this may be, we must allow that while parade marching, drill, shooting, bridging, and a variety of other useful forms of instruction are part of the curriculum of a soldier's training, whether cavalry or infantry, the teaching and practice of long distance marching as an art is confined to a few route marches oft-times perfunctorily performed during the winter months when officers and men are for the most part on leave or furlough; while in the Militia or Volunteer regiments this portion of a soldier's duty yields almost entirely to tactical drill, marching, and manœuvre.

We devote our energies almost entirely to the end, neglecting to a great extent the means to that end. "Le combat est le but," writes the great French authority, General Lewal; "la marche est le moyen d'y arriver."

"Europe has witnessed the celerity of our strategical and tactical movements, and it has been panic-stricken: for the *secret of war lies in the legs*," wrote one of the ablest of the great Napoleon's Generals with reference to the sweep of the Grande Armée from Boulogne across Europe, and the capitulation of the Austrians at Ulm rendered inevitable thereby.

II. STRATEGICAL MARCHING.

I will subdivide this portion of my subject into two heads, one only of which do I intend to press upon your attention to-day, viz. :—

- a. "The science," or the "logistique," as it has been called, of marching.
- b. "The art of marching" i.e., the art of moving troops over large areas by roads, &c., for purposes of military combinations, and of the training pertaining thereto.

a. *The Science or the Logistique of Marching*.—It does not come within the scope of a short paper to deal with so vast and so difficult a subject as that comprised under the head of the science of marching, viz.: the scientific combination of marches, and the calculations of time and distance, by means of which strategical conceptions are worked out.

This is a deep subject, and one more appropriate to the close study and consideration of the Staff of an army, than to that of the officers responsible for the personal instruction and leading of the men. For those who may wish to pursue this part of the subject farther I would commend a close study of Lord Wolseley's "Soldier's Pocket Book," Colonels Clarke and Rothwell's "Staff Duties," being a series of lectures published for use of officers at the Staff College,

Verdy du Vernois' "Studien über Truppen Führung," Lewal's "Conférences sur la Marche d'un Corps d'Armée," the principles of which are now embodied in the French Regulations (viz.: "Service de l'Infanterie en Campagne," and "Service de la Cavalerie en Campagne"), and the latest edition of an "Aide-Mémoire d'un Officier d'État Major," published 1893.

b. The Art of Marching.—The taunt is no new one that the British Army cannot march, and I need hardly recall to your recollection the strictures, the justice or injustice of which it is not material just now to discuss, upon the efficiency of our modern infantry regiments, which made our ears tingle and our cheeks blush with indignation hardly a year ago. "That our marching regiments cannot march is certain. The battalions cannot march, and the regimental officers know it. There are brilliant exceptions, but the rule is as I have stated." So wrote the present Member for Belfast, Mr. Arnold-Forster, in the second letter of a series which appeared in the "Times," at the end of 1891.

It is not my province, nor is it on the face of it necessary to disprove so sweeping, so unfair a charge; I cannot, however, omit to bring home to you a statement which remains to this day unchallenged, and the accuracy of which statistics may very easily be distorted to warrant.

"In the twenty years which have elapsed since the tremendous lesson taught by the overthrow of France," wrote "*Vetus*," in the "Times," in the first of those letters which profoundly stirred the reflecting portion of this country, at the commencement of 1892, "the (military) progress attained in England has been relatively trivial . . . Following the wake of Europe, we have partially modernized our drill books. In artillery we have, with halting steps, traced the path well trodden in advance by other Powers. Only the periodic halts in the march of progress enable the distance of the straggling rear guard to be temporarily diminished. . . . When last year (1890) a body of cavalry was assembled for manœuvres on the Berkshire Downs, it was obvious to all observers that the very elements of real military training were absent. . . . The manœuvres in Hampshire this year (1891) . . . Some battalions proved incapable of accomplishing a short march without leaving a large percentage of their numbers behind. Yet marching is mainly a question of boots properly fitted, and of previous training, that is, of company officers and battalion commanders."

True or false, such is the picture conjured up by the writer of perhaps the most powerful series of letters ever made public upon a national question. "No more masterly and comprehensive criticism has ever been contributed to periodical literature," writes the "Times." It would, therefore, be idle to ignore the impression which these strictures have left upon the public mind, and we should do well to ask ourselves whether in the immediate present we have done all we could for the marching power of our men, or whether we cannot do more for the training of our men in this most important of all soldier's duties, viz.: that of marching. It is not enough to urge

what we *do*, or what we *have done*, let us rather ask ourselves whether we cannot *do more*. It is a sad reflection enough to find that we have not impressed the civilian mind as to the earnestness with which we labour at the training of our men, and the energy which we throw into our profession; it must rest with our consciences as to whether we are maligned or no.

Nothing impresses even a cursory observer more in visiting a Continental army than the earnestness and the persistency with which foreign officers devote themselves to the training of their men. The Continent of Europe is now one vast military school, of which the regimental officers are the teachers. The devotion with which these carry out their daily, continuous, and wearying round of routine instruction requires to be seen to be appreciated. The instruction and training of their men in marching occupies a large share of their attention.

It is manifestly absurd to say that British troops cannot march, and I will not for a moment admit that our regimental officers are one whit behind their Continental *confrères* in the earnest and careful discharge of their duties. Without carrying you back to the days of Marlborough, Wellington, or the earlier campaigns in India, I need but to remind you of Lord Napier's march from Zulla to Magdala in 1867, of Sir Donald Stewart's great march from Kandahar to Kabul, and of Lord Roberts' great and more widely known march from Kabul to Kandahar in 1880 (of which the itinerary is given in Appendix A), the march of the cavalry division from Kassassin to Cairo, including the battle of Tel-el-Kebir in 1882, and the march of the Royal Irish across the desert in 1885 from Korti to the Nile at Gubat and back in 1885. I will here briefly recapitulate the facts for the benefit of those who may have forgotten the details of each:—

SOME INSTANCES OF STRATEGICAL MARCHES IN RECENT CAMPAIGNS.

The Abyssinian War, 1867.

Lord Napier and his headquarters left Zulla on the 25th January, 1867, and the whole army reached Magdala on the 13th April following, a distance of over 400 miles in 78 days, including a general action fought at Arogee, and the capture of the stronghold of the Abyssinian King.

"We have accomplished," wrote Mr. Henty, a chronicler of the war from personal knowledge, "a march through a country of fabulous difficulties, destitute of roads, and almost destitute of food." "You have traversed often under a tropical sun, or amidst storms of rain and sleet, 400 miles of mountainous and rugged country," said Lord Napier in his farewell general order to his army, "you have crossed mountains (many steep and precipitous) more than 10,000 feet in altitude." "The remembrance of your privations," he adds, "will pass away quickly; your gallant exploit will live in history!"

The Afghan Campaign, 1879-80.

An army of 7,250 British and native troops, under General Sir Donald Stewart, left Kandahar on the 23th March, 1880, reached Khelat-i-Ghilzai on 6th April, Ghazni the 25th, and Kabul on the 1st May, 1880. Two general actions were fought, one on the 19th April, at Ahmed-Khel, and the other at Urzoo on the 23rd. The march was effected through a hostile, difficult, and previously unknown country, yet the total distance of 320 miles was covered in 35 days, including halts, &c., giving a general average of 9·1 miles per diem.

Again, 10,000 men, under General Lord Roberts, left Kabul on the 8th August, 1880, and reached Kandahar on the 31st of the same month, fighting a general action on the following day. This march, carried out over the same route as that of Sir Donald Stewart's force, but in the hottest time of the year, was effected in 24 days, inclusive of halts, giving an average of 13·3 miles per diem, or of 14·5 miles for the days of actual marching.

Egyptian War, 1882.

The cavalry division, including horse artillery guns, and a small force of mounted infantry, under the command of Lieutenant-General Sir D. Drury-Lowe, marched with the rest of Lord Wolseley's army from Kassassin, at 8 p.m., the 12th September, and, continuing through the night, took part at daybreak in the battle of Tel-el-Kebir. This same force marched again from Tel-el-Kebir almost immediately after the battle, and captured the citadel of Cairo, distant 58 miles, by a *coup de main*, at 8 p.m. on the 14th, thus summarily bringing to an end that short and brilliant campaign.

This march of 70 miles in 48 hours was effected through a hostile and previously unreconnoitred country, and included a long night march of a peculiarly trying character and a general engagement.

Nile Expedition, 1884-85.

Lord Wolseley having decided to reinforce the Desert Column which, after defeating the Mahdi's troops in two engagements, was halted and entrenched upon the Nile near Metammeh, directed the 1st Battalion Royal Irish to cross the desert from Korti to Gubat by forced marches.

The headquarters of the regiment and three companies started, accordingly, upon the 28th January, 1885, and the next three companies on the 31st. The desert presented fair marching ground, as the sand was in most places hard and firm—the weather was very hot by day but the nights were cool. There was little or no water except at Gakdul, and all water for drinking and cooking had to be carried. There was much suffering entailed upon the troops in consequence.

The following itinerary gives the time and distances for the latter three companies as far as Gakdul, and for the whole regiment from Gakdul to Gubat and back:—

	Time and date.		Distance.
Korti.....(dep.)	10 A.M.	January 31, 1885	} 100 miles.
Gakdul.....(arr.)	9 "	February 5, 1885	
Halt.....		" 6, 1885	
Gakdul.....(dep.)	4 "	" 7, 1885	} 52 miles.
Abu-Klea....(arr.)	9 "	" 10, 1885	
	(dep.)	3 P.M.	
Gubat.....(arr.)	say 10 A.M.	" 11, 1885.	21 miles.

