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CAVALRY REORGANIZATION.

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A NUMBER of talented officers have studied the reorganization of the cavalry so as to increase its efficiency without materially increasing its strength. The various propositions which have come under the observation of the writer are not so very far apart but that their advocates may be brought together in a compromise without sacrifice of essential principles or efficiency. It is assumed that in any organization of the American cavalry its strength will be based upon the probable number of troops available of other arms for the first line in any war of magnitude. The present and the future organization of the cavalry is not assumed to be proportionate to the other arms of the regular army, or as provided for a corps or army under the Field Service Regulations, but to the strength of the other arms, both of the regulars and National Guard, which would be immediately called into service upon the outbreak of war. The National Guard has recently been made a part of the army for service beyond the limits of the United States, practically on the same footing as volunteers; as it is com-

posed almost wholly of infantry, the necessity for keeping a proportionately large contingent of regular cavalry needs no argument.

In studying the question of cavalry reorganization, the writer was much surprised to find that the organization which commends itself most to his ideas is that which was prescribed for the British army as a result of their experience in Flanders—late 1600 and early 1700—a regiment of nine troops, formed into three squadrons of three troops each. Amongst the British officers who were students of their profession during the campaigns in Flanders, was Humphrey Bland, Esq., lieutenant colonel of the King's Own Regiment of Horse, whose "Treatise of Military Discipline" went through many editions, and contained the essence of all the traditions, drills and ceremonies which were the basis of similar books of instruction from the early 1700's down to very recent times. Even the radical changes in armies and material have not served to banish many of the quaint ceremonies and customs then prescribed. Since our Continentals of the Revolution were governed, as the armies of the United States have since been, by the British Articles of War, it is not strange that many of our ceremonies and customs are still tinged with the coloring of the army that came back to England from its campaigns in the low countries. The preface to General Bland's book will well bear repetition:

"From the great reputation of the British arms, men would be apt to imagine that several treatises of the art of war were to be met with in our language; but when they come to enquire, they will be strangely surprised to find nothing of this kind of our native growth that I know of, except what has been left by the Earl of Orrery, who wrote fifty years ago. And though his writings might have been very instructive at that time, yet so many improvements have been since made (several instances of which I could easily produce, were there an occasion) that they can be but of very little use, at present, to young officers, for whose sake chiefly this book is published.

"As the nation has abounded with officers, whose services

leave no doubt of their abilities to perform a work of this nature, it must be supposed that their indolence, or their imagining no want of it, was the reason that nothing of this kind has hitherto appeared. But considering how few old officers remain, and that they are diminishing every day, I hope I shall not be censured for having ventured to commit to writing the little knowledge I have acquired in military matters, for the instruction of those who are yet to learn, who, in a little time longer, if they have no opportunity of going abroad and wanting the example of old officers to guide them, may not think it useless to have recourse to this account of their duty, however imperfect it may be.

"I am well aware how little thanks some people may think I deserve for this attempt, and am very sensible that standing armies, and consequently the modeling of them, are little relished in time of peace in this kingdom, and, I must own, as much a soldier as I am, not to be desired, if we can preserve our King, our trade, (and, I had almost said, our civil government) without them. But such is the state of the world at present, that I doubt it will be in vain to flatter ourselves with the hopes of opposing our militia to troops who have the advantage of discipline on their side. Neither are our treaties nor alliances (as appears by proofs too recent) sufficient without the *ratio ultima*. And, I believe, it is a true observation, that first or last, force has been the conclusive argument of most treaties, and those have been found the best which have been supported by the best troops.

"I have, throughout my book, taken every occasion to inculcate the necessity of legal military subordination. It has been the practice of all nations, ancient and modern, even where the people have been blessed with the highest liberty, never to admit of a military independence upon their military superiors. I look upon it as the band which ties the whole together, and without it all other rules and forms to be of no use. Perhaps it is the great distinction between regular troops and militia, and the cause why the former have always had the advantage over the latter.

"I know it will be objected that the better our troops are

the more dangerous they may be, and I confess the objection to be of so great weight that it fits not me to enter into the question. All that I am pleading for, is, that as long as it shall be thought necessary to keep up a body of regular troops, those troops may be put upon such a foot as may answer the end, and the sole end, which is expected from them by the public. Give me leave to add, to the honor of the officers, that more instances than one might be given, when, instead of being those servile tools (which is so much apprehended) of bringing their country into slavery, they have behaved themselves with a zeal for its liberty, equal, I think, with the best Englishman, if exposing themselves and families to the hazard of starving, may be allowed to be an instance of it."

Bland's treatise covers both regulations and drills for infantry and cavalry. It is the first book in which the advantages to cavalry, of being prepared to fight on foot, are fully set forth as "instructions for the evolutions of cavalry armed with carbine, pistol and sword," and in which the "words of command for dismounting, linking the horses and forming to exercise on foot" are given in detail.

It is not understood just why this English cavalry experience, at the very beginning of regular armies in that country, should have been neglected, only to be revived after two centuries, but it is not unlikely that Oriental service had much to do with the exaltation of the lance and saber over the firearm. Through a long course of years following Marlborough's campaigns, the dragoon who carried a carbine was not as popular as the lancer and hussar. So intent were those who believed the cavalry spirit to be dependent upon fighting on horseback that European and British cavalry reform was delayed to a very recent date. To unprejudiced military men, more intent upon victory than the pomp and glitter of war, the light cavalry, armed only with pistol and saber or lance, presented always a pitiable defect, in that they were helpless in the presence of a small body of well posted infantry, armed with muskets.

For many years after the Civil War the lessons of the campaigns from 1861 to 1865 were much neglected by the military nations of Europe, and by England. It is probable that the South African War and a single book, General Henderson's work on Stonewall Jackson and his campaigns, had more influence in turning the British mind to a study of the American Civil War than all else that had happened in a quarter of a century.

It did not take the practical American many months of actual service in the Civil War before he recognized that the equipment of our cavalry was not adapted to the service the army was then having in the wooded sections of the South. At the very outset of the Civil War the mounted regiments of the army were consolidated under one title as "cavalry," they having been previous to that time designated as "dragoons," "mounted riflemen" and "cavalry." Although the designations of the regiments were changed at that time, their armament was still continued, some of them being light cavalry armed with pistols and sabers only. The need for a firearm and a change of organization was so generally recognized that on July 17, 1862, all the regiments were organized with twelve companies, armed with carbine, pistol and saber. Having been accustomed to a squadron of two troops, that formation of the regiments continued for a long period.

It was not until the war with Spain that our infantry regiments secured the twelve company organization, although it had been recommended by all the generals commanding the army from Grant to Miles. It is not intended here to digress from the object of this article, to discuss the effect of the modern rifle, with its long range and flat trajectory, on possible changes in battle formations of regiments and higher units of infantry and cavalry, but to take up the question of a reorganization of the cavalry on the basis of existing conditions and the possible needs of the immediate future. It is recognized that if future experience dictates battle operations in two lines, instead of three, there will be no difficulty with the organization as it now exists or as proposed.

Nearly twenty years ago the writer became deeply impressed with the tactical value of a three-troop organization

and obtained authority to experiment with a squadron of the Sixth Cavalry, so organized. Any officer who has commanded a four troop squadron at drill will recall how all successive formations were retarded by the fourth troop. The delay seemed not to depend upon the character or energy of the troop commander, but upon the actual time required to come into line to either flank. No amount of practice seemed to eliminate the difficulty, even though the rear troop proceeded to its position at an increased gait.

The cavalry considered itself fortunate in having the organization which all our best authorities had long contended should be given to the infantry. Under these circumstances it seemed useless to recommend outright the organization of either cavalry or infantry into nine troops or companies, without sound arguments in defense of the change. These reasons were not difficult to find for those who have made careful study of the Civil War, but the advantages of the change were not so apparent to all who were responsible for the organization and administration of the army. A continued presentation of the subject, however, in connection with the then proposed General Staff, served to bring to the attention of the Secretary of War and the President the invaluable services rendered to the army by General Emory Upton in his studies of the Civil War. If it then had no other result than a revival of interest in General Upton's writings, the efforts were worth while, for we now have in print his "Military Policy" as a result of that campaign of education.

Generals Sherman and Upton, and, in fact, nearly all the students of the Civil War, regarded the failure to recruit experienced organizations as one of the glaring faults of that contest. Thousands upon thousands of inexperienced men were organized into new regiments, while old and tried organizations were allowed to dwindle until their depleted strength necessitated consolidation of companies. The whole experience of the Civil War teaches the absolute necessity of some form of depot organization to replenish the losses of active service. The recognized experience of the "home battalion" system during the insurrection in the Philippines,

and now in operation with the regiments in Cuba, has condemned the experiment. The efficiency of the home battalions has been practically destroyed and they have not served as depots to replenish the ranks of the other battalions.

The solution recommended by the writer, and published in 1903, had reference to a depot system for infantry. The same ideas, applied to the cavalry, will now be considered with special reference to its application in the proposed reorganization of that arm.

The theory of modern drill regulations is based upon battalion and squadron leadership. If squadrons are properly trained and led, the maneuvers of regiments, brigades and divisions become much simplified. A few cavalry officers have expressed opinions favorable to a return to the European squadron of two troops. It is not necessary to adopt any organization because some other nation has it. We may to better purpose profit by our experience, and, considering the peculiarities of our situation, proceed to arrange an organization on conditions to be reasonably expected in any war in which the nation may be involved.

Our higher units are comprised generally of three of the next lower units; that is, three squadrons constitute a regiment, three regiments a brigade, three brigades a division, and three divisions a corps.

At one period the men of each troop were arranged in threes, the width of three horses in line being adapted to wheeling by threes. The question of marching the column of threes on the average country road in America became a serious one, because the continued use of a narrow road by double teams creates a ridge in the center.

The squadrons are placed in line and column at considerable intervals and constitute workable units within the range of one man's command. It is essential that every officer and man should thoroughly comprehend his part in the drill and battle movements of the squadron. This accomplished, if the drills and movements of all other units are made to correspond to those of the squadron, the whole field of instruction becomes simplified and reduced to a minimum.

If, therefore, each troop is habitually trained in three platoons, and each squadron in three troops, the regimental and brigade formations and exercises may be based upon those of the squadron, and the book of drill regulations be reduced to limits readily learned by volunteers.

In order to accomplish these desirable ends it is only necessary to reorganize the cavalry regiments into three squadrons of three troops each, as peace organizations, and provide for a fourth or depot troop to each squadron, in time of war. The duty of each depot troop should be confined to recruiting and training men and horses for its own squadron, and, incidentally, to furnish a rallying point for all convalescents and furloughed men of the squadron to which it belongs. Recruiting for the regular army in the Civil War was wholly ineffective so far as keeping up the strength of the organizations. This experience will be repeated whenever the number of National Guard or volunteer regiments called out is very great, unless "depots" for regular regiments are localized and individualized during the period of the war. The large number of men, convalescents and others, wandering about the country during the war with Spain, were not only lost to their commands, but a source of endless trouble to mustering officers and to the Adjutant General's Office. Regimental depots would materially reduce this difficulty.

The size of tactical units of cavalry varies considerably in different armies. A troop of 100 men is large enough to give valuable effect to fire action, and is not too large, when mounted, for the supervision of the captain. The expedient of increasing each troop to 125 men, which was adopted several years ago during active service in the Philippines, did not commend itself sufficiently to justify a continuance of such large troops. A war strength of 100 men for each troop would furnish 300 men for a squadron, which makes a very workable and satisfactory number for both mounted and dismounted action. Small troops, with the full quota of non-commissioned officers and musicians, are not efficient for dismounted fire action, and for that reason some provision is necessary for increasing the peace strength of our cavalry

troops at the outbreak of war with experienced soldiers, preferably those with former service in the cavalry arm.