Thus the distance from Korti to Gakdul was made in 119 hours, or at the rate of 20·16 miles in 24 hours, and from Gakdul to Gubat in 102 hours, or at the rate of 17·16 miles in 24 hours. The same regiment retired from the Abu-Klea Wells to Gakdul by forced marches in 65 hours, or at the rate of 21·36 miles in 24 hours, as follows, viz. :—

Abu-Klea.....(dep.)	6 P.M.	February 23	} 52 miles.
Gakdul.....(arr.)	11 A.M.	" 26	

The men marched throughout most of the nights of 23rd—24th and 24th—25th. The strength of the regiment was about 620 all ranks, and the men carried rolled great coats, water bottles filled, and 70 rounds of M.H. ammunition. The remaining kit, consisting of one blanket, one waterproof sheet per man, and a small kit bag for every group of four men, was carried upon camels. One gallon of water per man was nominally allowed, but the allowance really issued, owing to evaporation, was considerably less.

SOME INSTANCES OF RECENT MARCHES FOR TRAINING PURPOSES IN PEACE.

As examples of what can be effected in peace-time by young soldiers without the excitement of active service, I would merely quote the following:—The first instance is of one of the infantry brigades at Aldershot, the second of a battalion of infantry in Ireland, which has devoted much care and attention to marching during the last three or four years, the third of a march performed by three Horse Artillery batteries for experimental purposes, the fourth and fifth instances of small detached parties of mounted troops.

1st Instance. (An infantry brigade at Aldershot.)—The numbers of men shown present on parade are relatively small, owing to December being the furlough season. Only those marches are quoted in which accurate times and distances were recorded (see p. 629).

2nd Instance.—At the end of last winter, after a series of carefully conducted route marches, a battalion of infantry, now quartered in the south of Ireland, marched upon one occasion 22 miles in full marching order in 9 hours and 35 minutes, including a long halt of about 1½ hours, giving an average of 2½ miles per marching hour; and, upon another, 20 miles without valises in 8 hours 25 minutes, including an hour's halt, giving an average of nearly 2⅞ miles per hour.

Date.	Numbers on parade.	Dress. ¹	Time taken, including halts.	State of roads.	Distance in miles. ²	Numbers falling out.
			h. min.		miles fur.	
Dec. 15, 1892..	1,181	M.O.	3 5	No record kept.	11 6	3
Jan. 5, 1893 ..	877	M.O.	4 10	Dry.	13 4	4
Jan. 12, 1893 ..	1,037	D.O.	5 15	Dry, but very slippery at first.	17 0	2 ^{3,4}
Jan. 20, 1893..	1,501	D.O.	5 20	Road heavy.	17 4	7
Jan. 26, 1893 ..	1,340	D.O.	5 20	Roads heavy.	18 2	3 ^{3,5}

¹ M.O. = marching order; D.O. drill order.

² Distances taken from 2-in. map, with 1 mile added for turnings when over 12 miles; $\frac{1}{4}$ mile when below 12 miles.

³ Rolled capes, haversacks, water-bottles were carried, weight 18 $\frac{1}{2}$ lbs.

⁴ One man sprained wrist from fall.

⁵ One man who also fell out on 20th, 25 years of age.

This same battalion held, at the end of last year, company marching competitions in marching order, at which the winning company team of one non-commissioned officer and eight men marched 20 miles in 4 hours 37 $\frac{1}{4}$ minutes, or at the rate of 4 $\frac{1}{4}$ miles per hour.

Note.—It must be borne in mind that the units referred to in the two instances above were small, and that they were unaccompanied by transport; consequently the rate per hour is greater than that usually allowed upon the Continent for marching bodies of troops.

3rd Instance.—At the beginning of 1893 three Horse Artillery batteries made an experimental march from Aldershot to Woolwich and back, 96 miles, in complete service marching order, in 40 $\frac{1}{2}$ hours. One horse had a slight girth gall. Thus:—

Aldershot	(dep.)	4 A.M. 9th	} 96 miles.
Woolwich	(arr.)	3.40 P.M.	
	(dep.)	8.30 A.M. 10th	
Aldershot	(arr.)	8.30 P.M.	

Halts were made at Ripley and Clapham.

The following are given as examples of the physical efforts which can be exacted from small bodies of mounted troops without affecting their efficiency and without any unusual effort.

4th Instance.—1. An officer's patrol, selected from a given troop, of the 14th Hussars, consisting of one officer, two non-commissioned officers, and six privates, with one led horse, was ordered to march from Strensall Camp, 7.15 A.M., July 27, 1892, to Bramston on Bridlington Bay, 39 miles, at which place the officer was to make a reconnaissance and sketch, returning as quickly as possible.

This party only received its orders at 6.15 A.M. the same day, and had no previous warning. It reached Bramston at 12.50 P.M., and left again for Strensall, where it arrived by a slightly shorter route (37 miles) at 9.15 P.M.

A total distance of 76 miles was thus covered in 12 hours, including the halt at Bramston of 2 hours and 25 minutes, during which the officer made the required sketch and report.

Average weight on horses' backs, 15 st. 9 lbs.

Casualties, *nil*.

The Commanding Officer of the 14th Hussars states in his report: "That the first small halt took place 20 minutes after starting . . . besides this there were only two other small halts in the journey to Bramston; but to make up for the small amount of halting, the men constantly dismounted and led horses, thereby easing and resting themselves and their horses, and making progress instead of stopping."

5th Instance.—A party selected from the 4th Division (2nd South Lancashire Regiment), No. VI Company, of the Mounted Infantry, provided with cobs, on the 19th November, 1891, made the following march:—

		Men.	Horses.
North Camp (dep.)	5.15 A.M.	Coffee.	2 lbs. oats and 2 lbs. hay.
Alton (14 miles) (arr.)	7.55 "	Breakfast.	2 lbs. oats.
	(dep.) 8.40 "		
Winchester (35 miles) (arr.)	12.20 P.M.	Dinner.	4 lbs. oats and 2 lbs. hay.
	(dep.) 2.40 "		
Alton (55 miles) (arr.)	6.17 "		Gruel, $\frac{1}{2}$ lb. oatmeal in
	(dep.) 6.37 "		half a bucket of luke-warm water.
North Camp (arr.)	9.15 "	Supper.	4 lbs. oats and 4 lbs. hay.
Distance, 69 $\frac{1}{2}$ miles.		Time, 16 hours, inclusive of halts.	

Casualties—One cob fell and injured one knee slightly.

The men carried the magazine rifle with experimental rifle sling and bandolier waistbelt, holding forty rounds cordite ammunition, haversack, and water-bottle—average weight of man, accoutrements, and saddlery, about 14 st.

The cobs averaged 14 $\frac{1}{2}$ hands, and were equipped with Cape pattern saddles and wallets. Rolled greatcoats were carried strapped over and two horse shoes with forty rounds of ammunition inside the wallets.

6 lbs. of corn were carried in two nosebags, which were strapped close to and upon the fannies of the saddle, so as to balance and steady one another.

Great stress was laid upon the party marching on foot and leading their cobs, as in the case of the party of the 14th Hussars, at the regular intervals embodied in the suggestions for marching given hereafter.

The instances which I have given above are the performances in the case of the marches on service, of troops hardened and seasoned, and trained in the school of war, while in the case of the

marches in peace-time, I have merely instanced the isolated performances of certain corps in which particular stress has been laid upon the value of marching. Not one of these instances, however, can be held to be a criterion of the average ability of our home army, Regulars, Militia, and Volunteers, in marching.

The marching value of an army is that of its worst regiments rather than of its best, for we cannot afford to march so as to out-march our worst regiments, and thus deplete them of their men. It is therefore to improve the average marching power of our men that we must direct our attention.

It is obvious that no calculations can be satisfactorily worked out by a Staff, no matter how efficient, unless some distinct normal rule for marching is laid down, and some general system adopted for general guidance by all branches of an army upon the march, which shall be subject to such modifications as circumstances of climate and of country may render necessary.

"Good spirits, good roads, high training, and favourable weather, on the one hand," writes Colonel Maurice in "War," "and depression, deep mud, storms, and want of marching condition, on the other, are elements that must be taken into account." Clear as it is that such conditions must be borne in mind, it is no less clear, and it is indeed absolutely essential, that we should have a fixed normal system of marching, embodying the principles upon which marches of cavalry and infantry are to be conducted. It is hardly too much to say that such a system is with us an unwritten law, and that we have no clear and defined standard rate or system of long distance or strategical marching for either cavalry or infantry; hence it follows that no calculations with any pretensions to accuracy can be made.

It is with regard to the importance of such a clearly defined marching standard that I wish to invite your attention, in the first place because that, without such a standard, reliable calculations for combined movements of troops on a large scale are impossible, and, in the second place, because there must be some universally recognised system, if we are to train our young soldiers satisfactorily, whether Regulars, Militia, Volunteers, or Yeomanry, with a view to developing their maximum marching power when required to act in large, or even in small units of command.

The rate of marching laid down in the Infantry Drill, 1892, viz., 120 paces of 30 in. per minute, gives a rate of 3 miles 720 yards per hour, or, including 5 minutes' halt, 3 miles 220 yds. per 55 minutes. This pace is obviously too great for the movement of larger units of command than a battalion, or perhaps of a weak brigade without baggage train. It is universally accepted by Continental authorities that the rate for marching under campaigning conditions is $2\frac{1}{2}$ miles per hour, including 5 to 10 minutes' halt.

If we consider the daily march of a large number of men, horses, and wagons, it requires little argument to show that certain fixed principles of march are absolutely necessary. It will not suffice to say that we must be guided by circumstances, and that a preconceived system will unnecessarily fetter individual initiative.

"Ce qui est fait sans principes arrêtés donne trop de chances au hasard" ("Tactique des trois Armes." Decker). We shall do well then to put on one side "chance," so far as lies in our power. The first quality in a man who knows war is foresight and prearrangement. Let us therefore reduce, so far as possible, the principles which we must all acknowledge, the system which we consider to best represent our requirements, into a normal standard upon which we may base our calculations, and up to which we may train the staying powers of our horses and men. "Cette formation normale," wrote General Lewal, in his "Conférence sur la Marche d'un Corps d'Armée," "est non seulement nécessaire, mais il y aurait danger à agir autrement." It will always be easy to graft upon such a standard the modifications necessitated by times, climate, and local circumstances, but without it we must enter upon a campaign without a recognised system, and without those means to a well regulated system of marching which alone can ensure success to an army.