The practice of nations maintaining large armies is to keep up the cavalry and field artillery to war strength, as far as practicable, all the time. While this is very business-like and desirable, it is not considered practicable in America. The proportion of cavalry, or mounted men, in a field army is usually assumed to be about one-seventh of the infantry, but may be profitably raised to one fourth under some circumstances. It is not probable that the number of cavalry regiments required for the first line of the army in war will ever be retained permanently in service in this country. The cavalry should therefore be organized so as to meet future contingencies as nearly as possible.

There are now in existence 15 regiments of cavalry of 12 troops each. If these fifteen regiments, comprising 180 troops, be reorganized into 20 regiments of 9 troops each, with authority for raising a depot troop for each squadron at the outbreak of war, it is believed that the efficiency of the cavalry arm will be increased greatly beyond any possible increase of expenditure. The effect of such reorganization would be to add 5 colonels, 5 lieutenant colonels, 15 majors, 15 captains as regimental staff officers, 15 first lieutenants as squadron adjutants, and 15 second lieutenants as squadron quartermasters, 5 bands and necessary non-commissioned staff officers for the new regiments. Incidentally such a reorganization would insure a slightly increased flow of promotion, but this would be entirely incidental to the more important fact of greatly increased efficiency of the cavalry arm.

Any reorganization must contain provision for depot organizations from which recruits and trained horses may be drawn in active service. Therefore it should be provided that appointments from the ranks, or from civil life, of extra lieutenants may be made during war to replace officers detached from the regiments at the depots. The number required for this duty should be three officers with each depot troop, and a field officer, of the rank of lieutenant colonel or

major, to take charge of the three depot organizations pertaining to each regiment.

The proposed organization is quite in harmony with the ideas of many experienced officers. A general expression of desire for reorganization has already secured some attention from higher authority. It is believed that the best interests of the cavalry at this time would be subserved if an actual experiment should be made at the cavalry school at Fort Riley to test the utility and determine the advantages of the three-troop squadron over the four-troop squadron, applying the principles of regimental drill to the three-unit squadron. For instance, in column the rear troops may be thrown forward to both flanks, materially increasing the rapidity with which the line may be formed. This is one of the many marked advantages of the proposed organization, and if the cavalry board at Fort Riley should see fit to make such an experiment under the observation of the commandant, a favorable report should have marked weight in determining the future of cavalry organization in this country.

While the hope and prospect of advancement to correspond with one's years in the service must always be held out to officers, no reorganization should be based solely on the ground of increased opportunity for promotion. The problem of cavalry reorganization is a practical business proposition. If cavalry officers work together with the usual harmony that has characterized the conduct of that branch of the service, and if actual experiment with the three-troop squadrons prove their value, that will justify reorganization of the arm on business principles and will thereby secure the attention of Congress, before which a mere change for promotion's sake will not and should not obtain a hearing. The present regiment, at war strength, with 100 to 125 men to each troop, fulfills the conditions of a cavalry brigade and exceeds the limits desirable for regimental organizations. This is the primary cause for asking for a reorganization. No plan should be considered which does not provide, in peace, for meeting the requirements of war, as to recruits and remounts, as a part of the regimental organization and administration.

THE PROPER TRAINING OF A CAVALRY TROOP.*

By Captain HOWARD R. HICKOK, Fifteenth Cavalry.

THE subject is an extensive one involving many considerations. Two quite distinct cases are observed, one the training of a troop in a newly organized or reorganized regiment, and the other the constant training that must be observed in order to keep a troop in an efficient condition after it has once been organized and trained. New regiments are not frequently raised. But, with the frequent recurrence of insular service and the system of discharges and enlistment necessarily involved, a condition analogous to that existing in newly organized regiments frequently arises. Hence, the training of a newly organized troop will be first considered, and this will be followed by a suggested course for the following year.

Training a troop requires efficient officers having an aptitude for mounted service. The captain is responsible for the proper theoretical and practical instruction of his subalterns in all that pertains to troop administration and efficiency. In order to secure this efficiency, they should be given opportunity to command and to instruct in all the various drills and exercises, as well as being required to perform all the various phases of administrative work in connection with the troop.

The geographical location of the station of the troop and the season of the year when organized will materially affect the system of training to be followed. In California, in the southern part of the United States, and in the tropics, out of door instruction can be imparted the year round, while far-

*One of a series of papers submitted by student officers of the Staff College, 1908.

ther north this instruction will be materially interfered with in the colder months. In the following discussion it is assumed that the troop is stationed at a post where the four seasons rotate, that it is now springtime, and that the troop has its quota of officers, men and horses.

There are usually in every large number of recruits at least one or two men who have had previous military experience, or if the troop be on the point of reorganization, there are always a few old soldiers who have been left over from those discharged or who have reënlisted. A first sergeant, stable sergeant, quartermaster sergeant, and may be other non-commissioned officers, will thus be available from the start.

The trooper must be instructed in both dismounted and mounted work. He must be trained to fight both on foot and on horseback. He must be much, if not in fact quite all, that a good infantryman is, besides being trained in orthodox cavalry work and being a good scout. Such a variety of work is required of him that his course of instruction is necessarily longer than that of his brother of the foot services.

About the first thing to be issued is a currycomb and brush. The trooper should be impressed with the fact that these are as necessary to his existence in the cavalry as is his mess kit. Clothing must be fitted and issued and the men warned as to their responsibilities in preserving it. Equipments are next issued and instruction given in their care and preservation. The daily routine of garrison is begun at once. Promptness in obedience to calls must be insisted upon, as well as neatness in personal appearance. By this time the Articles of War should have been read and explained and their full force impressed upon the men, particularly the crimes of desertion and selling clothing and the penalties therefor. Daily instruction should be started immediately, beginning with setting up exercises, followed by the other instruction laid down in the school of the soldier. At first drills should be short, gradually being increased in length and scope. Three to four hours per day will be as much as the soft state of the recruit will at first permit.

Being in daily attendance at stables, the men are gradually becoming acquainted with the horses and with their care.

The subject of instructors is most important. In a newly organized troop they may be scarce. The officers will in that event probably personally have to give instruction to recruits in those elementary matters which is usually given by non-commissioned officers under an officer's supervision. Within a few days after dismounted instruction has been begun, mounted instruction must be taken up. If the horses be remounts without previous training, instruction will make slower progress, but no insuperable difficulties are presented. The instructions laid down in paragraphs 269–558 inclusive, Cavalry Drill Regulations, should be followed progressively. The paragraphs on training horses should, of course, receive fair attention.

The dismounted and mounted drills proceed hand in hand. The most apt are advanced, while the laggards are given more elementary instruction. Squads are combined, and finally the whole troop is drilled as a unit in both mounted and dismounted exercises, in school of the troop in all its various phases, in close and extended order, in charging in all the various authorized formations, in fighting on foot, and in attack and defense on varied ground.

Non-commissioned officers will be selected according to their soldierly bearing, aptitude, and intelligence. Each when detailed in charge of quarters will learn those duties practically. They will in turn be detailed in charge of the mess and will demonstrate their ability in that direction. Men are detailed as cooks, farriers, blacksmiths, and saddlers. Every effort should be made to secure efficient men for those positions. If no men in the troop be competent to perform those duties, application should at once be made to higher authority for supply. The most likely men should be detailed as assistants to be later utilized in case of necessity.

Troop school should be held in guard duty. As a stimulus to quick learning, each man should be excused from further attendance as soon as he has demonstrated his proficiency by recitation and by conduct on practice guard posts. In this connection there should be taught such customs of

the service as have a bearing on the conduct of enlisted men, the respect to be shown to officers and to non-commissioned officers, the relation of enlisted men to each other, the significance of the various insignia of rank and of the various arms of the service, etc.

Non-commissioned officers will have much to learn, everything in fact. They must be instructed in drill, stable duty, guard duty, and in exercising command. School for them will also include theoretrical instruction in minor tactics. They should be taught how to sketch and make reports of reconnaissance of various important features of the terrain. The principle of messages should also be included in this instruction. All intelligent privates giving promise of making good non-commissioned officers should be required to attend non-commissioned officers' school. The troop officers will be the instructors, the captain, if not himself giving the instruction, being present often enough to insure that the work is well done.

Drills preliminary to target practice, including gallery practice, should be taken up as soon as instruction in the manual of arms and dismounted drill have become mastered. When the entire mounted instruction is well under way, target practice with rifle and revolver should be held. Target practice should also include field firing at simulated battle targets over variable terrain and unknown distances. The principles of firing having been first well taught, there should be firing as opportunity permits at all seasons of the year.

When some proficiency has been acquired in troop drill, short practice marches should be undertaken. There should be an occasional night's bivouac, shelter tents being used and cooking being done with individual mess kits. These marches are particularly good opportunities for instructing the men in the adjustment of the pack, in the means of avoiding and treating sore backs, in the care of the feet, and in the proper times for feeding and watering. On these marches (and in garrison also) herding is desirable when practicable. Some simple tactical exercise should be undertaken in connection with the march. Those non-commissioned

officers who have shown an aptitude for sketching should in turn be detailed to sketch the roads traversed and all non-commissioned officers should be required to make a road report.

As instruction advances, a part of the time allotted to troop drill should be devoted to instruction in security and information. Advance and rear guard should be frequently practiced and also patrolling and outpost duty. Problems of a minor nature should then be undertaken, such as patrol against patrol, outpost duty with contact by hostile patrols, advance, flank and rear guards, all with hostile contact. Command of opposing sides could, after some instruction, be given to the non-commissioned officers. These exercises can best be undertaken in conjunction with other troops of the garrison. In order to develop self-reliance, proficiency in scouting, and an eye for country, patrols should be sent out in various directions, with special instructions as to matters to be reported upon, and these patrols required to rendezvous at some designated point several miles beyond the starting point. The exercises of this nature will accomplish more if the terrain on which carried out is entirely new to the men

The instruction has now advanced to the stage where drills in school of the squadron should have begun and where two or more troops are combined in a tactical exercise. The initiative of the troop commander is here restricted, but he is none the less responsible for the instruction of his troop.

Compulsory instruction in athletics and gymnastics are most valuable in those seasons when out of door drills and exercises are impracticable. A few minutes daily devoted to setting up exercises will do much toward giving the men a good military set up. Where practicable, instruction should be given in swimming. However, with the proper rotation of duties and drills in a troop, but little time will be left in the season of out of door drill for athletics and gymnastics. During the season of indoor drill, if a riding hall be available, there need be little necessity for work in the gymnasium.

Discipline—unhesitating obedience to superior will—is the soul of an army. The men must first be taught what discipline is. It must be constantly enforced. A prime requisite is justice to all. Punishment must be graded according to the offense. To provide for the comfort, welfare and healthful amusement of the men as far as the circumstances admit promotes their contentment and puts them in a better state of mind for obedience, and renders desertions fewer. Summary punishment, where practicable and suitable to the nature of the offense, is preferable to trial by court. Punishment should promptly follow the offense, and not be deferred. The troop commander should show by his own systematic conduct toward his troop that he has the welfare of the men at heart, and he should require the same conduct on the part of his subalterns. While, according to theory, soldiers should obey orders without the reasons therefor being given, the average American soldier will do better work if he knows the reason for the work. The training of a troop is thus dependent upon collateral conditions to a certain extent, which in reality should not enter into consideration. If the surroundings in which men are placed be pleasant, desertions will be less, and discipline can frequently be more easily enforced. If discipline be good, instruction can be more easily imparted. Also, drill properly handled is an aid to discipline.

There must be a constant amount of healthful employment for the men, whether it be drill, athletics, or other duties. Monotony should be avoided, for nothing so kills interest as monotonous repetitions. As a matter of course, until the mechanical principles of any work or instruction are overcome, there will necessarily be a certain amount of tedious repetitions amounting to drudgery. The training of the troop will be accelerated or proceeded with more deliberately, depending upon circumstances. If active service be imminent, every effort should be made to make the troop ready for the field. Many of the minor matters that deserve considerable attention will have to be gone over quickly. If time be available, then thoroughness in all work should be insisted upon.