The French army, learning from the sad experience of 1870 how fatally had been ignored the lessons of the Napoleonic wars in this respect, have a carefully devised standard for marching their cavalry and infantry, and for the training of both in this duty. The Germans and the Austrians have always made a *spécialité* of marching.

French Scale of Marching.—I propose briefly to record here, as material to my object in view, the standard of marching laid down in the French army for cavalry and infantry, the first drawn up by General Gallifet, and the second by General Lewal.

Cavalry:—

Rate of march.—5·6 to 6·2 miles per hour.

Pace.—Alternation of pace, varying according to circumstances, in the proportion of quarter at a walk to three-quarters at a trot to half at a walk and half at a trot.

Distance.—31 to 37 miles per day.

Forced march.—Every officer must be able to cover with his command by the foregoing rules 12½ to 180 miles without detriment to the efficiency of his men and horses.

Halts.—The frequency and duration of the halts are regulated according to the object of the march and the distance to be covered.

Cavalry, when marching with infantry, conform in every respect to the routine laid down for the marching of that arm.

Infantry:—

Rate of march.—2·48 miles per hour, including the short halt.

Halts.—A short halt, or "halte horaire," for 10 minutes at the end of 50 minutes' marching. A long halt, or "grande halte," for a light meal when the march extends beyond 4 or 5 hours. A halt of 3 to 4 hours, or "long repos," when a forced march of 24 to 30 miles has to be made.

During the hourly halts, all distances are corrected, and the men pile arms and take off their packs. The halt and the subsequent advance are alike simultaneous, and are made upon a given signal.

Thirteen miles per diem is the average length of march for the infantry.

It will be interesting to record here the words of an officer who accompanied the French army during the manœuvres of 1891, and to note what he says of the effect of the careful standard and elaborate system of training for marching which has been introduced of late years into the French army:—

"The convention and unreality inseparable from all peace manœuvres have less influence upon marches than upon any other operation. Under this head there is nothing but well deserved praise to be given to the astonishing endurance of the men, and the precise organization of the marches. . . . The march discipline was excellent throughout, all officers keeping their places, and the distances being carefully preserved. Thanks to all these carefully prepared measures, and to the adoption of common sense principles, the marches were an unqualified success throughout the operations. For instance, on the 11th September, the march of the equivalent of an army corps was watched and reported on in detail. There was not a single check during the passage of the troops which took place on one road, and occupied seven and a half hours."

This officer, who is well competent to judge, thus sums up:—

"From these (the foregoing) considerations of the whole system of marching in use in France, one may conclude that the mechanism of the movement of large bodies has been thoroughly studied, and that a solution has been found which, without undue fatigue upon the infantry, fits in well with the employment of large numbers, and the effective action of masses on the battle-field."

It is with great deference, and with no wish to press unduly upon the many older and more experienced officers whom I see around me the details of a normal standard for long distance marching, that I have ventured to suggest for your consideration the following tables and remarks. These embody the fundamental principles upon which alone all military authorities seem to agree in thinking that the real value of an army must depend.

Proposed Normal Scale of Long Distance or Strategical Marching.

Cavalry.

Before submitting to you a normal scale for long distance marching of cavalry, I would preface my suggestions by inviting your attention to the rate of march indicated in the third volume of Cavalry Drill, page 643. The rate of 5 miles per hour is there laid down as that upon which calculations for cavalry marching are to be based. This rate no doubt includes all halts, and is presumably to be considered the average rate for an ordinary day's march of 24 miles. The alternation of pace, however, at which this rate is to be carried out would appear to be in the proportion of at least half trot to half walk, which would necessitate a considerable increase of speed from that of 5 miles per hour. Thus:—

	Time, minutes.	Distance, miles. yds.
Trot, at 8 miles per hour....	30	4 0
Walk, at 4 miles per hour ..	25	1 1,173
Halt	5	..
Total	60	5 1,173

The following normal scale has been drawn up, and based upon the practical experience of marching, and will be found to vary but little from that in use in the French army.

First Hour.

Start—

Trot....	10	}	30 minutes = $3\frac{1}{4}$ miles.
Walk ..	5		
Trot....	15	}	Tighten girths, look over saddles, shoes, &c.
Halt....	5		
March on foot ..	10	}	30 minutes = $2\frac{1}{4}$ miles.
Trot....	10		
Walk ..	5	}	

Second Hour.

Trot....	15	}	30 minutes = $2\frac{1}{4}$ miles.
Halt....	5		
March on foot ..	10	}	
Trot....	10		
Walk ..	5	}	30 „ = $3\frac{3}{4}$ miles.
Trot....	10		
Walk ..	5	}	

Halt for half an hour and small feed.

24 miles will thus be covered in $4\frac{1}{2}$ hours, or at the rate of 5.3 miles per hour.

The variations of the marching must be adapted to circumstances, such as state of the roads, the physical nature of the country, and the condition of the horses; but the general principles indicated above in the routine for marching should invariably be observed.

The average rate of marching, including short halt, should be 6 miles an hour; there should be half an hour's halt after every 2 hours' marching. In a prolonged march, after 4 hours the horses should be fed, and the men have dinners, or a meal of bread and cheese.

The trot is calculated in accordance with the existing Cavalry Regulations for Tactical Marching at 8 miles per hour, or 235 yds. per minute, and the walk at 117 yds. per minute, or 4 miles per hour.

Officers should mark beforehand upon their maps the points on the road which the parties under their charge should reach at the end of each hour, and so far as is possible arrange for the prolonged

halts to take place at suitable places on or near the road. By these means accurate time can be kept in covering long distances, and an evenness of pace, with proportionate distance, is insured.

Marching on Foot—Halts.—In every hour there should be a halt of about 5 minutes, and the men should dismount and lead for 10 minutes; by this means the horse is relieved of the weight of the man and his arms for a quarter of an hour in each hour, and the free circulation of blood is thus allowed into the skin of the back under the saddle, one of the surest preventatives of sore backs.

In marching on foot the bridoon reins should be passed over, and the horses led in half sections, the men on the inside of their horses, and the horses close to the outer edge of the road, on either side; stirrups and leathers being crossed over the flap of the saddle. The rate of marching should be at least 4 miles an hour, and the horses and men kept locked up.

Feeding and Watering.—Horses' stomachs are small in proportion to the size of their bodies and their food requirements; it is therefore most advisable that, if possible, at each prolonged (*i.e.*, half hour's) halt they should be first watered, and then, if possible, a small feed (not more than 2 lbs. corn or a little hay) should be given. In tropical climates, or hot weather, the nostrils and mouth should be wiped and moistened with a wet sponge kept for that purpose in the wallet when it is impracticable to water.

There is no operation which requires more care, attention, and forethought than the watering of a considerable number of horses. A careful and organized arrangement for watering must be made before the arrival of the column, or horses will be badly watered, and much valuable time lost.

Upon approaching the proposed watering place, an officer should invariably be sent forward to ascertain the most suitable means for watering, and the formation best adapted to the situation before the arrival of the column.

A canvas bucket has been proposed as a part of the cavalry soldier's equipment, and is universal in the French cavalry, which enormously facilitates the watering, and enables horses to be watered more rapidly, and without regard to the approaches to, or situation of, the watering place.

Every opportunity should be taken during a march of allowing horses to graze or nibble grass during the short halts. Horses should be watered slightly whenever possible, care being taken that they are not watered immediately after being fed.

General Remarks.—Constant supervision on the part of officers and sergeants, with incessant attention on the side of the men, are necessary to avoid casualties to horses and men from sore backs, injuries, or weariness.

Columns must preserve their distance accurately, and the greatest care must be observed in regulating the pace according to the facilities or otherwise of the road. Turning corners, going up or down hill, passing obstacles or obstructions, are fruitful causes of loss of distance, and consequent increase of pace by those in rear, unless the

most anxious care and attention are devoted to the corresponding alteration of pace necessary by the leading portion of the column.

When possible the column should be in half-sections, each man upon the outside of the road, thus allowing the officers to pass freely up or down the column, and giving passage to traffic between the files.

The four most important points for officers to note when marching with their men are—

- a. That each man sits square and steady on his horse.
- b. That no man quits his stirrups, and that, when trotting, each man rises in his stirrups, leaning slightly forward.
- c. That no buckle, strap, or portion of the rolled blanket touches the ridge bone of the horse behind, and that the front arch is well above the crest and withers in front, and that no strap or article which may chafe or injure be allowed to get under the saddle.
- d. That the saddle is properly girthed up, and does not oscillate.

Horses are to be ridden on all four reins or upon the bridoon only, but they are to be made to "ride" up to their bits either at a walk or at a trot.

At the trot each man should rise in his stirrups, always throwing the weight of his body forward. The weight of the body should be almost entirely supported by the knees and thighs pressing against the horse's side, and by the feet resting in the stirrups. In this manner the weight of the body being hardly ever upon the seat of the saddle, is borne by the side bars. The weight is thus supported by the ribs of the horse, and the possibility of injuring the ridge bone is minimized. Men are not permitted, under any circumstances, to quit their stirrups.

This system of riding, though tacitly admitted and generally practised, is not acknowledged in any regulations that the writer is aware of. The importance of some definite rules upon so vitally important a detail is much felt.

Rear-Guard.—There will invariably be an officer, a non-commissioned officer, and one or more farriers, who will form a rear-guard to all columns. This officer will be in charge of, and be responsible for, all men and horses who fall out or lose shoes. He will insure that men falling out do not attempt to rejoin their troops, but remain in rear of the column until the next halt.

Men whose horses require to be re-shod, or who for any cause are compelled to fall out and remain behind, will rejoin the rear-guard at a steady trot.

Artillery.

The rate of march and the routine to be observed are clearly laid down in the R.A. Drill, vol. ii, p. 252, *et seq.* These instructions are here recapitulated and tabulated for comparison with those suggested for cavalry and infantry.

First Hour.

Start—				
Walk	30	minutes	}	= 4 miles.
Halt	10	"		
Walk and } ..	20	"		
Trot				

Second Hour.

Walk and } ..	30	minutes	}	= 4 miles.
Trot				
Halt	10	"		
Walk and } ..	20	"		
Trot				

Rate of march 4 miles per hour.

The length of an ordinary day's march is laid down as from 15 to 20 miles.

In a more than ordinarily long march, a halt of an hour is directed, with a little water and hay or grass.

The directions, clear and precise as they are, appear to be framed solely with a view to artillery on the march by themselves, and without reference to the other arms. It is obvious that 4 miles is far too rapid for the march of artillery moving with infantry, as it is also too slow for horse artillery moving with cavalry.

It would appear desirable, therefore, to make it clear that artillery must conform its rate of march to that of the arm with which it is for the time being associated, and that it must adhere exactly to the routine of march laid down for that arm.

Infantry.

The rate of marching laid down in the Infantry Drill is at the rate of 3 miles 720 yds. per hour, or 100 yds. per minute, exclusive of a halt of 5 minutes per hour. The Cavalry Drill, Vol. III, p. 577, assumes the rate of infantry marching to be 3 miles per hour, but in the absence of any precise instructions it must be assumed that the rate of long distance marches is as laid down for manoeuvre marching, which would give, including 5 minutes' halt, a distance of 3 miles 220 yds. per hour.

This rate of march is considered by Continental authorities to be far beyond the capabilities of ordinary troops, except, perhaps, when moving in small bodies, without baggage columns and lightly equipped.

The French, who have the tradition of being the best marchers in Europe, lay down in precise form the rate of march for their infantry at 5 kilometres or 2·48 miles per hour, including 10 minutes' halt, giving, therefore, 2·48 miles in 50 minutes, or 87·5 yds. per minute. The Chasseurs Alpins—the pick of the French infantry and who take special pride in their marching powers—march at the rate of 5 kilometres or 3·1 miles per hour, including 10 minutes' halt, or 3·1 miles in 50 minutes.

I have in the following routine, therefore, taken $2\frac{1}{2}$ miles as the standard long distance marching rate for our infantry, which is rather more than that laid down in Lord Wolseley's Pocket Book, in Sir George Colley's paper on "Marches," and in the French Regulations, when considerable bodies of troops are involved.

Start—	<i>First Hour.</i>	
March, 30 minutes	} = $2\frac{1}{2}$ miles.	
Halt, 5 "		
March, 20 "		
Halt, 5 "		

	<i>Second Hour.</i>	
March, 50 minutes	} = $2\frac{1}{2}$ miles.	
Halt, 10 "		

Third and fourth hours same as second.

If the march exceed 5 hours or $12\frac{1}{2}$ miles, a halt of 1 to $1\frac{1}{2}$ hours should be made at two-thirds of the distance; if the march exceed 7 hours or $17\frac{1}{2}$ miles, a prolonged halt of 2 to 3 hours should be made for a meal.

The ordinary march should be reckoned at 13 miles.

It may interest the audience to note Appendix D, which gives the number of marches and average rate per diem for all the principal campaigns from 1796 to 1866.

The usual rate $2\frac{1}{2}$ miles per hour includes 10 minutes' halt.

The distances should be rigorously maintained, and the halts with subsequent advances made simultaneously by the whole force.

The duration of the halts is somewhat lengthened from that laid down in the Infantry Drill in order to allow time for the distances to be corrected, valises to be removed, and arms to be piled. The French find that five minutes will not suffice for this operation.

Special care must be taken in turning corners, going down or up hill, passing obstacles, &c., to prevent loss of distance.

Officers, remaining constantly in their places, must be incessant in their attention to their men.

In the foregoing routine suggested for infantry long distance marching it is naturally assumed that the troops are in marching order with the regulation amount of ammunition, &c.

Training.

It is obviously impracticable in discussing a routine which shall embrace only given principles to consider the changes which would be necessitated for marching in such countries as India, Afghanistan, West Africa, South Africa, Egypt, North America, &c. The writer wishes only to suggest some standard for general use founded upon acknowledged principles which can be adapted to local circumstances, but which at the same time will be a basis upon which to frame calculations, and to found a regular system of instruction.

It is obvious that the given rate of marching may be slightly increased in the case of smaller bodies of troops, but the normal standard suggested above seems to be that which should govern all calculations and all training.

It is obvious that long and continuous marching, whether by infantry or cavalry, can only be successfully undertaken after the most careful preparation and training, and when once this training has been carried out, most truly marvellous results have been achieved. The account and detail of one of the most remarkable marches accomplished by cavalry in modern wars will be found in Appendix B. For those interested in the staying powers and endurance of single horsemen, the detail of the celebrated ride of Lieutenant of Cossacks Peschkoff will also be found in Appendix C.

The training of men for marching is a question which must be largely governed by circumstances and local conditions. A scheme for developing the marching powers of soldiers which would be applicable to troops serving in one part of the United Kingdom will not be practicable for troops serving in another. It is only possible, therefore, to indicate the general principles of training for general guidance, leaving the details of alteration to suit local requirements entirely in the hands of those personally responsible for the efficiency of their units of command. A sufficiently high standard would soon be insured, were it understood that the standard of excellence of a regiment, whether of cavalry or infantry, would be gauged by an inspecting General, not only for its proficiency in drill or manoeuvre, shooting, or good conduct, but also for its proficiency in marching long distances without detriment to the efficiency of its horses or men.

"The subject (of marching) is one, which, though much discussed, is little practised in our Service," says Colonel Tyler, R.A., in a short but valuable paper contributed by him to the R.A. Institute Journal, vol. xv, entitled "Time, Pace, and Speed."

The same authority says, "Our officers and men do not know what can be accomplished when the supreme moment arrives, and I cannot but think it would be of great advantage to the Service if such trials (*i.e.*, of long-distance marching) were made part of the annual course, and that batteries should be called upon to perform a march as a part of their inspection . . . a better idea could be formed of the condition of the horses and the fitness of the battery for service than can be arrived at under the present system of parades."

I submit that the training in marching should be carried out in as regular and systematic a manner as the training in drill, in equitation, and in musketry, and that regulations upon this subject should be equally clear and comprehensive in the principles laid down for general guidance.

It would be obviously impracticable to lay down a hard-and-fast scheme which would apply equally to troops quartered in the middle of Sheffield or Manchester, to those encamped at the Curragh or Aldershot, to regiments in garrison at Malta or Aden, and to regiments at Pieter Maritzburg or Jamaica, to Volunteer regiments

having their headquarters situated in a densely populated portion of this city, or to a country corps distributed over a large area. I am, moreover, one of those who would leave the training of men in these matters entirely in the hands of the company and regimental Commanders, knowing from experience that the more the responsibility of command is diffused, the higher is the standard of excellence attained, whether in drill, in discipline, or in marching.

I will, however, describe the system adopted by the Chasseurs Alpins, the Chasseurs de Vincennes of the Empire, which, serving as these troops do under more or less similar conditions to the rest of the French army, may, at least in principle, be considered as general.

The yearly training in marching commences for the recruits in April, concurrently with the instructional marching for the 2nd and 3rd year men. The course begins by two marches per week of 20 km. each, or $12\frac{1}{2}$ miles, with knapsack empty and without blanket, great coat, or *tente d'abri*. This is gradually increased to three marches per week of 30 km., or 18 miles, with blanket and partial kit, which by August is further increased to four marches per week of 40 km., or 25 miles, with marching order kit and equipment.

The training is in the first instance carried out entirely by companies, then by battalions, and in August by regiments, until the brigade manœuvres in September.

It may be noted that, whereas the French infantry of the line carry 60 lbs. in all, the chasseurs carry 80 lbs.

The routine for marching is exactly similar to that laid down in the regulations, except that the chasseurs march when acting alone 5 km., or 3.1 miles per hour, and consider 18 miles an average day's march.

In the Austrian army, also, a systematic course of training in marching is carried out yearly during the months immediately preceding the manœuvres in the autumn. The German army has also a similar system, and devotes especial care to the training of their men in "strategical" marching. It is, however, questionable whether any Continental army has devoted so much care and attention to the training of their men in a definite system of marching as the French have during the last ten years.

It is very certain that the isolated efforts of teams of men engaged in marching competitions can do no more towards the improvement of the average marching value of an army than do football matches towards improving the average physique of the nation. At best such competitions can only train a selected few to march under conditions impossible for general adoption, and still less possible for active service. We know only too well the abuses which inter-regimental contests, whether in shooting or in football, often lead to. We shall, believe me, gentlemen, do far more good by considering how to raise the average marching value of our various regiments and battalions, than by directing our attention to the thews and sinews of a small number of athletes supposed to represent the marching powers of our respective corps.

Summary.

My endeavour to-day has been :—

1. To draw attention to the importance of marching generally.
2. To show the strictures under which the marching capacity of our army now lies.
3. To show the importance of a carefully devised normal standard for marching.
4. To demonstrate the paramount importance of careful training in this particular duty under some definite scheme, arranged with regard to local circumstances.

I have not attempted in my paper, already too long, to enter into the question of weight to be carried, or to the best form of dress and equipment necessary. The Regulations supply us with this information; we have the materials given us, and we must be content to utilize them for the fashioning of our military machine.

Military dress and equipment, like military tactics in war, have no finality. Change as may our dress, conform to long-range fire and smokeless powder as may our system of tactics, the marching value of our army is an unchanging quantity; it is to the importance of this subject that I invite your anxious interest and study.

I hold it to be the bounden duty of each officer to do what lies in his power for the benefit of the army at large, and it is solely with this motive that I am to-day submitting to you the result of many years of practical experience, and of careful consideration and study of this particular subject.

I believe the British soldier to be the best fighting man in the world—to be capable of anything—and if he fail in marching power, it will be because he has been trained under a vicious system. “Men in the mass are much what a system makes them.” Take a thousand Englishmen haphazard out of the street, place them untrained, indifferently fed, and badly led, in face of an active enemy, and you will soon have a dangerous mob. Take the same mob and place them in opposite conditions, let them be taught to obey authority, be carefully trained, be adequately fed, have confidence in their officers, and “in due time you shall fly a bit of bunting in front of them, and bid them march, aye even into the jaws of death,” and they will do it!—yes, do it, as they have done it before!