Usually the demands of garrison duty will materially influence training. The troop will ordinarily be required to furnish its quota for guard. The quartermaster will be calling for fatigue details almost daily. All the offices and departments will be asking for the detail of men on extra or special duty. Each man thus given loses a certain amount of valuable instruction. Besides, these detachments lessen the opportunity for and the effect produced by collective instruction. To make the most of opportunities is the best that can be done. In order to give instructions so as to fix the principles to be taught, a sufficient number of men must be assigned to an organization. The number of men authorized on a peace footing—sixty-five—is too small. By the time the usual detachments are made, usually not more than twenty-five or thirty men are available for instruction in any exercise, or a little more than one platoon, or about one-fourth the theoretical war strength. This combination of administration and organization, though unsatisfactory, is beyond the control of the troop commander.

Division of the troop into squads, quartering the men of each together, and the supervision of each by its non-commissioned officers, is an aid to instruction and discipline, and is desirable. But, with the ordinary conditions of our service, the small size of the troops, the absence of so many men and non-commissioned officers at one time, the system meets with many discouragements.

The weekly inspection is of greatest importance. While an occasional full dress inspection should be held, the greatest value results from a mounted inspection, saddles packed, fully equipped for the field. After the general dress, appearance, and the arms have been inspected, the men should be required to dismount, unpack their kits, and open their saddle bags for a further inspection.

In the course of developing a troop, a man may occasionally be found who has demonstrated his absolute unfitness, either mentally, physically, or morally, for the troop. No time should be lost in an effort to have him removed from the service. For those men who are the constant subjects

of disciplinary measures, the shortest method to their discharge should be pursued.

Present regulations require that at least twelve hours instruction per year be given in the subject of methods of rendering first aid to injured. Practical instruction in hygiene and on the subject of preventable diseases should also be given. The avoidance of impure water, personal cleanliness, particularly clean hands and faces when going to meals, and the proper use of mosquito bars, these and many other details necessary to the preservation of health must be taught and insisted upon. In order to have a few men qualified in visual signalling, instruction in this subject should be given until the prescribed number have qualified. Since cavalry may expect to operate frequently with only pack transportation, instruction in packing must be given and competent men developed.

The proper training of a troop is largely a matter of detail. The principles of instruction and discipline are everywhere the same. The efficiency of a troop is largely measured by the efficiency and vigilant supervision of its commander. There is no detail, however small nor how often it recurs, that should escape his notice. It is daily repetition and insistence that in the end will accomplish results. Merely giving orders is not sufficient. While theoretically all officers are supposed to be competent and to execute all orders without the necessity of giving to them detailed instructions, in practice this requires modification. The captain must be on hand frequently, almost continuously, to assure himself that his instructions are obeyed. No order should be given that he does not require to be enforced. His supervision is not limited to the daylight hours, but extends to the whole twenty-four. His inspections should not only be made in the morning, but also at any hour of the day or night. With vigilance on the part of the captain, results can be accomplished, no matter how bad his system of instruction. Without this vigilance good results will be only a matter of luck, no matter how excellent the system may be in other respects.

The foregoing outline of initial instruction for a troop can with modifications also serve as a basis for subsequent years. During the season when out of door work is difficult or impracticable, the instruction in theoretical matters should be undertaken. Drills in the various manual of arms, saber and fencing exercises, sighting, position, and aiming drills, and gallery practice should be held. Instruction in all the smaller matters can be taken up and finished. If a riding hall be available, instruction in horsemanship, beginning with elementary principles and extending up to include the squad in close order should be given. In this way, when open weather arrives, the troop will be ready to proceed with more extensive subjects. A few drills in each should make the troop in an efficient condition for the field.

When the troop receives a few recruits at a time to bring it up to its strength, there is but little difference in the method of instructing them up to the time that they are taken up for full duty from that above outlined. Some of the yearly instruction that the troop may have had will not be given to them until the next cycle of instruction comes around. Where the troop has been organized for some time as it stands, recruits must have some special provisions made for them. They should, as far as practicable, be quartered together and separately from the rest of the troop. They should be supervised by one or more competent drillmasters permanently assigned to their instruction. They will have enough to occupy them without the imposition of fatigue work, and they must be particularly supervised to prevent interference on the part of older soldiers. If previous to their joining the troop the recruits have received instruction at recruit depots, their instruction in elementary matters will proceed quicker. This may happen in ordinary times, but will rarely obtain when new troops and regiments are organized.

The details of the instruction as above suggested may be tabulated in the following form:*

*Although these tables show at a glance the proposed scheme of progressive instruction, it has been found impracticable, without too great additional expense, to print them in tabular form, and a synopsis of them is given instead.—EDITOR.

TROOP TRAINING, FIRST YEAR.

(Paragraphs refer to Cavalry Drill Regulations and are inclusive.)

First Week:

Explain parts of arms and equipments, care of same and of clothing, barracks, etc., insignia of rank and the A. W. affecting soldiers.

Dismounted. Half hour, paragraphs 18–65; half hour, paragraphs 127–167; one hour, paragraphs 62–126.

Mounted. Two hours daily, paragraphs 269–286 and 311–248. Drill at walk and slow trot.

Instruction in grooming and care of horses daily at "stables."

Second Week:

Dismounted. Continue the first two half hour periods and combine with paragraphs 168–178; continue the hour period but use half of the hour on paragraphs 198–249.

Mounted. Two hours daily, paragraphs 290–343.

Third Week:

Recitation in Manual of Guard Duty and practice guard posts. Instruction in conveying messages. This instruction to be continued through the fourth week also.

Dismounted. Three hours daily, paragraphs 19–249; time to be reduced as proficiency is acquired. This instruction to be continued throughout the fourth, fifth, sixth, seventh and eighth weeks.

Mounted. Continue instruction of the preceding week, two hours daily; the squad mounted, paragraphs 400–558. This instruction to be continued through the fourth, fifth and sixth weeks. In proportion as efficiency is acquired in dismounted drill, instruction and time devoted thereto reduced and mounted instruction to be increased to three hours daily.

Fourth Week:

Dismounted. As noted above.

Mounted. One hour daily, paragraphs 269–399, in riding hall half-hour without saddles and half hour with saddles; continue instruction of squad mounted as noted above.

Fifth and Sixth Weeks:

Dismounted and mounted. Same as for preceding week.

Seventh and Eighth Weeks:

Dismounted. Same as preceding weeks, as noted above.

Mounted. Two and one-half hours daily, troop drill fully armed, paragraphs 559–696.

Third Month:

N. C. O. school, three times weekly, minor tactics, sketching, road reports, messages, reconnaissance, drill regulations, firing regulations, hippology. Theoretical instruction to be resumed after completion of target practice. This instruction to be carried on during the third and fourth months.

Instruction in first aid for one hour each week for two weeks; signalling, one hour five times each week until one officer and four men qualify; packing to be given when signalling is finished and continued until all apt men qualify. All this instruction to be carried on during the succeeding month. To be suspended during and resumed after target practice.

Mounted. Troop drills two hours daily and squadron drills one hour daily; practice in advance and rear guard when going to and returning from drills, at least four exercises to be held in each; patrolling and outposts.

Fourth Month:

N. C. O. school three times weekly as noted above.

Dismounted. Drills pertaining to target practice, estimating distance and gallery practice. Instruction in first aid, signalling and packing as in preceding month.

Mounted. Three days each week, squadron drill for one hour and regimental drill for one and one-half hours daily; two days each week, small tactical maneuvers.

Fifth and Sixth Months:

Target practice, rifle and revolver, until completed, not to exceed two months, for such number of hours per day as are available and suitable, six days per week. Horses to be kept on picket line near firing stand. When not engaged in tar-

get practice, troop and squadron drills to be resumed and one hour daily in paragraphs 19–249.

Remarks.—Except when otherwise stated, all instruction to be in periods of one hour each for five days per week. A practice march, remaining out over night, to be taken at end of second month, and subsequently a practice march of two or three days to be taken monthly. Beginning with seventh week, troop drills to terminate with one or more runs over the following prepared course: A straight track two hundred yards long with the following, in the order named, beginning at the near end, head posts to right and left for revolver fire, three foot brush hurdle, head posts to right and left for "against infantry" right and left cut, ditch six feet wide, ring post for tierce point. The first and second time over to be at the walk and thereafter at the gallop. Troopers to follow each other individually at sufficient distance. See schedule for subsequent year for remarks as to guard and fatigue details, absentee lists and stables.

Remounts, as soon as received, to be carefully trained under an officer.

TROOP TRAINING, YEARS SUBSEQUENT TO THE FIRST.

(*Paragraphs noted are in the Cavalry Drill Regulations and are inclusive.*)

November:

Mounted drills, without saddles, in riding hall. Paragraphs 269–343, 352–373, 398–9 and 458–480.

Recitations in manual of guard duty until entire troop is proficient, about two weeks. Such instruction to be again resumed when the character of performance of guard duty indicates necessity.

Instruction in packing, paragraphs 1122–1129, until all likely men are proficient.

Instruction in first aid, on Saturdays, for twelve weeks.

Instruction in signalling with flag until one officer and four men are proficient.

Non-commissioned officers' school three times each week, Army Regulations, in so far as they apply to enlisted men.

December:

Mounted drills of previous month continued and to alternate weekly with drill with saddles. Paragraphs 344–351, 374–447 and 458–482.

Manual of rifle, saber and revolver; position, sighting and aiming drills; setting up exercises; facings, steps, salutes, etc., all in rotation, and to be continued until March 31st.

N. C. O. school—hippology, theoretical and practical, including demonstrations by veterinarian when practicable. Three times each week.

January:

Mounted drills, paragraphs 267–482, to continue until March 31st. Paragraphs 448–456 and 484–558 to be taken up when weather permits outdoor drills.

Manuals, etc., as in preceding month.

N. C. O. school, three times weekly, in sketching, reconnaissance and road reports.

February:

Mounted drills as noted for January.

Manuals, etc., as for preceding month.

N. C. O. school three times weekly in security and information and messages.

March:

Mounted drills as in preceding month.

Manuals, etc., as for preceding month.

N. C. O. school, three times each week in drill regulations.

April:

Troop drill for two hours. During the last two weeks practice will include drill proper, advance and rear guard, outpost duty and patrolling.

N. C. O. school, three times each week; review security and information in connection with practical instruction.

May:

One hour troop drill and one hour squadron drill. The last two weeks to also include instruction in minor tactics by squadron.

Drills pertaining to target practice, gallery practice and estimating distances.

N. C. O. school, three times each week, in Small Arms Firing Regulations.

June and July:

Target practice with rifle and revolver for so much time as may be necessary on six days of the week. Horses to be tied on picket line near firing stand. On days when target practice is not held, troop and squadron drills to be held two hours daily.

Dismounted: When not engaged in target practice, drills for three-fourths of an hour daily in paragraphs 19–249.

August:

On three days per week, squadron drill for one hour and regimental drill for one and one-half hours. On two days per week small tactical maneuvers.

N. C. officers—practical instruction in sketching, reconnaissance and road reports.

September and October:

Annual marches required by G. O. 177, W. D., 1907. Troops not so engaged to follow schedule for May and August.

Dismounted drill as in June and July.

Remarks:—Except when stated, all drills to be given in periods of one hour each, five times each week. During troop drill season, practice to be had in running at heads over prepared course as in schedule for first year. All men over thirty-five to be excused from executing the mounted exercises, paragraphs 308–9–10. Monthly march prescribed by G. O. 177, W. D., 1907, to be taken in field training season. Horses to be herded when practicable. On days when horses have not been otherwise used, horse exercise for one hour to be held. Guard mounting to be held late in the afternoon. Entire guard and fatigue details to be furnished from one troop, each in turn. Absentee list to be smallest possible consistent with efficient administration. All instruction as far as possible to be given in the morning.