APPENDIX A

*Itinerary of March of Force under General Lord Roberts, &c.,
Afghan Campaign, 1880.*

Column of 10,000 men of all arms.

Aug. 8.	Bala Hissar to Charasiab.....	8	
" 9.	Charasiab to Zahidabad	10	
" 10.	Zahidabad to Wazir Killa	19	
" 11.	Wazir Killa to Baraki Barak.....	8	
" 12.	Baraki Barak to Saidabad.....	18	
" 13.	Saidabad to Takia.....	8	
" 14.	Takia to Shargas	15	
" 15.	Shargas to Ghazni	14	
		—	100
" 16.	Ghazni to Yergatta	17	
" 17.	Yergatta to Chardah.....	16	
" 18.	Chardah to Karez-i-Obah.....	15	
" 19.	Karez-i-Obah to Makur	19	
" 20.	Makur to Punjak	19	
" 21.	Punjak to Gajon.....	16	
" 22.	Gajon to Baba Kazai.....	17	
" 23.	Baba Kazai to Kelat-i-Ghilzai.....	17	
		—	236
" 24.	Halt.....	—	
" 25.	Kelat-i-Ghilzai to Julduk.....	15	
" 26.	Julduk to Tirandez (Minar)	14½	
" 27.	Tirandez to Shahr-i-Safa.....	12	
	Cavalry reached Robat.		
" 28.	Shahr-i-Safa to Robat	22½	
" 29.	Halt.....	—	
" 30.	Robat to Momund	7	
" 31.	Momund to Kandahar	13	
		—	320

320 miles in 24 days, inclusive of 2 days' halt, 13·3 miles per diem,
or 14·5 miles for each day of marching.

APPENDIX B.

*Account and Itinerary of the Confederate Cavalry Raid, carried out by
Major-General J. E. B. Stuart, and styled "The Chambersburg
Raid," October 9—13, 1862.*

A force of Confederate cavalry, consisting of 1,800 men with six guns, under Major-General J. E. B. Stuart, left Darksville on the afternoon of the 9th October, 1862, and crossed the Potomac on the 10th to the west of the Federal army, reached Chambersburg on the same night, and thence marching in rear of the whole of the Federal army under General McClellan, cut his lines of communica-

tion and spread a general feeling of insecurity and panic throughout the Northern States. This intrepid General finally withdrew the whole of his command across the Potomac on the east of the Federal army, and reached Leesburg at 5 p.m. on the 12th, with the loss only of one man wounded and two missing, having covered a distance of 145 miles in 76 hours. This remarkable march included a feat almost unparalleled in war, for the force, leaving Chambersburg at 9 a.m. on the 11th, reached Emmittsburg at sunset, 31½ miles, and Hyattstown by daylight on the 12th, distant 33½ miles, making a total of 65 miles in 20 hours. "Throughout the whole of the night," writes Major McClellan, Adjutant-General to Major-General J. E. B. Stuart, "the head of his column was kept at a trot, and by daylight on the 12th the advance guard entered Hyattstown, which is 33½ miles from Emmittsburg. Within twenty hours Stuart had marched 65 miles, and had kept up his artillery. Horses for the guns and caissons there were in abundance, and, as fast as one team was broken down, the horses were turned out and others were substituted. Three or four times during the night did the drivers change their horses, and the march was made without delay or interruption." So little had horses or men suffered, that the cavalry of Stuart were again engaged with the enemy four days after the execution of this remarkable raid.

Force.—1,800 cavalry in three brigades, under Brigadier-General Wade Hampton, Colonel W. H. F. Lee, and Colonel W. E. Jones respectively. Four guns, under Major John Pelham.

Date.	Route.	No. of miles.
Oct. 9, 1862.	Darksville to McCoy's Ford, on the Potomac	17
	Bivouac for the night.	
" 10	McCoy's Ford to Chambersburg	38
	Halted for the night.	
" 11	Left Chambersburg 9 a.m., and reached Emmittsburg sunset	31½
	Short halt.	
" 11—12.	Left Emmittsburg soon after sunset, and marching all night reached Hyattstown at daylight, 12th	33½
" 12	Hyattstown to White's Ford, on the Potomac	15
	Engagement at White's Ford with Federal infantry.	
" "	White's Ford to Leesburg at 5 p.m.	10
Total		145

Thus a distance of 145 miles was accomplished in 76 hours, approximately; a portion of that distance, viz., Chambersburg to Hyattstown, 65 miles, being covered in 20 hours. The Federal cavalry were entirely used up in their efforts to overtake the Confederates, while General Stuart, on the other hand, with his same

troopers, was again engaged with the Federal army upon the 16th and following days.

The above data have been extracted from the "Campaigns of Stuart's Cavalry," by H. B. McClellan, and from the "Official Records," vol. xix, part ii, p. 20, *et seq.*

APPENDIX C.

The following itinerary is added to show the great powers and endurance of a single man and horse in covering enormous distances, in spite of the most unfavourable conditions of climate and roads:—

Ride of Lieutenant of Cossacks Peschkoff, Russian Army.

This officer started from Blagovestchensk, on the Amoor, not far from Vladivostock, upon the 7th November, 1889, and reached St. Petersburg on the 19th May, 1890, via Tomsk, Omsk, Perm, Kuran, Nijni Novgorod, and Moscow. He rode one and the same horse throughout the entire distance of 5,400 miles and reached his destination in 193 days, during the depth of a Siberian winter.

Average distance per diem (including 24 days of halt, when Lieutenant Peschkoff was ill), 28 miles.

Average rate per marching hour, 6 miles.

Maximum distance in a day, 56 miles.

Weight of man 9 st.
 „ saddle and kit.. 3 st. 12 lbs. } = 12 st. 3 lbs.

Horse was Cossack bred, and only 12 hands 3 in. in height.

The writer is indebted for the above complete details to an account given of this extraordinary performance in the "United States Cavalry Association Journal," of September, 1890.

APPENDIX D.

Table showing the Marches accomplished by Modern Armies.

Campaigns.	Number of marches.	Greatest march in one day.	Shortest march in one day.	Average length of march per diem.
		miles.	miles.	
Campaign of 1796.....	203	33·5	5·0	15·5
„ 1800.....	135	23·6	2·3	10·6
„ 1803.....	267	29·8	7·4	16·1
„ 1806.....	91	30·4	3·0	15·5
„ 1815.....	20	19·8	6·2	13·7
„ 1859.....	130	19·2	5·0	9·6
„ 1866.....	459	26·0	2·5	14·0

General average march per day, 13·57 miles.

The above table is taken from the "Conférence sur la Marche d'un Corps d'Armée," by Colonel Lewal, of the French Staff. The kilometres in which the original table was made out have been converted into English miles to facilitate reference.

APPENDIX E.

A few examples of forced marches :—

Forced March. Cavalry.

In 1877-78 a brigade of two regiments of Russian cavalry with a Cossack horse artillery battery marched from Gregoriopol to Odessa, 112 miles, in 3 days. Weather stated to have been boisterous, with drifting snow.

Forced March. Infantry.

In 1806 the French Guard was transported from Paris to Mainz in 5 days, and thence to Bamberg in 8 days: that is to say, a distance of 435 miles in 13 days, about 33 miles a day. This astonishing feat was performed by conveying half the men upon carts with the whole of the knapsacks, while the other half marched.

Again, in the Crown Prince's pursuit of MacMahon's force, 26th to 30th August, 1870, the actual marches averaged 15 to 20 miles a day. The troops were sometimes on the road from 4 A.M. to 8 P.M. In October, 1870, the 18th German Division marched 260 miles in 9 days, an average of nearly 18 miles a day.

Major-General KEITH FRASER, C.M.G.: I should like to say a few words on this subject with reference to cavalry. The whole question is such a large one that many books might be written upon it, and discussions might be endless, but there are only a few details which the lecturer mentioned that I should like to refer to. As to the general subject we must all feel that it is one of the greatest possible interest to the army. The Duke of Wellington told us that an army of 10,000 men that can march twenty miles a day has more effect upon a campaign than an army of twenty thousand men that can only march ten miles a day. The greatest importance in foreign armies is no doubt attached to their being able to march. With regard to cavalry, I think that English cavalry has shown fairly well in all campaigns during the present century. The celebrated march of Lord Lake, of seventy miles, in India, with cavalry and horse artillery, fighting a battle at the end of it, showed what can be done; and the same may be said of many marches that took place during the Indian mutiny, and on various other occasions in other parts of the world. The 3rd Dragoon Guards, in Abyssinia, marched to Magdala under the great difficulties which were described by the lecturer, and arrived there with very few casualties, indeed, I believe, without a single sore back. The men led their horses a great part of the way, which has always, I believe, been done by the English cavalry at times on the march, and is no new system at all.¹ With regard to smaller details, of which the lecturer spoke, it is stated in the 3rd volume of the Drill Book that the pace of the trot in marching should be eight miles an hour. Now, I have seen foreign cavalry a great deal, and I have come to the conclusion that eight miles an hour is much too fast to trot on a march. I think that a trot of six miles

¹ The 19th Hussars marched 1,500 miles on Syrian ponies in the Nile Campaign of 1881-83, and only lost twelve horses by disease or fatigue. On one occasion they went seventy hours without water, and on another fifty-six hours.—J. K. F.