"Stables," as far as practicable, to immediately follow drill. Setting up exercises for fifteen minutes daily.

These tabulations merely indicate the general scope of instruction. The first of these illustrates the initial instruction of a new organization and is a compromise between a desire for thoroughness and a desire to obtain results quickly. In the instruction of a new organization some of the outlined instructions would of necessity be curtailed. Other parts would possibly be more extensive. A different distribution would have to be made according to circumstances and the facilities available. The mounted instruction of a new organization had best be deferred until a subsequent week of instruction; but proper care and exercise of the horses may require such the first week. If active service be not imminent, much more time should be devoted to mounted instruction, both troop and individual, than indicated in this table. The target practice for such an organization would be such as would give its members some ability at shooting, but, if active service is imminent, would hardly be the entire course laid down in the Firing Regulations.

In the training of all organizations from the regiment down to and including the troop, the influence of all authority will be felt in the measure that it is directly exerted. With a Chief of Cavalry providing well thought out plans, instruction will be uniform throughout the service. Under this officer should be placed cavalry officers detailed as inspectors of cavalry, and who should make the inspections of cavalry commands now made by any officer of any arm. Cavalry officers are more competent to judge the efficiency of their own arm and to point out its deficiencies. The supervision of the department commanders is reflected in the care and detail of their orders on instruction and in the thoroughness of their inspections. The regimental and squadron commanders are on the spot. The efficiency of their command as a whole will be according to their supervision. But, with the increasing complexity of modern war and tactics, the efficiency of the individual soldier is a matter of greater importance than ever before. The influence of commanders upon the execution of efficient instruction

and training is inversely as the position and rank of the commander. Efficient captains are necessary. Without them, the training will be anywhere below excellent.

Since dismounted and mounted instruction proceed together, it is difficult to separate the two and say when a troop is efficient for dismounted work as distinguished from mounted. Since dismounted work is part of the fighting tactics of cavalry, and this is a part of the mounted instruction, a troop cannot be said to be efficient for dismounted work until it is efficient for mounted work also. Orders from the various departmental headquarters usually provide that cavalry recruits shall have had instruction on forty days before being taken up for "duty." Forty days seems to be assumed as a period necessary in which a recruit may acquire a fair degree of efficiency in individual instruction. For an entire troop to be taken up for full duty at the end of forty days does not presume a high state of troop efficiency. At the end of three months the command would be in better condition and could possibly take the field, though not with a high state of efficiency. In six months it should be efficient in some respects, but not by any means perfect. The efficiency, of course, should increase with the length of service of the members of the troop, and in any given year should be coincident with the period of fall marches and maneuvers.

The mere mechanical part of instruction can be imparted and knowledge thereof acquired in a few months. Discipline requires longer to engraft. But the general ability and knowledge on the part of the soldier of how to take care of himself under all conditions of field and garrison and of the duties and line of action which he should follow intelligently under the varying military circumstances is a characteristic that takes years to acquire and renders the "old soldier" particularly valuable. Formerly, under the five year term of enlistment, a man was considered as being a recruit until he had served three years. Under varying conditions, the soldier will acquire this proficiency sooner. The soldier who has spent a year in actual campaign should, other things being equal, be more efficient and valuable

than one of the same length of service, all of which has been spent in garrison.

The fact that new organizations have to perform their share of routine duties within a few weeks after organization does not necessarily indicate that such organizations are well instructed or efficient. If active service be imminent, they will have in some cases not three months in which to prepare, and six months may be considered as a maximum of time permitted them for preparation in all matters. Officers in command, in arranging the course of instruction, should be guided by the local circumstances, also taking the general situation into consideration. In volunteer organizations raised for war, only a few of the officers will probably have any knowledge of their duties. Due to deficient leadership, such an organization will be longer in acquiring efficiency. A subject sometimes considered is "the moral preparation of the soldier for battle." The best preparation of this kind is discipline. However, a well disciplined soldier without a leader is like a ship without a rudder. Good leadership is necessary. The average man has sufficient courage to follow where led. If to ordinary courage be added unswerving discipline, the soldier with a good leader will not shrink from even a forlorn hope. The length of time necessary to make the moral preparation of the soldier for battle is coincident with the time necessary to instill him with the proper spirit of discipline.

Post commanders can materially aid or hinder troop instruction by giving or withholding men from attendance at drills. The following are mentioned as customs not uniformly observed in this respect: By holding guard mounting late in the afternoon there will be no absentees from drill on account of old guard privileges. By having guard details and fatigue details furnished entire by one organization in turn each day, a greater number of men will be available for collective instruction in those organizations present for drill. Although an instruction day for each troop will, under this system, be frequently omitted, the gain in men present on other days will more than compensate the omission. The creation of a friendly rivalry and spirit of com-

petition is desirable, and this could be promoted by some small distinguishing preferment, such as favorable mention in orders, publishing a monthly rating of efficiency by troop and squadron; exemption from fatigue work for a certain period, or something of that nature.

It is customary to divide the year into a season of garrison training and one of field training. The necessities of elementary instruction and of the seasons of the year are usually combined in determining these divisions. In the proposed schedule, theoretical instruction is carried beyond the garrison training period. Practical work will be the chief feature of the field training period, though theoretical instruction should be given whenever desirable and time is available. As a general rule, the captain, on observing that his troop is growing dull in any form of instruction or training, should at once resume instruction in that subject and continue it until proficiency is attained.

In the description of training here given, only the more general features have been touched upon. Details are usually elaborated in the various manuals, and are not repeated here. Details as to the methods of conducting drills, as to the difficulties most usually encountered in drill and how to meet them, the system to be followed to keep horses up to the standard of training, the usual faults and errors of the men in their own conduct and in the management of their horses and remedies therefor—these and many more are vital matters, the exposition of which would be long. In practice, instruction would be blocked out into even smaller divisions than those given in the tables above, a certain number of hours or drills being allotted to each subdivision. This will insure that all forms and details of instruction receive due consideration, and that none will be neglected. Even a good program cannot be expected to be self-operating. There will be constant interruptions. The various requirements of garrison, such as ceremonies of all kinds, general fatigue, inclement weather, etc., will interfere with almost every plan. The vigilant troop commander will not allow his plan to be stopped, but as soon as the cause of interruption ceases, he will resume its operation. Only by untiring energy and

ceaseless vigilance will efficient training be conducted and maintained. The constant effort should be made to harmonize conditions actually existent and frequently most unsatisfactory to the degree of perfection called for by theory, and to acquire that perfection as far as practicable.

THE USE OF MACHINE GUNS WITH THE CAVALRY.*

By Lieutenant HARRY L. HODGES, First Cavalry.

THIS paper is submitted for the purpose of prompting, if possible, a discussion of the tactics of the machine gun with cavalry, and not with any intention of setting forth any new ideas on their use.

Numerous examples have been given and discussion had, by military men, of the tactical use of the machine gun with infantry, but such examples are less numerous where its use with cavalry is concerned; although from the first the machine gun has been recognized as being of immense use to cavalry. A more varied field is open for its use with cavalry than with infantry, for more occasions present themselves for its effective use.

It is fully recognized that, with the infantry, the rôle of the machine gun is to supplement the fire of the rifle; but with the cavalry, the machine gun should be a substitute for rifle fire rather than a supplement to it, and herein lies the essential difference between the uses of the machine gun with the two arms. With these introductory remarks, we can now proceed to discuss the subject.

This is more or less a venturing into an unknown and untraveled sea. Authorities cite many instances of where machine guns may be used advantageously with the cavalry, but seldom do they touch upon the tactics of the arm, and rightly so, for war has not yet given enough available data upon which to base these tactics. Particularly is this so of the Madsen model machine gun, automatic rifle or rifle

*One of a series of papers submitted by student officers of the Staff College, 1908.

mitrailleuse, introduced near the end of the Russo-Japanese War into the Russian cavalry. Any points of tactics touched upon in this paper are but the products of imagination, as yet but seldom fully determined in war.

In order that this subject may be satisfactorily handled, some framework must be constructed upon which to hang its discussion; accordingly, the various points of view from which this subject will be considered are as follows: The theory of the use of the machine gun with the cavalry, examples of its use, the proper gun for use with cavalry, the prime requisites for the same, and finally a brief discussion of a tentative organization for the machine gun detachment. It would have been well to have discussed the very important subject of ammunition supply for this gun, since this consideration is of vital importance for the proper use of the gun in detached cavalry operations lasting for some time, but the limits of this article forbid.

Further, to limit the scope of this discussion, the proper organization, equipment and the probable use of the machine guns with the regiment of cavalry assigned to a division operating on the flank or as a separate division, will alone be touched upon.

The uses of machine guns are divided naturally into two classes; first, as a weapon intermediate between the infantry and artillery rifles, to cover the ranges from 800 to 2000 yards; second, as a means of concentrating and increasing fire effect at distances less than 1000 yards. It may be accepted almost as a fundamental idea, anyway as a reasonable hypothesis, that the chief benefits that cavalry derives from the use of machine guns are the infantry fire thereby supplied and the consequent increase in the number of men who are available for mounted or rapid work, and this chiefly under the second of the foregoing tabulated uses.

It has been said that the machine gun is an arm of opportunity, and that it requires a deep or a broad and deep target, but experience in the Russo Japanese War has shown that lines of skirmishers are targets good enough *within 1000 yards*, an ample range for the majority of cavalry attacks dismounted, unless the cavalry is playing the part of infantry in

a general line. Then too, as the machine gun approximates the shape and use of the automatic magazine rifle, this objection, with respect to the target necessary, disappears to a degree. In firing at short ranges, on a line of skirmishers or on a defensive position, the moral effect of the machine gun, undoubtedly great, comes into play as well as its effective fire strength, and the enemy is kept hugging the ground or dodging behind cover by the sweeping rain of bullets. Where the automatic rifle is used as a machine gun, since the beaten zone is very shallow, the range, when long, must be accurately known in order that results commensurate with the expenditure of ammunition may ensue.

Accordingly, when the range is not accurately known, and at long ranges, resort should be had to sweeping fire, moving the elevation up and down so as to sweep a space of 100 yards less than and the same distance beyond the supposed range. Ofttimes, on account of the continued stream of bullets falling near one place, dust will be raised and the machine gun will be used as its own range finder.

The fire of automatic rifles can be regulated, and the endeavor here is, as it is in firing with a company of infantry, to cover with bullets a particular area.

General Alexander has said: "It is rare that all hostile lines get so near together, and are so exposed to each other's view, that men can select their targets. When this does occur, some decisive result is apt to be reached quickly. Fighting rarely consists now in marching directly upon one's enemy and shooting him down at close range. The idea is now a different one. *It rather consists in making it rain projectiles all over the enemy's position.*"

Than machine guns, the necessity for deep targets is even less in case automatic rifles are used; for, when used at long ranges, these automatic rifles may be employed either for long range infantry fire, that is slowly, or as machine guns, should the opportunity appear. They carry with them an ever increasing capacity for effective infantry fire; starting at the long ranges as single-loaders, they may be used at the decisive ranges as automatic rifles or machine guns.

In pure mounted action, the machine gun finds but limited use, playing the part of horse artillery to a degree; in the dismounted or the combination of the mounted and dismounted action, the machine gun will prove of great benefit, both in offensive and defensive movements.

That cavalry may make the most of its mobility, as a general rule the machine gun should be employed where necessity first requires a portion of the command to be utilized dismounted, and to lose some of its mobility, although occasions will come when its only proper use will be with the more mobile part of the cavalry command. Concisely stated and limited to a particular case, this idea is—use the machine guns with the dismounted secondary attack or with the dismounted line of the defense unless opportunity requires its use well off on the flank, as was the case in the infantry attack of the English against the Mahdists at Atbara, where the machine guns, being placed in a flank position, were enabled to continue their fire during the entire action without being masked by the advance of their own infantry; and similarly in the English expedition against the Chitral Hill tribes.