an hour is the proper pace. That is the pace they adopt in Austria, and at that pace they can keep up for a great number of miles. It is what they call hounds-pace. I have frequently ridden great distances with them, trotting at a slow, steady pace. The men sit well down, and rise slightly in their stirrups, which, in my private opinion, is the right way to ride. They ride with the double rein. The lecturer speaks of leaning forward. They do not lean forward. They sit with the weight on the centre of the horse, and the result is there are few sore backs. The men ride about twenty-two stone; a great weight; but there are hardly any casualties. The actual pace of marching for cavalry in Austria, and in almost all countries, is five miles an hour. It is found that that cannot be well exceeded, except for forced marching. As to the normal rates of marching, which General de Gallifet has drawn up in France, and from which the lecturer has but slightly differed, I think you cannot lay down hard and fast rules, because so much must depend upon the nature of the roads, whether you have to pass over hills and what sort of country you are going through. It also depends upon what scouting is necessary, because if you have to send out flanking parties you must wait for them, and of course those are the horses that suffer the most. There are also various tables of pace laid down in the French books. There is nothing in our drill book, I admit, but the book is already long enough. Officers can read foreign books, and there are an enormous number on the subject of marching, laying down different rates for forced, rapid, and ordinary marches, which anybody can study. It would be presumption in me to say anything about infantry marching if I had not been a great deal with foreign armies, seeing them both on service and in manœuvres; and having had that experience I must say that marching abroad is studied a great deal more than it is here. There the men carry their packs. I have been accustomed in Austria to see troops marching from Vienna to Brück, a distance of thirty miles, in the months of July or August, carrying packs weighing about 47 lbs.; and I have hardly ever seen a straggler. They do it in a day. At one time they used to do it in two days, but now they do it in a day. He would be a bold man who would take one of our home regiments, the men of which are not drawn from the same agricultural population as the Austrian and Hungarian regiments, and attempt to march from Dublin to the Curragh in a day in hot weather even without packs. I think the lecturer has been rather hard upon Mr. Arnold-Forster for what he has said in his letters to the "Times," because we know that in the Peninsular War the Duke of Wellington frequently found fault with the English infantry not having been practised sufficiently in marching, and he has also said that the French marched much better. I think this has always been our failing, although no doubt the marches which have been mentioned have been brilliant exceptions. I think it would be a good thing if English infantry, when it changes its quarters, could march by road. When I had the honour to command in Ireland, I had to do with some of the finest regiments (without making invidious distinctions) in the Service. Those regiments were not moved about by road. One regiment—a celebrated regiment now at Aldershot, and whose commanding officer has always shown the greatest possible interest in soldiering, and in having his regiment in the highest state of efficiency—was ordered from the Curragh to Fermoy, which is on the railway and also on the road. The regiment went to Newbridge, from Newbridge to Dublin, from Dublin to Kingstown, from Kingstown round to Queenstown in the "Assistance," then from Queenstown to Mallow, and from Mallow to Fermoy, except the cyclists of the regiment, who went by road, and they got there in a very short time. The others were three nights at sea in the "Assistance," not a very popular ship, and I think the men would have very much preferred marching.

Colonel RICHARDSON: There is only one point, upon which the lecturer has laid considerable stress, which I feel a little inclined to take exception to. He holds that the marching power of a man is an unalterable quantity. He means that men in all ages, if I understand him rightly, have marched on their feet carrying more or less weight, and that this cannot be changed. But he did not give us enough information in the lecture to form any opinion as to how much weight carried handicaps marching. I think weight carried makes a very great deal of difference in marching, and it is a question whether, though "Vetus," in the "Times," said we

followed other nations, we could not in that line take a fresh departure altogether and lead. The question is whether loading a man's body with weight is the best way of carrying the weight along. We still go on as porters, in fact, instead of taking a lesson from cyclists, and other machinists who now carry weight mechanically far better than by loading it on a man's back. I believe there is a great need for the carrying of more ammunition, and what we have to consider is, whether a man applying half the power that he now does in carrying weight could not be made to get along the road quicker, conveying a greater weight, and yet come up to the fastest rate of marching that has been given by the lecturer. Instead of doing 2½ miles an hour, could not the British army be got by science to march with the same ease at four miles an hour, or thereabouts? I think it might be done. I do not think there has been much done in the line of trying to carry weight scientifically. We still load it up upon the soldier's person, as armies of old did. An infantry soldier marching exhibits a very unscientific application of carrying power. The English people are, of all nations, the worst beasts of burden. The English soldier has good endurance and excellent physique and fighting qualities, but he cannot carry weight except for short distances. He can carry enormous weights for short distances, but not for long. In this direction, I believe, science could come in to advance the marching power of the British army.

Lieutenant-General GOODENOUGH, C.B.: I did not rise before, because I was in hopes that some younger men, who are responsible for the carrying out of the training in the manner in which the lecturer has suggested, would have spoken and assisted us with their opinions. The lecturer has alluded to the absence of regulations as regards the cavalry rising in their stirrups; may I presume that he referred to our regulations, because, as to foreign regulations, I am authorized by my neighbour, the French Military Attaché, who has been good enough to come here to-day, to say that in the French regulations the rules as to rising in the stirrups are laid down.

Colonel HUTTON: I was speaking with reference to our regulations.

Lieutenant-General GOODENOUGH: There is one thing in my experience as a General Officer that I should like to remark upon, which is this, that I am persuaded that Commanding Officers very often, having a large number of very young men in their battalions who are unable to perform long marches, assume the attitude of giving it up in despair and of doing nothing. If they are called upon to march or to put in an appearance somewhere at a distance, they talk to themselves in this kind of way: "Oh, I could not appear with one-third or half a regiment. We should make a very bad show, and so I am not going at all." I do not think from my experience that that is the proper way of regarding the subject. The army is a school of training, and officers would do well to accept the situation as they find it, that is to say, if the men are young, to regard the battalion as a school of training. If there are those who are too young to march—I think the lecturer told us that the French begin their marching training not with first year's men, but with second and third years' men (Colonel Hutton assented)—then the same principle should apply here. A General Commanding certainly would not expect to see the whole battalion present at a long route march. He would expect to find the younger men kept back for gradual training, and only the men who were fit and proper brought forward for the longer marches. Instead of the battalions going out in the perfunctory manner to which the lecturer has alluded, they might perfectly well go out in their different classes and categories, or by companies or smaller bodies in different directions, and perform marches of various lengths. That would be the practical way, in my humble opinion, of dealing with the subject.

Mr. CHARLES WILLIAMS: May I venture, as a visitor, to say a word about a march I saw in Bulgaria some eight years ago? I was the only Englishman present at the campaign, and the march struck me as one of the most remarkable that has ever been performed. A battalion of Bulgarian militia left Rustchuk for Sofia on a sudden order, as the Servians had invaded Bulgaria. The distance, as nearly as I can scale it on the Russian Staff Map, is 290 versts, or as nearly as possible 180 miles. The first part of the road is very muddy, so far as it lies in the valley of the Danube. The next part is over the foot hills of the Balkans,

which is pretty dry marching, mostly over sward with a few strips of roads. From Plevna onward the road is very good indeed, except over the Orchanio Pass, and the last 20 miles into Sofia is as good a road as anyone could wish. The men covered the distance in five and a half days. They never had a good sleep, except at Plevna one night for about six hours. They had frequent halts, not determined by distance, but by the villages along the road, at each of which water and a kind of porridge was ready for them. They carried knapsacks, but they were nearly empty. They carried haversacks with some pork and biscuits in them, and most of the men had pushteens, not so elaborate as the Afghan pushteens, but common short sheepskin coats. It was in the beginning of November, and the weather varied very much; it was very moist the first part; sleety and slush the second part; and the last part was a hard frost. The foot gear of the men seemed to answer admirably through all these variations. Each man had a pair of long boots coming up over his knees, made of the Black Sea porpoise skin, but instead of wearing them they slung them at their belts, and each man had felt, something like putties, only covering the feet, strips of felt, three plies of felt, giving entire play to the muscles, and at the same time keeping out the slush and wet, so that the inner layer of felt was always dry, giving full play to the muscles of the feet. It seemed to me that the men slung along the road with great ease and, to use an Irish expression, "iligance." They did not march in good military form: the men straggled a good bit; there were no distances between the companies, and there were no advanced or flanking parties. The merit of the march is the extreme rapidity with which they got over the ground, and after one day's rest in Sofia they started off for the front. They arrived too late for the fighting, but Prince Alexander mentioned them specially in his General Orders for the rapidity with which they got over the ground.¹ I thought it was worth while to mention this thing, because what struck me first about it was the men throwing off their foot gear and marching in the felt bandages, which are common all over the country in winter time.

Colonel BATLIS: I should like to make a few observations on this most interesting subject, interesting certainly to all the branches of the army, and I think I may say particularly so to the force on which the country relies in the absence of the regulars, that is the Volunteer army. I think the lecturer has made a very pertinent observation when he says that you must not look at what a particular company may do against another company, but you must look to the average. In this important matter the question is, what will be the average marching of the army. I think I may mention to you that my old regiment, the 18th Middlesex Rifle Volunteers, a few weeks ago, having its headquarters at Paddington, did a marching competition which created very much excitement and surprise; the distance was 26½ miles, which the winning team accomplished in 6 hours and 45 minutes. The 2nd and 3rd teams within 15 minutes of that time, while the 4th and 5th were only a few minutes later and tied. Eleven out of the 12 companies sent representative teams of 8 men each, with a sergeant to each team as a leader. Each man carried a weight of about 40 lbs. including his rifle, 40 rounds of ball ammunition, great coat, packed valise, haversack, and water bottle. I was very much struck with the result, and certainly it was a great thing to do; but what is the use of merely a dozen or a hundred men in a regiment marching like that? You want the regiment generally to march, and, as it has been carefully explained by the lecturer, that must be done by continual careful drill and preparation. I remember that it was said to me by Mr. Justice Chitty, who was the umpire of the University racing crews, that the men who suffered were not the University crews in the races, but the scratch crews; when they got together scratch crews and they rushed at it all at once, they suffered very much indeed, and many men came to grief by it. There-

¹ I should have added that another battalion, similarly "shod," marched 96 versts, or 60 miles, in 30 hours, and arrived just in time to go into action at once, turning the scale, which had hitherto inclined towards the Servians, by the use of the bayonet at the battle of Slivnitsa.—C. W.

fore you have laid down, what we must all agree with, that to effect good marching throughout the army you must have general training in the best possible mode, and I think the mode which the lecturer has suggested is one which may commend itself to many, and I hope many may take advantage of his advice upon it. I have made these remarks with regard to careful preparation and training generally, but I wish to make one observation with reference to details which the lecturer has not mentioned. A distinguished officer of the 45th Regiment, Colonel Preston, told me of the great advantage of teaching his men to sing on the march. He said a singing regiment would always march further than another regiment. Therefore I think that singing ought to be encouraged as much as possible. Regiments have their bands, but singing keeps up the men's spirits and makes them think less of fatigue, and less of themselves, and more of the object in view. This is specially so where you have two regiments marching one against the other, starting at the same time: the singing regiment will overtake the other because they have good spirits. There is one thing about which I wish to ask a question. I understood when I was at school, reading Xenophon's account of the retreat of the ten thousand Greeks,¹ that they accomplished about 13 miles a day, and I was told that the marching in that retreat had not been exceeded by the average marching even in the present day. I think, Sir, you say that the distance per day should be 11 miles, and the pace $2\frac{1}{2}$ miles an hour; but supposing you wished to keep it up for a great length of time, not merely a spurt, what would be the averages for ordinary continued marching?