As has been stated, the machine gun with the cavalry will find its greatest use as a substitute for dismounted fire on account of its ability "to concentrate upon particular points a very intense infantry fire." It will find its most effective use on occasions when it would have been well to have had infantry attached.

Following the machine gun detachment or company, with its regiment of cavalry, through the vicissitudes of combat, you run across the following uses made of it.

In the Advance.—In the case when guns are under regimental direction, let it be assumed that a cavalry regiment forms the screen to an advancing division, and that its central patrols are completely checked by fire, but cannot ascertain the enemy's strength. On report being made, the commanding officer brings forward the machine guns. Their fire should suffice either to drive away the enemy, to force him to show his hand, or to hold his attention, thus facilitating a turning movement. (Page 8, "Rifle-calibre

Machine Gun Tactics," Lieutenant Colonel W. D. Bird, D. S. O., Aldershot Military Society, November, 1904.)

Cavalry and Machine Guns on the Offensive Against Infantry.—The division is sent to make an enveloping attack, the cavalry covers the outer flank; the machine guns are with their cavalry. The cavalry through some error has failed to swing out far enough and now runs into a hostile infantry command holding, perhaps weakly, one of the key points on the flank of the enemy's position; an attack is necessary. What use is here to be made of the machine guns, and where should they be found? The attack requires immediate action; it is farcical to attempt to charge mounted against the front of the position; it would seem reasonable, under such circumstances, to employ the machine guns and the advance guard dismounted to make the secondary attack, while you swing out around the flank and by rapid movement come in with the main attack, mounted if possible, against the enemy's flank and rear. In a cavalry command of the size employed, one regiment, the place for the machine guns would appear to be with the advance guard, cavalry combats being short.

Cavalry combats should be short, else due use is not made of their mobility. The cavalry should endeavor to approach its objective in such a way that it should be able to start its action, except on an open plain, at a shorter distance than 1000 yards more or less, otherwise infantry could do the work more effectively. As Trench says, "As dismounted cavalry cannot be advantageously employed in long sustained combats, whatever is to be done should be done quickly." The machine guns seldom have time to occupy more than one good position, the secondary attack or the feint attack is more often dismounted than mounted, more need there is of infantry fire with the advance guard, for it most often makes the secondary attack; hence, according to our original hypothesis, the bulk of the machine guns should be with the advance guard.

Cavalry and Machine Guns Against Cavalry.—All cavalry combats mounted are of such duration that the machine guns, unless with the advance guards, would be unable to come

into effective action. Take this particular instance, our regiment of cavalry mounted and the machine guns suddenly come in view of a regiment of hostile cavalry, also mounted, the distance separating the two forces being 800 to 1000 yards. A reasonable course of action, the ground favoring the same, would be at once to dismount the machine gun and open fire; the entire regiment mounted would turn off towards the front and one flank. The enemy would thus be forced to turn to attack either the machine guns or the regiment of cavalry. If he attacks the one, he will be subject to flank attack by the other; if he does not attack, during the time of his indecision and withdrawal he will be subject to the fire of the machine guns; if he dismounts a part of his force to oppose the machine guns, he will be by so much weakened when attacked by the regiment. This is very similar to one of Forrest's plans, which was to dismount a part of the command to receive dismounted the charge of the opposing cavalry, meanwhile occupying with the other part of his force a position from which he could charge the flank of the charging enemy. So in the general case, when our cavalry runs up against hostile cavalry while operating on the enemy's flank, an attack, a retreat or a containing action become necessary, where should the machine guns be and where should they be used? If the attack is made mounted, the machine guns with the advance guard can be used as just indicated, they can join the reserve or they can play the part of horse artillery. If the attack of our division is successful, the infantry and its machine guns would be rushed forward to hold the captured position, while the cavalry with its machine guns, or rather the machine guns of the cavalry, can be run up to an effective flank position from which they can rake, with their fire, the retreating columns. Suppose, however, that a retreat is necessary, the machine guns with the cavalry are immediately available for dismounted action against them; their flanks protected by friendly cavalry, it would be utterly impossible for the enemy to make a mounted charge, and the hostile cavalry will be forced into the slower method of dismounted or combination attack, meanwhile giving to the defeated troops an

opportunity to re-form behind the rallying place thus afforded by the machine guns. Should it be necessary for the cavalry to make a self sacrificing charge to gain time, the machine guns would, like artillery, take up a position behind which the disorganized cavalry could, to an extent, re-form.

It should not be hazardous for the bulk of the machine guns of the cavalry to be used with the advance guard, for they can come into action in less than a minute in the case of the Maxim, and as quickly as a rifle in the case of the rifle mitrailleuse. In the German Drill Regulations for the use of the machine gun batteries, the following, apropos to the use of the machine gun with cavalry against cavalry, is found: "When a forward movement by the cavalry is contemplated, machine gun batteries must be placed in position as early as possible in order that they may support first the development and then the attack. A position somewhat to the front and to the side of the advancing cavalry is suitable, because it enables the battery to continue the fire uninterruptedly up to the moment the troops clash, and to prevent the enemy from executing turning movements. It is desirable that the position be protected from direct attack. This, however, is of secondary importance compared with the fire effect."

Machine guns with the cavalry will be used in all pursuits, for, more mobile than the horse artillery, they can be used in places that the artillery could never reach, and they can be used profitably in the general duties of the horse battery in pursuit.

Machine guns will be used by the cavalry to assist it to fill a gap in the line of battle, as Napoleon employed his cavalry at Wagram; to hold a position until the arrival of infantry, as Buford's cavalry did at Gettysburg; to cover a retreat and to hold or force a defile. Cavalry with machine guns is more than ever cavalry pure and simple, for it is given greater resisting power with less loss of mobility. Cavalry machine guns furnish a ready means for the temporary protection of artillery from hostile infantry, and they can even be used directly with the artillery when its duty lies in short range firing.

The following is the English idea of the use of the Maxim machine gun (not the rifle mitrailleuse): "The guns are also best retained as a reserve in the hands of the superior commander, ready to crush the resistance of small bodies by a storm of bullets; to prepare or meet an assault or counter attack; to check a turning movement; or to establish possession of positions from which the enemy has been driven. They may, however, if circumstances demand, be employed (and these will be the more frequent uses with the rifle mitrailleuse or automatic rifle).*

At long range, to take advantage of a favorable target, but as soon as the desired effect has been produced should be withdrawn from action.

At effective range, to cover the advance or retirement of troops; to bring enfilade or oblique fire to bear against portions of the enemy's line; to deny the passage of defiles; to produce a great volume of fire from a narrow frontage, or to give effect to holding engagements or feints.

In pursuits, to act against the enemy's flanks. In defense, when disposed in pairs, to flank salients, cover obstacles, etc.

The most striking use of machine guns with the cavalry in recent times was that of the Second Japanese Cavalry Brigade, at the Sha River, "where this brigade, with its machine gun company, defeated Liubavin's infantry reserve, near Taotingshan, and thus greatly aided the Japanese in the neighborhood of Pensihu, who, up to this time, had been hard pressed."

To return to how the machine guns should be used in some of the cases before mentioned.

Cavalry Dismounted and Machine Guns Against Cavalry.—The machine guns, when the divisional cavalry takes up a defensive position, should be placed on the flanks or at the key points of the position, preferably on the flanks, so as to have the greatest possible azimuth of fire over and to prevent the immediate success of sudden hostile attacks on the flanks. Here they may be held as a kind of reserve, so that their fire may be used at the decisive moment in case an attack is made

* Words in parenthesis are mine.

directly against the front of the position. Here, on the flanks, they are available for a counter attack if the enemy, by too great an extension in the attack, exposes his center to penetration, for they are immediately available to hold off a part of the enemy's force while the other part is attacked by all available troops. Sometimes it is advisable to hold the machine guns in reserve to reinforce a threatened point or to occupy a suitable position to cover the withdrawal of their own cavalry, and this use in reserve we have seen advocated by the English. If the division forms part of a long line, the cavalry regiments on the flanks should retain their machine guns. The cavalry machine guns of the division in the center should be concentrated and form a mobile reserve, or they may remain with their regiments. This mobile reserve would probably never be used as a whole, but a sufficient number of guns might be detached to accomplish the desired result.

Machine Guns Against Machine Guns.—As the machine guns require more or less of a broad and deep target (they require at least a line to be fired at), they cannot be opposed advantageously machine guns to machine guns, then how are they to be used? An attack of one force with machine guns against another with machine guns would possibly be as follows: The advance guard making the secondary attack would advance in a formation offering as thin a target as possible to the fire of the enemy's machine guns; the machine guns of the attacking cavalry should be sent all together to one flank or the other of the enemy's position. The cavalry, operating as it does on a flank, will usually find a flank to operate against, and its business should seldom require it to force its way through the enemy's line. The main attack will, as a general rule, be made from the outer flank of the machine guns with the intent of rendering unavailable the fire effect of such of the enemy's machine guns as are distributed along his line. By utilizing the machine guns as indicated, they will not cover or be covered by the attack of the advance guard; they will be between and in supporting distance of both the main and secondary attacks, and they may not have to change their position. The

enemy's machine guns should not be directly attacked by any line of skirmishers or any formed body of troops, as by so doing they will furnish just the target that the enemy desires. To put the machine guns out of action, numerous small patrols must be sent out, and they must work their way around the enemy until they can reach a position from which the gunners can be picked off with the rifle. If the cavalry is being attacked, the patrols should be larger than if infantry were being attacked, so that they can overcome the similar patrols of the enemy.

Cavalry and Machine Guns on the Offensive Against Artillery.—Here it is useless for either the machine guns or the cavalry to attempt to attack in front, so the endeavor should be, from the very first, to keep in concealment, to gain a position as close as possible to the flank of the artillery for the machine guns, and to charge with the main force of the cavalry from the flank and rear, fire to be opened by the machine guns when the cavalry has been discovered or has gained a place from which it can deliver the charge. Any attempt to move directly against the front of the hostile artillery would be foolhardy.

Cavalry and Machine Guns Against Cavalry and Horse Artillery.—Here the use of the machine guns in an attack directly against the enemy would but subject them to a much superior fire and possible destruction, unless the machine guns have the opportunity of opening on the artillery while it is yet limbered. In the usual case, both forces of cavalry being mounted, the machine guns should not attempt to engage the artillery for obvious reasons. Most often the enemy's artillery will be found on his inner flank, by its fire endeavoring to prepare the way for a charge, but our machine guns should be sent to occupy a position on the enemy's and their own outer flank, from which at close range they can deliver a fire into the enemy's charging troops just before the contact of the charge. They will, of course, be in danger from hostile cavalry patrols, but their chances for effective use on this flank are greater than they would have been had they moved directly against or directly opposed the artillery.

Some of the tactical situations given herein no doubt would be unusual, but they have been chosen with the idea of showing that the machine guns to be of effective use *with cavalry* must be with the leading units thereof, and must be brought from the very first into the fight.

Machine Guns With the Outposts.— Machine guns employed with an outpost cavalry or infantry, should be placed on the line of resistance; during the day, to occupy the key points of the position, to command a defile or important road or hill; during the night, the machine guns should be placed with the supports on the principal roads, unless, during the day the exact range, direction and elevation of an important point, a bridge for example, have been ascertained and the gun has been left in position to command the same.

Machine Guns With the Rear Guard.— Under this heading we should consider our particular proposition from two points; when the regiment of cavalry and the machine guns form the entire rear guard, and when they form only a part thereof. Taking the former of these two cases, the fact that the friendly cavalry has been able to put itself again between the main body and the enemy, indicates to a certain extent that the retreating forces have gained sufficient distance to do away with the necessity for further obstinate retaining actions, the cavalry being used primarily to keep touch with the enemy and from time to time to delay him for brief periods. The flanks in a retreat being particularly dangerous, movements of the enemy may be expected around them. Nowhere is a very obstinate fight expected to be made, but opportunities will come and quickly pass during which long range infantry fire might have been used, hence it would be reasonable under such circumstances, to subdivide the machine gun company and assign its various platoons to the flanks of the rear guard and to the support. Considering the latter of the two cases, the regiment of cavalry forming only a part of the rear guard of the division, the machine gun would of course remain with their cavalry. Cavalry with the rear guard during the occupation of a retaining position, necessarily operates on the flanks. Its uses there are so various, both offensive and defensive, that a discussion of them here is not indulged in, but in laying down a general rule for the use of machine guns with the cavalry under such circumstances, it would be well to remember that these guns being less mobile than the cavalry itself should be used on the best protected flank of the command, and with that portion of the command which will have the least movement to make during the attack or during the defense. In taking a position to cover the exit of a defile and prevent the debouching of the enemy therefrom, the artillery being in the center of the circumscribing line, the infantry on the flanks thereof, the cavalry well on the flanks, and so placed as to be able to charge the debouching columns, it would be well to attach the machine guns to the outer flank of the infantry and thereby leave the cavalry unhampered, but giving to it a rallying point. Of course the ground would determine the tactical position of the troops, and the foregoing is only a statement of a possible case.

With a convoy the machine guns should be kept in reserve with the main portion of the command.

We have now come to the choice of a suitable gun for use with the cavalry. We have seen that a machine gun for the cavalry has the chief function of securing increased infantry fire with least loss of mobility, and that its fire is usually limited to that phase of machine gun activity between the ranges of 500 and 1100 yards.

How can this required mobility be obtained?

By the choice of as light a machine gun as possible, capable of being easily and rapidly transported, of being brought quickly into use, and of being as quickly withdrawn.

How can increased fire for ordinary use within 1100 yards be secured? By the choice of a weapon giving such increased fire, but not necessarily equipped for accurate fire beyond 1100 yards. How is the loss of mobile strength to be reduced? By the choice of a weapon requiring but few men to operate it.

According to the "Present Status of the Equipment of the Armies of the World with Machine Guns" (October, 1906), the machine guns in use among the various cavalry organizations are as follows:

Germany uses for her cavalry the Maxim, with detachable sledge carriage, which is transported on a two-wheel cart.

Austria-Hungary is testing both the modified Maxim and the Swoda. The machine guns with the cavalry are mounted on a sledge similar to that of the Germans, and are transported on a wheeled carriage. The mountain machine gun has the tripod mount. The tripod mount was not found satisfactory with the cavalry.

Italy is testing the Maxim and the tripod pack outfit and it is found very satisfactory.

France has adopted the Hotchkiss, and seems divided between the use of the two- and the four-wheeled cart for the cavalry gun. It is reported elsewhere that Russia, Denmark and lately England have adopted the rifle mitrailleuse ("Rexul Gewar") for their cavalry machine gun.

Of these guns the Maxim, the Hotchkiss and the rifle mitrailleuse, one or the other is employed by the leading armies of the world. Of them the rifle mitrailleuse is the lightest, weighing but sixteen and one-half pounds. It is the easiest to transport, being placed in a boot like a carbine. It can be as quickly brought into action as a rifle and as quickly withdrawn. It is as accurate as any other of the machine guns within the ranges for the action required by a cavalry combat. It requires fewer men to operate than any other gun, and therefore leaves more men for mounted work. It presents less of a target than the other machine guns. It can not only accompany the firing line, but several of them can form a firing line of their own. From which, it can be judged, that it best fulfills the requisites of a gun required for the cavalry. A brief description of this rifle will enable one to understand better these qualifications. In appearance the Rexul rifle is very like our magazine rifle. The magazine is of tin, and "its general outline is that of a segment of an annular arc of forty-five degrees; it holds twenty-five cartridges." The magazines are carried in leather pouches holding eight. Each ammunition horse carries eight or twelve of these pouches, six on each side of the pack saddle. The gun is fired through a fork from a prone position. The

objections to this gun are: 1st, It fires only a maximum of 200 shots per minute. 2d, It receives from the gunner more of his inaccuracies due to nervousness, etc., than does the Maxim, for the latter can stand alone, while one of the points of support of the gun in question appears to be the shoulder of the firer. 3d, It has less of a command than the other guns, for it has to be fired from a prone position, and in high cane or weeds would be put out of action unless a firm support could be found.

What should be the composition of a machine gun unit? It is a self-evident truth that if you place an automatic rifle into the hands of a soldier, you must be careful to select one who is able to use it to the best advantage. The men for a machine gun detachment, therefore, should be those who are amenable to the highest and strictest fire discipline, who are expert riflemen, and who are capable of becoming skilled in the repair of the machine gun; and in war, service with the machine gun is more than ordinarily hazardous. To insure all this, the men should all be picked men; they should receive increased pay, and distinctive insignia should be given them.

The rifle mitrailleuse, "Rexul Gewar," or automatic rifles no doubt would prove very profitable if distributed among the various troops, as it would then render the fire of the sum total much more effective. These guns for the present should be used in a unit for the following reasons:

1. Peace training, more or less technical, in their proper use and repair can best be accomplished by combining them into an administrative unit.

2. "On account of the short term of service, everything which complicates their (infantry and cavalry) training must be kept away from the infantry," and more particularly from the cavalry.

3. The frailty of these guns and the ever present fear of their being put out of action require that they be used at least in pairs.

4. The chief use of machine guns with the cavalry, to secure a certain amount of fire while dismounting the least

number of men, may require a grouping of several of these guns to obtain the desired amount of fire.

5. Such a grouping of machine guns being necessary, they should be employed and organized in groups. Their unit commander should be under the immediate direction of the highest commander, who would assign the guns as occasion required, to a particular or to particular duties.

6. The supply of ammunition to the firing line is already difficult; how much more difficult would it be rendered if machine guns were distributed indiscriminately along the line? This supply is much simplified by grouping the guns.

7. The objection that the use of machine guns in groups renders them targets for the hostile artillery, is not true to so great an extent with the rifle mitrailleuse, for at a distance they can not be distinguished from rifles.

"The main contentions for company organization are that on the one hand control, direction and concentration of fire are facilitated, which must make for efficiency; as an offset vulnerability is increased, but this disadvantage is more than counterbalanced by enhanced effect."

8. When armed with the rifle there seems to be a tendency among our own cavalry, and foreign writers find the same among their own, to place chief reliance in dismounted action. With the machine guns distributed among the various units of the command, the temptation to use dismounted action is even greater. By giving to a well defined unit, such as an automatic rifle or rifle mitrailleuse company, the brunt of the dismounted work and using the remainder of the regiment for dismounted work only when absolutely necessary, the mounted portion of the regiment will come to realize that their chief reliance must be put in their mounted work, else they become naught but mounted infantry, and that the dismounted work must be left as far as possible to the machine gun company.

It is unnecessary to speak of our present machine gun organization. Colonel Macomb has truly said: "Just now these platoons seem to be beggars and orphans, meeting with many rebuffs, and not at all popular, having no special

home of their own and living like a pauper family, broken up and divided for support among its kinsmen."

The rifle mitrailleuse being chosen as the best gun for cavalry, there is no question of pack or cart transportation for the gun itself, as it would require one horse in any case, but the subject may be considered from the standpoint of facility of ammunition transport. In addition to the fact that pack animals can be used in any kind of country, there is a benefit in having organizations in the service, such as mounted batteries, which in time of war would furnish instructors at least for the pack trains which will then become necessary, but which are allowed to disappear in time of peace. One objection that has probably been raised to the use of pack transportation is the disproportionate amount of forage consumed by the mules for the amount of ammunition that they transport, but a regiment of cavalry would be unable to operate in country which would be unable to provide forage for a few extra pack animals. As machine guns on packs can be brought into action in less than a minute, the advantage of the immediate availability of guns mounted on carts is slight.

Without advancing other reasons pro and con, of which there are many, let us come to the question, What then is the proper organization of the rifle mitrailleuse unit?

First, these guns should be used in pairs; this is conceded by all. It will be necessary, where machine guns or automatic rifles form the bulk of the dismounted firing force, to make the fire continuous. To accomplish this, the guns becoming overheated will require a reserve of two guns for every two in action. A foreign writer in advocating the formation of a reserve of two guns for every two in action, says: "The delicate construction of the weapon must be taken into consideration; since trouble can easily arrive at the decisive moment, a reserve must be provided as far as possible."

A rifle mitrailleuse may be said to equal about twenty skirmishers. The secondary attack of a regiment of cavalry dismounted would ofttimes not exceed one or two troops. Say two troops, this would be the equivalent of ten rifle mi-

trailleuses. To them should be attached a certain proportion of mounted men to be sent to the flanks and rear to give timely warning; and in attacking hostile machine guns these men can be used to pick off the gunners. As the proper use of the rifle mitrailleuse is still in doubt, and military observers lean much to the idea that the use of machine guns is limited to opportune times, it may be deemed necessary to accompany the guns by a suitable dismounted cavalry force, whose fire is to be employed to carry the attack forward when the machine guns are unable to fire.

Assuming a reserve to be necessary, by putting six guns in action and holding six as a reserve against breaks and for a final effort, or by alternating in platoon every twenty-five shots, a continuous fire can be maintained. An officer can not superintend more than four guns; this will require three platoons. To accomplish the foregoing, no better organization for the platoon can be devised than that recommended by Colonel Macomb, and based upon his observation in the Russo-Japanese War:

"With the Danish gun (Rexul Gewar) it would be possible to get up a fighting battery (platoon) of four guns, as follows: One lieutenant in charge, two non-commissioned officers, four gunners (each with 400 rounds), four ammunition horse drivers (with one pack horse each, carrying 2400 rounds), one armorer; total, one officer, eleven men and sixteen horses; 2800 rounds per gun. In addition to the above there should be an ammunition train with eight mounted men and eight pack animals carrying 2400 rounds each, and a four-horse wagon for baggage, and 9600 rounds of reserve ammunition, requiring in all ten men and twenty animals. This would make the ammunition supply 10,000 rounds per gun."

This would give us a machine gun troop of four officers, eighteen non-commissioned officers and fifty-five men, ten of whom would be used for the reconnaissance in the immediate vicinity of the guns, in picking off hostile gunners and as range finders. It is worthy of note that the majority of the great powers of Europe, recognizing the advantage of now and then detaching a platoon, employ their machine guns in companies, or rather organize them into companies.

It is to be noted here that the organization herein referred to is for cavalry regiments acting on the flanks alone. Possibly for cavalry operating under other circumstances, the foregoing organization would be too large, but it is to be remembered that the company herein provided for mans guns equivalent in firing power to four Maxims only.

THE MACHINE GUN PLATOON: SHOULD IT BE RETAINED AS PART OF THE REGIMENTAL ORGANIZATION?

By Colonel JAMES PARKER, Eleventh Cavalry.

WITH a view to testing the capabilities of the machine gun, two tests were made recently at Pinar del Rio, Cuba, the headquarters of the Eleventh Cavalry.

I will say in advance that I am confident that the machine gun platoon attached to this regiment is generally, in efficiency, equal or superior to the average machine gun platoon in the service. It is commanded by Second Lieutenant Emil P. Laurson, Eleventh Cavalry, a zealous young officer, who has worked hard to make his command a good one. It is quartered by itself, has its own stables and its personnel is good. It fired during the last season in practice, 750 rounds, and during the present season, 1000 rounds. On January 7, 1908, a test was had with these guns, firing at the "L" target at 1000 yards. Five minutes were allotted for firing 800 rounds. This time was exceeded. To fire 750 shots ten minutes were required. The percentage of hits was sixteen. The conditions for seeing the fall of the bullets were perfect, but a large portion of the bullets struck in front of or under the targets. There was considerable delay, owing to the jamming of the belt, necessitating the rearranging of the mechanism and relaying the gun, which lost its aim after every few shots. As the percentage of hits in collective firing of a troop at 1000 yards is ordinarily about two or three times the above figure, it seemed probable that the fire action of a platoon of cavalry was likely to be more effective than that of the machine gun platoon.