Brigade-Surgeon STAPLES: I find great difficulty in asking to say a few words on this subject, because I do not look at it from the point of view of a purely military officer, but chiefly from that of an army Surgeon. I take it the discussion has run to some extent on slightly wrong lines here to-day, and officers have spoken as if marching consisted of nothing else but military pedestrianism, and the walking and trotting of horses, &c. I have done—I won't say anything heroic, but—a fair amount of marching with our army, especially in India, and it appears to me that marching consists of a great deal more than stepping out, and that there are several things that are necessarily part of it, such as tent pitching, the loading of baggage animals, men making themselves handy in bivouac, and proper halting, and so on. And my experience goes to show the absolute necessity of the two chief points that Colonel Hutton insists upon, viz., systematic training, and the necessity for a standard. Distances are not now laid down, and officers, who are always very zealous in getting forward in campaigns, will sometimes, perhaps, press a little heavily on the men, and increase the percentage per 100 miles that falls into the hands of the military Surgeons. I particularly want, however, to examine Colonel Hutton's lecture from the point of view of long distance marching, and we Surgeons are very good spectators, because we are mounted, and can see very well, both metaphorically and literally, where the shoe pinches. We look at it, primarily, from the point of view that marching is very hard labour, being in this regard governed by three main conditions, viz., the weight to be carried, the pace, and the distance, and here again I find myself absolutely concurring with Colonel Hutton in what he has said as to the necessity for a standard. Referring to those interesting marches he has recounted, viz., Sir Donald Stewart's own march from Kandahar to Kabul, Lord Roberts' march from Kabul to Kandahar, and the march of the 18th across the Bayuda desert, I wish to point out, with regard to the important bearing of weight, that on none of these marches was the knapsack carried. The reputation of our army in India is probably above that of any other army, either in ancient or modern times, as regards endurance, and only that I do not wish to detain you here, I could recite marches in that country that would seem almost incredible. I may, however, mention one: I allude to the 43rd marching in the Mutiny from Bangalore to Kalpi, 1,300 miles,² equal to from here to the Black

¹ The Greeks marched 1,155 parasangs in 215 days during their retreat.—T. H. B.

² "Without metalled roads, across many unbridged rivers, with a long ammunition train of country carts, which had to be dragged up the numerous ghats that separate the Deccan from the plain of Bhundelcund, and this exertion had to be made in the hottest season of the year."—"History of the 43rd L.I."

Sea, and I may add, that that was only to begin the campaign, in which some of the companies afterwards covered an additional 2,000 miles. If you think of that march for a moment, you may, it appears to me, make yourselves tolerably easy about your detractors in the Press. But it is not necessary, perhaps, to refer at this meeting to the events of the Mutiny. But no doubt officers are here also who were in the Crimea, and they will remember the march to the Alma, and that the pack was not carried in that memorable struggle, nor has it ever been carried, as far as I know, where you have made great strategical marches with your men; therefore, I think it would be necessarily a good reform if the pack were left behind, and I hope I have additional good reasons for what I say. It is the custom in the Medical Department of the army to send Medical Commissioners to foreign armies during war, and to refresh my memory I looked up the campaign of the Germans, in 1866, against Austria, and I find it mentioned, that in their desperate struggles to get through the defiles from Lower Silesia into the plain of Bohemia, the pack was thrown aside and placed in country carts. Many of the regiments did not see it again for thirteen days, and it is said that they were all the better for it, and it is further recorded, on the authority of an officer of high rank,¹ that these men were jollier and in better health than the men who, through want of vehicles, carried their packs. I may say that the rule in the German army is that the pack is laid aside when great marching efforts have to be made by the men, and also that it is taken off when going into action. Colonel Hutton, I am afraid, will rule me out of order on this point by remarking that he has not dealt with it in his paper. I do not, of course, wish to say there was any necessity for him to do so, but yet it is an important one, and one that ought to receive great attention from military men.² There is another point about the marching of the German army. No doubt they have marched very well, and, in some of their marches, from Sedan to Paris, for example, they have done 20 to 21 miles a day, equal to what our men did in the Bayuda Desert. Their average, or standard march, is 14 miles, and I ought not to omit to say that they pay great attention to the men's feet with regard to boots; high heels and narrow toes are absolutely eschewed, and they wear no stockings. They have a special way of treating the feet, which I won't go into, but the stockings are put on after the march is over, so that I might improve upon the Colonel's epigram, that the secret of war lies in the legs, and say it is in the feet. But no doubt the "leg," in his view, includes the feet. Colonel Hutton has laid down 2½ miles for the standard march, and I think that can be proved to be absolutely correct. I have often timed the men on the Grand Trunk road in India—a good road—and the average marching of companies was 17 minutes to the mile, or 51 minutes to the hour, allowing 9 minutes for a halt. That was, of course, without the valise equipment, as you now call the knapsack, and without Service ammunition; but if you had the pack and ammunition it would bring the time up to 20 minutes for the mile, and that would be 50 minutes for 2½ miles, and 10 minutes halt within the hour. That is not laid down in any of the books, so that I think there is a great necessity that it should be so, to form a regulation or authoritative standard. I presume Colonel Hutton assumes a fairly good road.

Colonel HUTTON: Favourable conditions.

Brigade-Surgeon STAPLES: As to your proposed distance of 13 miles, I suppose you mean that for a battalion or infantry brigade without heavy guns or ammunition columns, and the light baggage either on the "hoof," as you may say, or in commissariat wagons?

Colonel HUTTON: Certainly.

Brigade-Surgeon STAPLES: Then that is your standard?

Colonel HUTTON: That is the standard.

Brigade-Surgeon STAPLES: Under those circumstances I think it is a very good

¹ *Vide* Parkes' "Practical Hygiene."

² I inadvertently, with regard to this point, omitted to make reference to our native troops in India. They have gained a deserved reputation for marching, and it is noteworthy that they do not carry, and, I believe, I am correct in saying, they never have carried, packs.—F. L. S.

one; but if you have guns to be dragged up hill, and wheeled country carriages, what should be allowed for the march of a division or army corps? I think you would not do 13, and probably 12, or even 10, will be nearer the average, and, perhaps, for such contingencies, it would be a good thing also to have a standard. I will conclude by mentioning one thing I read the other day. We hear a great deal of the struggle that is to take place between the army of this country and the army of Russia for the Helmund. I suppose not many of us will see that race; but I thought I would mention, in reference to it and our Afghanistan marches, that the Russians, on the road to Khiva, did exactly 10 miles a day. I think we need not be apprehensive that our army will not equal that. I thought these few remarks might add a little additional interest to the lecture, which has been so ably drawn up and discussed from the purely military point of view.

Lieutenant-General Sir CHARLES C. FRASER, U.C., K.C.B.: If I might be permitted to say a word or two on the lecture, it appears to me, that though the lecturer finds fault with Mr. Arnold-Forster, Mr. Arnold-Forster had certain grounds, which soldiers think were very strong, for his remarks. Those who were at the manœuvres in Hampshire must have all applauded highly the spirit of the officers, the non-commissioned officers and private soldiers, and have been delighted with the practical training given to the troops; but those who looked on saw that they were but boys, and their training must be most difficult and discouraging. For the old rules of marching, as laid down, to be brought into play now, is, indeed, a severe task. I commanded the Curragh Camp for four years, and saw the boys that came and went. Let us go back to the old rules. If I might read a word from the orders of the Commander of the Light Division in the Peninsula: "Any man who, for the sake of avoiding water or other bad places, or for any other reason, presumes to step to one side, or quit his proper place in the ranks, must be confined." Those small things are discipline, are they not? which we need very much. If I might say, at the funeral of that Officer Commanding the Light Division, General Crauford, Sir Charles Yorke told the story, that as the men marched from the funeral, so strictly trained were they, that when they came upon some water, they rallied together and pushed through it with a kind of murmuring cheer. That shows the discipline that we want, and I do hope some very strict rules will be laid down with regard to the march both for cavalry and infantry as proposed by the lecturer.

Lieut.-Colonel W. T. DOONER: With reference to what has just been said as to whether the men wore packs in Abyssinia, a General Officer under whom I had the honour of serving commanded his battalion in that expedition, and I remember he was mentioned in despatches by Lord Napier as having won his admiration by the splendid example he had set to his men, and part of that example, I always understood, was that he had marched at the head of his regiment in marching order. This, therefore, may throw some light on the question which has been raised as to whether the men wore their packs in that expedition. There are one or two little points I would like to ask the lecturer. He has quoted from "Vetus" that marching is mainly a question of boots properly fitted, and has given us the example of the French marching so well, doing 25 miles a day; could he kindly tell us what sort of boot they wear when marching? I do not know if many of you have thought about the question of our ammunition boot, but I have some little doubt whether it is the very best we can have, and if the French are able to get 25 miles a day out of their men four days a week, I should think it would be a good thing to investigate closely the exact sort of boots they wear. The gentleman on my left (Mr. Williams) who spoke about Bulgaria, said that the men there marched in putties. That is, I think, a new thing to most of us; and it is difficult to understand how they managed to get along so exceedingly well, because little bits of stone or flint or anything might get in between the puttie and the foot, and would probably cause much discomfort and inconvenience. There is one other matter I would like to refer to about our regulations for marching order. It is directed that 20 per cent. of the men are to carry the spade. The present spade is very inconvenient, and incommodes the men considerably when marching; but it does even more than that, as it spoils their trousers, which is a serious matter to them. I think if some really good spade, some small tool, could be invented, that the men

could carry without inconvenience, it would be a great improvement. I, of course, am not qualified to give an opinion about mounted men quitting the stirrups when on the march, but I would like to mention that I remember well, in the riding school, the riding master told the class I was in that the stirrups were not to prevent our falling off, they were only for the purpose of carrying the weight of our feet and legs, from the knee downwards. Therefore, if that riding master was correct, I cannot see quite why we should not, in order to rest the muscles, &c., take the feet out of the stirrups if we like.