To determine this, a test was made on February 6, 1908; range 1000 yards. The target was "L," composed of sixteen standing, sixteen kneeling and sixteen prone, arranged in mass. The machine gun platoon was composed of twenty-

one men, one packer, twenty-two horses and ten mules, with two Maxim machine guns. The cavalry platoon was composed of twenty-two men and twenty-two horses, with Springfield rifles, model 1906, seventeen men to dismount to fight on foot, the remainder to act as horseholders.

Conditions.—The two organizations drawn up at the firing point mounted, at a signal were to dismount and go into action, time to be taken, in the case of the battery, from the command "In action," to the cessation of firing, the battery to fire 500 rounds.

In the case of the cavalry platoon the elapsed period between the command for dismounting and the signal to cease firing, to equal that taken by the machine gun platoon.

In case of cessation of firing by either gun of the machine gun platoon, due to defective mechanism, or other causes, the period thus unemployed to be deducted from the total period; the remainder would thus represent the total time taken in going into battery and firing, were the fire continuous.

The twenty-two cavalrymen of the cavalry platoon were all sharpshooters from Troop L, Eleventh Cavalry. Their effectiveness of fire was therefore slightly greater than would ordinarily be obtained. Each of the two guns fired 250 rounds. The average time of fire of each of the two machine guns was three minutes and thirty seconds, deducting interruptions. The machine gun platoon dismounted and opened fire in one minute and ten seconds. The cavalry platoon took thirty-three seconds. In the case of the machine gun platoon the elapsed time from the command "In action," to the completion of firing 500 rounds, supposing there to be no break in the fire, was four minutes and forty seconds, this being the time allotted to the cavalrymen, who in this length of time dismounted and fired 547 rounds, an average per man of thirty-two shots.

Hits, machine gun platoon	58
Hits, cavalry platoon	239
Figures not hit:	
Machine gun platoon	29
Cavalry platoon	1

OBSERVATIONS.

The machine gun platoon dismounted and went into action with remarkable promptitude. As soon as the firing commenced troubles began. Gun No. 1 was fired first. First, a few shots were fired for range, and the gun corrected. Then twenty or thirty shots were fired, with fair accuracy at first, the recoil soon changing the aim so that the bullets began to strike low or high. The gun was stopped, and this was corrected quickly, and twenty or thirty more shots fired with the same result. The corrections were made quickly, but the sum of them all was considerable in length of time. At times there would be a stoppage, due to defective mechanism. This would be remedied sometimes by a quick movement, but at other times it would necessitate an investigation, which occupied several seconds. When the firing was nearly completed on Gun No. 1, a head of a bolt came off and had to be replaced, occupying four minutes and thirty seconds. All these interruptions, as far as possible, were noted and deducted from the total length of time. Interruptions due to relaying were not always taken when short. In the case of Gun No. 2, the conditions were the same, except that this gun seemed to leave the mark more readily than Gun No. 1, and the interruptions due to relaying were more constant. Taking out the serious interruptions, the average rate of fire of the two guns was 143 per minute.

The normal rate of fire of the Maxim gun is not known. The normal rate of fire of the Colt's automatic gun is put down as 400 rounds per minute.

The observer was at once struck by the fact that with these guns continuous fire is impossible, owing to the necessity of frequently re-aiming and relaying the gun. After a few shots the gun is invariably deflected from the line of fire. The firing has to be stopped and the gun relaid.

The fire of the platoon of seventeen men composing the firing line of the platoon of cavalry was, on the other hand, continuous and effective, the men firing at the rate of over ten shots per minute, and shots striking well within the targets. At the same time I know that the effectiveness of this fire was not much greater than that of the average firing line

of the troop. Only one figure escaped hits. The concentration of the fire of the machine gun, however, caused the bullets to be delivered within a limited space, and twenty-nine out of the forty-eight targets were unhit. I enclose table showing the results of this competitive test:

COMPETITIVE TEST: EFFECTIVENESS OF FIRE.

MACHINE GUN PLATOON (22 MEN), AGAINST PLATOON OF CAVALRY (22 MEN).

Range 1000 yards.
Target "L."
Time: Equal, determined by length of time necessary for machine gun platoon to go into action and fire 500 rounds, 250 rounds per gun.
Arms: Two machine guns against seventeen rifles. (The remainder of the cavalry were horseholders.)

	Machine Gun Platoon.	Platoon of Cavalry.
Time from command for dismounting to commencement of fire	1 min. 10 sec.	33 sec.
Time from command for dismounting to completion of firing	8 min.	4 min. 40 sec.
Time consumed in firing, less interruptions, due to relaying and defective mechanism—		
Gun No. 1	2 min. 56 sec.	
Gun No. 2	4 min. 5 sec.	
Time lost through interruption—Gun No. 1	5 min. 4 sec.	
Gun No. 2	1 min. 30 sec.	
Average time of continuous fire	3 min. 30 sec.	4 min. 7 sec.
Elapsed time from command "In action" or "To fight on foot" to completion of fire, supposing there to be no break in the fire	4 min. 40 sec.	4 min. 40 sec
Number of rounds fired	500	547
Score hits	58	239
Percentage of hits	11.6	43.7
Figures not hit (out of 48)	29	1
Number of shots per minute of firing	143	140
Number of hits per minute of firing	15	58
Percentage of shots wasted	88.4	56.3

NOTE:—Test made pursuant to General Orders No. 216, War Department, October 23, 1907, amending Small Arms Firing Regulations.

The conclusions I draw from these two tests are:

1. The rate of effective fire of the machine gun is grossly exaggerated; there is no comparison between the theoretical rate and the actual rate when accuracy is demanded.

2. The accuracy of the machine gun is diminished by the fact that it "fires at the flock," and not, as does the rifleman, at the individual. At the same time its fire is too much concentrated and not distributed along the line.

3. Its accuracy is also greatly affected by the impossibility of firing more than a few shots before the gun is moved by the recoil, losing its aim.

4. That, due to inexactness of the aim and the tendency to fall off the target, the gun, even while shooting slowly, must necessarily make scores much inferior in percentage of hits to those of the individual sharpshooter, marksman, or even the first class man. A man cannot shoot closer with a field piece than with a rifle at rifle ranges.

5. That, as regards the number of hits per minute on a target, the machine gun platoon of two guns and twenty-two men is much inferior to a cavalry or infantry platoon of the same number of men. This would be much more the case with a target representing a line of skirmishers.

6. That in action the machine gun suffers a disadvantage in that it cannot utilize cover to the same extent as the individual rifleman. It is also likely to get out of order at critical moments.

7. That, while it is difficult to compare results on the target ground with results on the battlefield, everything goes to show that on the battlefield, under ordinary circumstances, the platoon of infantry or cavalry is superior in effectiveness of fire to the machine gun platoon.

8. While it may be said that better results would be obtained with the machine gun in target practice and in action, with special men and more perfect guns, the fact remains that the above test is more likely to represent *average* results.

9. That the machine gun is exceedingly liable to get out of order, to jam, or to become entirely disabled.

10. That the machine gun takes twice as much time as the cavalry platoon in dismounting and getting into action, and takes much longer in mounting and getting out of action.

11. That since the employment of cavalry in action necessitates its exposure at intervals to artillery fire, and therefore the use of high gaits for long distances, sometimes 3000 to 5000 yards, of which the machine gun is not capable, the machine gun in action will often impede the movement of cavalry, or else be abandoned. With the machine guns cavalry must regulate by the gait of pack mules.

12. That the cost of the ten extra mules, arms and equipment of the machine gun platoon is over $3000 more than the cavalry platoon, and the annual cost of maintenance and depreciation, varying with the cost of forage, is in the neighborhood of $1000.

In conclusion, it may be said, that the machine gun platoon, as compared with the platoon of cavalry, costs more, is more of an impediment to free movement, is slower in getting into action, fires slower, fires more inaccurately, is more liable to break down in action, and is more exposed to hostile fire. At the same time, I believe there is no function of the machine gun platoon for which the platoon of cavalry is not equally effective.

A machine gun in action necessarily becomes the target of the opposing skirmishing line, which, attracted by the noise and plain target, concentrates its fire upon its position. A single modern bullet will wreck a machine gun.

To mount and withdraw while in action, cavalry soldiers run back to where the horses are posted under cover. The horses and mules of the machine gun platoon must, on the other hand, be brought up to the guns, leaving cover for bullet-swept ground.

However much imagination may be impressed by this mowing machine of bullets, the fact remains that battles are still won with men, not machines.

The most efficient rôle of the machine gun is that of a "gun in position," used in defense behind works, each gun to be served by two or three men. It can then be used to advantage.

It is probable that if more ammunition were allowed for practice, the foregoing results might be improved upon. It does not seem probable, however, that better results under ordinary circumstances can be obtained by a platoon with its machine guns than with rifles.

In view of these facts, it becomes necessary to inquire if the machine gun organization as a part of a regiment should not be abolished.

DIVISIONAL CAVALRY.*

By Lieutenant LEWIS S. MOREY, Twelfth Cavalry.

THERE are two important duties that fall to the lot of cavalry in war, *i. e.*, the service of information and the service of security. According to General v. Bernhardi, it is not reasonable to expect the same troops to perform these two duties at one and the same time. Colonel Haig of the British service holds to this view, but really subdivides the latter duty into two parts. Colonel Gough, of the same army, read a paper before some British officers on "The Strategical Employment of Cavalry," which well describes my ideas on these two duties. His remarks were as follows:

"The point that stands out clearest in the application is, that to 'discover,' or the service of information, and to 'cover,' or the service of security, are two entirely distinct functions which must never be confused together, and for each of which an entirely separate body of cavalry must be detailed. Sufficient cavalry must be attached to every division and corps to ensure for them immunity from local surprise; in fact to perform for them the service of security. These bodies of cavalry will be required to make good the front and flanks of the troops up to a distance of two or three miles and to prevent the enemy's patrols penetrating as far as the main bodies, when the troops are either on the march or halted. The number of cavalry attached *for* these duties should be the minimum sufficient to carry them out properly, leaving the remainder of the cavalry to form as large a mass as possible, divided into brigades, divisions, and even corps, to carry on the great strategical rôle of cavalry, namely, the service of information."

* One of a series of papers submitted by student officers of the Staff College, 1908.

On this same point I quote the following from General v. Pelet-Narbonne, in his comments on the German cavalry in 1870–71:

"These duties which fell to the cavalry, were of both an offensive and defensive nature, and must be separately carried out to attain a successful result, *i. e.*, the duty of observation must be fundamentally separate from that of protection. Only the first of these duties properly belongs to the army cavalry, in this instance the cavalry divisions; the second belongs to the divisional cavalry, if these, as in this case, are available in such quantities, otherwise they must be strengthened for the purpose by the cavalry divisions."

Is it best to have divisional cavalry or not?

I have found but one writer on cavalry who goes so far as to say that there should not be any divisional cavalry. An American in discussing the Russo-Japanese War (if I am not misquoting) says in effect that it is a mistake to assign cavalry permanently to an infantry division. There are, I believe, others of our cavalry officers who hold this view, and so I have considered it.

Those who claim that the permanent assignment of cavalry to an infantry division is a mistake, do not, of course, mean that the use of cavalry independently is its only proper use, but rather that there will be a judicious use and economy in cavalry, if it is assigned to divisions only as it is needed. This view is perhaps sustained by the history of our cavalry during the first half of the Civil War. Here the cavalry was first distributed among brigades; later it was scattered among divisions; and in this use it was uniformly unsuccessful. But it must be borne in mind that much of this cavalry was poorly armed, in fact for a long time not completely armed; and again, it was using all the cavalry as divisional cavalry instead of only a portion of it as such. When it was later formed into brigades and divisions and so used independently, it was successful. However, by this time this branch of the service had learned to be cavalry, which it was not at first.