General KEITH FRASER: I might explain about the putties that Mr. Williams has referred to. I was myself a witness of a great deal of the marching at the latter end of the campaign, and I must confess what excellent things they were. It is the natural dress of the country. The puttie is wound entirely round and round the foot several times, and then up the leg, so that nothing can possibly get in. It is the most perfect thing I ever saw for marching in. It has another advantage. The weather was terribly cold, the thermometer being about zero, and great numbers of the men were frost-bitten in the hands, but no man was frost-bitten in his feet.

The CHAIRMAN (General Sir Donald Stewart): I think all military men must admit that Colonel Hutton has hit a blot in our system of training. It is not a question of opinion, it is a question of fact, and I am sure every officer who has had to deal with troops in the field must have seen the mischief of having soft and untrained troops placed under his command. The difference between what I should call a hardened soldier and a soft one is very great. One man struggles along the line of march, comes in weary, is disinclined to exert himself, and is certainly unfit to go on fatigue duty of any kind. Such a man requires time and training to fit him for field work. Our army should always be fit to take the field; no soldier should be regarded as a trained soldier unless he is fit for instant service. Dr. Staples very truly said that it is not usual for British soldiers to carry great weights in India. What is the reason of that? Not that our soldier in India is unable to carry his pack, but because he is such a valuable fighting machine that we cannot afford to let him do anything that injures his fighting powers. But, in point of fact, they generally carry something in India. During the Afghan war we managed to carry most of their kits for them, with the very imperfect transport at our disposal. We did our very best to keep our men fit, but, besides their ammunition, they always had to carry their great-coats, and usually cooked rations in their haversacks, as well as their water-bottles, and not unfrequently they had to drag heavy guns through miles of sand. Though the troops in India are always in fair training, the work of the troops sent into Afghanistan was at first very trying, but few broke down, and in a very short time they were fit for anything. When the troops under General Roberts commenced the march from Kabul to Kandahar they were all as fit as men could be. Considering the season, the marching was excellent. But it was not the marching alone that tried the stamina of the men, it was the work they had to do after they got into camp. Before they had time to rest, men and animals had to scour the country round for food and forage. The column which marched from Kandahar to Kabul under my command covered the distance in very creditable time, although there was no cause for hurry. It was very trying for men and animals, but all were in high training, and they wanted for nothing except food and forage, which were both scarce, and were collected with immense labour. The fatigue work imposed upon the force could only have been performed by men in a high state of training and good physique. I certainly never heard of such a march as that referred to by Mr. Williams. Thirty-three miles a day for five and a-half consecutive days by infantry is a splendid feat, and recalls the march of the Guide Corps during the Mutiny, which marched from Hoti Murdan, near Peshawur, to Delhi, 680 miles, in twenty-two days, or at the rate of 26 miles a day, cavalry and infantry together. The infantry had to foot it the whole way. Of course the road was splendid. They had no encumbrances, and they were assisted with a few "Eccas" (a sort of pony gig, carrying two men) and riding camels—a wonderful march under an Indian June sun. Many other marches could be mentioned to show what can be done by trained men and horses. I know a native cavalry regiment that went 117 miles in two days. During the Sutlej campaign, the regi-

ment of which I was Adjutant marched 51 miles in twenty-four hours, with only one straggler. Colonel Hutton has shown us what ought to be done and what can be done, and I hope that our officers will be permitted and enjoined to take the matter of this address to heart, and see that the marching powers of the men serving with the colours are developed to the very utmost. Indeed, no man should be considered a trained soldier who is not capable of performing at least what the soldiers of Continental armies are required to do during their annual manœuvres. Whether our soldiers should or should not carry packs in field service is quite beside the question; that they should be carefully trained to march with a certain amount of kit, no military man can deny, and it is only by such training that they can at all times be fit to take the field. Indeed, no system of training can, in my judgment, be quite satisfactory that does not meet this condition. In conclusion, I hope I may be permitted to express to Colonel Hutton the thanks of this meeting for the clear, lucid, and interesting statement which he has brought before us this afternoon upon a subject which so nearly affects the efficiency of our army.

Colonel HUTTON (in reply): The remarks made by the different speakers hardly necessitate much reply. With reference to what the Inspector-General of Cavalry said, as to the pace of the trot, I venture to think that his remarks show some uncertainty existing in our cavalry service as to the best pace for the trot, which seems to me to be an additional reason for having it laid down clearly what the pace should be for "strategical" marching in contradistinction to "tactical" or manœuvre marching. With regard to the weight to be carried, referred to by another speaker, it does not enter into the scope of my paper to question the existing regulations, either with reference to the weight to be carried by the soldier in marching order generally, or the quality of his boots or equipment. Such points open a very large question, and one that it is impossible to deal with in a short paper. With reference to General Goodenough's remarks on the French system of training, perhaps I did not make myself sufficiently clear. The recruits and the second and third year men commence their training in "strategical" marching, so far as I was able to understand, concurrently. The principle, which I wanted to make clear, is that their training was *systematic* and *gradual*, and that it was, in the first instance, commenced by companies under the company commander; subsequently, by battalions under battalion commanders; finally, by regiments and brigades under their respective leaders. This system involves the great principle of command, viz., the combining of instruction with the leading of men. I do feel most strongly that the training of men must be vested entirely in the hands of those who have to lead them. The responsibility of instruction and the responsibility of command are inseparable—the one and the other are identical. The officer who leads must be he who instructs, whether he be the section leader, the Captain, the Colonel, or the General. The officer who cannot instruct is in my humble judgment unable to lead. Colonel Baylis mentioned the rate of march. The rate which I have ventured to suggest to you as the normal scale or standard for infantry marching is 13 miles a day. This rate is the accepted standard amongst almost all Continental Powers. It certainly tallies with the schedule as shown in Appendix B. General Lewal, the compiler, shows in this most elaborate table the length of all the important marches in the principal campaigns of Europe from 1796 to 1866, the average of which is shown to be 13·57 miles per marching day. In reply to Dr. Staples, I would remark that this distance of 13 miles per marching day must naturally be varied, according to the local circumstances, conditions of climate, &c. I might add also, in reply to the same officer, that the French do not wear socks. Socks are not an article of issue in the French army. In the case of the Chasseurs Alpins a special preparation is issued to the men to prepare their feet, and this system is, I believe, universal in the French service. The French infantry boot is not so good as the English, except, perhaps, that of the Chasseurs Alpins. The boot is very much like our own, a highlow, but the material is certainly no better, perhaps not so good. One point of excellence about the boot is that the heel of the boot, instead of being sewn at the back, is blocked, and there is consequently no seam at the back of the heel at all. The heel of the boot is sewn on either side of the foot, the heel itself being blocked. All of us who have had experience in marching troops, especially young soldiers in new ammunition boots,

know the difficulty we always have with sore heels, so that this point seems at least worth a trial. With reference to Sir Charles Fraser's remarks about young soldiers, I do not think it material to refer to the youth of some of our battalions. It is not for officers now serving to question the system under which the army exists at the present moment. It certainly does not enter into the scope of this present paper. Of course I am aware that Mr. Arnold-Forster's letters, from which I have quoted, were written with a view to proving that the army is in a demoralized state, and that the short service system is a failure. It is not my province to question the regulations of the Service. Good or bad, it is our duty to accept them. I am, however, most strongly of opinion that, if the men are young it is more than ever our business to teach them their work systematically, and to train them as we would young horses. If they are young they want more than ordinary care, a special and most elaborate scale of training; and it is to Dr. Staples and officers of the medical department that we must refer for the amount of individual physical exertion which we can expect from each of our young soldiers, and adapt our scale of training accordingly. It is intolerable for any commanding officer to argue and say that his men are too young, and therefore cannot be trained in marching. On the contrary, if they are young they will require all the more care, and all the more systematic care in training to bring them to any sort of perfection. It is a mere question of modifying the conditions, by taking weights from their backs or regulating the length of march according to the capabilities and capacities of the young soldier. With reference to the scale I have ventured to suggest for your consideration, I beg you to recollect that it is intended to be applicable, not only to the existing young battalions which we see at Aldershot and elsewhere, but also to the Militia who are all matured men, and to the Volunteer battalions, many thousands of whom we have seen at Aldershot in the last six or seven years, magnificent battalions of matured men. It is for these latter, no less than for the regular infantry, that I have endeavoured to show in the strongest possible light the importance of marching instruction and training. So far as regards the Volunteer Force there is one point which has been raised but which I did not touch upon in my paper, most important as it is, and one which in many corps I think has been much lost sight of, that is the question of *boots*. The Volunteer battalions come to Aldershot, many of them in boots of the worst possible kind for anything in the shape of marching; in fact it would be and it is absolutely impossible for the average Volunteer battalions that come to Aldershot to march 20 miles. I submit that the question of boots for the Volunteer Force is just as important as the question of equipment and great coats. How the difficulty is to be got over, it is for the enterprising Commanding Officers of Volunteers, many of whom are here to-night, to suggest. In conclusion, I wish it to be clearly understood that the normal scales for marching which I have ventured to submit to you are merely practical suggestions for Commanding Officers and others to consider, and to adapt to the circumstances in which their regiments or corps may be placed.