One of the principal reasons for not making cavalry a part of an infantry division is its scarcity, due to the difficulty of

training and the expense, and also from the fact that the losses which cavalry sustains cannot be as readily replaced from reserves as can the losses in the other arms. Serviceable troop horses are more difficult to find than draft animals, and the loss in the former is greater than in the latter. Since it is, I believe, admitted that the army which has the preponderance of cavalry, used independently in a future war, will have the advantage, at least during the stages preceding an engagement, it seems clear that any weakening of the independent cavalry will be a serious detriment to that army. Therefore have no divisional cavalry.

It can hardly be stated that any one of the three arms is more important in war than another, and hence a system of organization which tends to deprive an army of one of these arms is wrong. Now the assignment of cavalry to a division tends to the premature destruction of the cavalry of that army. We do not get rid of this tendency by organizing cavalry brigades, divisions and corps, as is shown by Sheridan's criticism of General Meade's use of his cavalry corps. (Sheridan claims that when he took command of the cavalry of the Army of the Potomac, in the spring of 1864, he found it run down and out of condition by constant picket duty, where infantry could have as well been used, while the Confederates were husbanding their cavalry that it might be in prime condition for the coming campaign.) So I say, we do not entirely rid ourselves of the misuse of cavalry by having cavalry divisions; but by avoiding divisional cavalry organization we do lessen the number of men having authority over cavalry, who have no knowledge of its proper use and of its limitations. Again, therefore, if divisional cavalry is not an absolute necessity, we should not have it in our organization.

It has been made quite clear to us of this Staff Class that an infantry division is a fighting unit, to which should be attached only such parts as are sure to be needed by it in the general case, to the end that nothing superfluous may hinder its fighting ability. Now the greater the train required to supply a division, the more will its efficiency be lessened. Our F. S. R. prescribe seventeen wagons for a regiment of

infantry in the regimental train, and twenty-nine for a regiment of cavalry. About the same proportion would be found in the supply column. In the transportation of a force by rail, this same book allows one battalion of infantry to one train, whereas only two troops of cavalry can be sent by one train. This cannot be said to argue against divisional cavalry, because the duties which this arm will perform, if not accomplished by cavalry, must be performed by something akin to cavalry, as, for instance, mounted infantry, which would require the same transportation. But it urges a minimum assignment of cavalry to a division.

But why is divisional cavalry not necessary? Because detachments of cavalry may be made to a division as required. I am of the opinion that if there is no serious objection to the plan of assigning cavalry to divisions as it is needed, that we should not have divisional cavalry, particularly as we have so little of this branch of the service in our army, and considering the fact that cavalry cannot be organized and trained in a short time.

Quotation from "Cavalry on Service," by General v. Pelet-Narbonne:

"Further reason for the ill success of the German cavalry lay in their faulty distribution, for, on the one hand no cavalry was permanently set apart for the infantry divisions, but only as occasion demanded, * * * and on the other hand in the wrong use which was made of the cavalry divisions, as they were always kept back behind the infantry, and retained as reserve cavalry, or kept for use on the battlefield."

I am unable to state a very strong reason for the need of divisional cavalry during a combat. Lieutenant Colonel Bonie, in commenting on the French cavalry during the War of 1870–1871, says in effect, that it was expected that the divisional cavalry would remain under shelter until the fire of the infantry made it possible for them to charge, then if not successful in the charge, to return to its cover. But in practice this did not work out. Hostile shells searched all cover near the battle ground, and even the escort for the command-

ing general had to be reduced, as its presence made him a living target.

"Having been personally attached to an infantry division, I studied with interest how this system worked, and found that, with the exception of a little scouting, there was literally nothing for the remainder of the regiment to do, and we were generally in the way."

But the time that a division will be in combat as compared to the time it will be on the march, in bivouac, or in camp is very small, and I think in any of the latter positions, divisional cavalry is of great use. It may be said that the independent cavalry will relieve the necessity for divisional cavalry in these cases by the screen which it forms. Von Bernhardi points out that the great use of the independent cavalry will not be in screening its own army directly, but that it must be free to seek the enemy or the enemy's cavalry, and that this duty is generally incompatible with screening. Sheridan tried to make this principle clear to General Meade when he wanted to lessen the wasteful detailing of his cavalry and use it to operate against the Confederate cavalry. Then we should not count on the independent cavalry to screen the immediate front of our divisions; and as this screening or security is one of the two great duties for which cavalry exists, we must, if we have no divisional cavalry, assign cavalry for this duty, and as above stated there will be much more time when it will be necessary to make the detail than when not necessary. Consequently, the cavalry detailed to accompany a division, will be away on detail much more than it will be for duty with the independent cavalry from which it is proposed to detail it. I believe the detail system in such cases to be a bad one. We have all had to contend with it in our own companies. If the commander of the cavalry knows just what force he can count on and has it under his control to keep in proper condition, he can work with greater hope of fulfilling the great strategical rôle assigned to him than he can if his troops are continually coming and going because of being engaged as divisional cavalry. Then too, some cavalry permanently assigned to a particular body of troops, would work more efficiently if

familiar with them, and probably with greater interest. I am convinced that the best organization of an infantry division includes the three arms.

How much divisional cavaly should we have?

The quotation from Colonel Gough, given above, says to have the minimum necessary to properly perform the duty, and this is borne out by the arguments just given. In an article on "The Cavalry in the Russo-Japanese War," by Count Gustave Wrangel (Austrian cavalry) the writer brings out clearly as a fact, that the Japanese, who were weak in cavalry, made a grave mistake in assigning a regiment instead of one and one half squadrons to each infantry division as divisional cavalry, and then organizing the cavalry thus set free into a division to augment the two independent cavalry brigades which they had originally. A Captain Rodic, of the Austrian General Staff, in a subsequent article replying to Captain Wrangel, states that the Japanese divisions could have done nothing with less than three squadrons. However, Count Wrangel in another article gives the impression that Captain Rodic agrees to his principal argument advanced for lessening the divisional cavalry. In this reply Count Wrangel makes this statement: "For an army comparatively weak in cavalry the following question is not the right one: 'Can an infantry division utilize to advantage three or more squadrons?' but rather, 'What conduces more to the final object or to the decision, a strong independent cavalry or a strong divisional cavalry?'" This is a question which should be well considered by those studying a war organization for our army. I believe that a strong independent cavalry is more conducive to the final object or to the decision, and so I advocate making divisional cavalry numerically weak.

Before we can intelligently come to a conclusion as to just how much cavalry to place in our division, it will be necessary to consider more fully what are the duties to be performed by this cavalry. In our F. S. R. I find divisional cavalry discussed in the chapter headed, "The Service of Information," thus indicating that the securing of information is its principal duty. It is not believed that this is its

principal duty. Looking further, in the chapter headed "The Service of Security," I find that cavalry is discussed as forming a part of advance guards, flank guards, rear guards, and outposts. The necessity of such a duty is the reason for the existence of divisional cavalry. Under the chapter of our F. S. R. headed "Combats," I find the cavalry given two positions, one on the flanks and the other in rear as a reserve. De Negrier, who believes in the use of cavalry dismounted, lays stress on its use in battle as a mobile reserve because of the long battle lines. Under the discussion of divisional cavalry, our F. S. R. gives the following uses that it may serve:

1st. Keeping up communication between the covering troops and the main body whether on the march or at the halt.

2d. Exploring in the vicinity of a command and securing such data concerning the roads and resources of the country as may be necessary for the immediate use of the commanding officer.

3d. Endeavoring to maintain connection with any independent cavalry out in front, in the absence of independent cavalry gaining contact with the enemy, or exploring the country to a considerable distance.

4th. When patrols are not strong enough to accomplish their object, portions of divisional cavalry may be pushed to the front.

5th. Driving off hostile patrols; using small patrols to call in patrols no longer useful.

6th. Establishing observation posts.

7th. When not needed as divisional cavalry it may be employed as independent cavalry.

This enumeration of uses and those referred to above, cover in a general way all the possible uses in which divisional cavalry could be advantageously employed. And they fall mainly under the general head of the service of security as compared to the service of information. It is for such a service that we must make our estimate of the proper proportion of cavalry to be assigned to a division.

Now let us see what proportion of cavalry other countries have. The Germans have one cavalryman to twenty infantrymen. On this subject Von Schellendorf says:

"It is quite possible to imagine cases in which, either from the conditions of the combat or from the nature of the ground, the cavalry regiment attached to a division cannot be employed at all, or only to a very limited extent. Nevertheless in view of the varied duties which have to be performed by divisional cavalry on the line of march, in bivouac, or in quarters, even when the duty of reconnoitering and screening the whole army is being performed by cavalry divisions, we cannot hold that an effective strength at the outset of a campaign of 600 sabers (the establishment of the German cavalry regiment of four squadrons) is too great for an infantry division of some 12,000 bayonets. Even if, as some people think, a much smaller force of cavalry would suffice, it would be most undesirable to divide a body like a cavalry regiment permanently."

The French have one cavalryman to thirty-two infantrymen. The Austrians have about the same as the Germans. It is believed that they vary from 400 to 800 cavalrymen to a division. I am informed by Lieutenant Landa that the Mexicans have one cavalryman to fifteen infantrymen. The Japanese during the recent war, had one cavalryman to twenty four infantrymen. It will be remembered that previously it was stated that the Japanese made a mistake in assigning so much cavalry to a division, for they thereby reduced their already small force available for independent action.

Our present F. S. R. provide for one cavalry regiment to a division; that is, one cavalryman to about twelve infantrymen. From this it is seen that we, who are so weak in regular cavalry, or for that matter weak in a regular army, have in our present contemplated organization, more cavalry to the division than any of the above mentioned powers. I understand that these F. S. R. are now undergoing revision and that it will be recommended that only one squadron be assigned to a division. Such an organization would give us about one cavalryman to thirty-six infantrymen. We would

be more nearly in accord with what the French have than we now are, but would not be following the judgment of the Germans. However, I think it better to vary from what they have on this side than on the other, and it will be remembered that Von Schellendorf implies that less than one to twenty might be proper except for the inadvisability of dividing a regiment. I see no reason in the different conditions of locality and armament between our country and those mentioned, which would warrant us in disregarding entirely what they have found to be right on this subject.

There should be sufficient cavalry with a division to enable details from this arm to accompany any of the many detachments it may be wise to make for its own security, or immediate information. It should be the exception rather than the rule that independent cavalry would be called upon to make such details possible. This is important. In considering the question, how much cavalry to assign, we must also bear in mind the fact that in order to keep horses in good condition they must have rest more regularly than man. This for the reason that man can work on a nervous energy, while a horse cannot. And also, man, though commanded, is still his own judge as to when he has worked to the limit of his powers; a horse is not, and one day of overexertion on the part of a horse forced to it by his rider, nine times out of ten will ruin that horse so far as cavalry work is concerned, unless time is given for his rest and care. It may be said that I imply that the cavalryman is not a judge of what work his horse can do, or he would not overwork him. But here you forget that the man is under orders, which may be the most exacting, and may require that he push his horse to the limit. This he will do, and then if he has relief and can give his horse care and rest, he will be good for the same work again in a short time. If, however, he tries to continue, with little rest or care, on such work, the horse will be useless henceforth. Not to guard against such conditions would be short-sighted indeed, for you would organize so as soon to destroy your divisional cavalry, with very little return.

In the case of a rear guard to a division closely pursued by the enemy, it is not unlikely that all the cavalry will work all the time. If it is destroyed by work or otherwise, that is what it is there for, only so that the division is saved.

The following quotation taken from "The Evolution of Modern Cavalry," by a Frenchman is apropos:

"Whatever be the rôle which the cavalry is called upon to play, this rôle is always one of devotion. It is always to gain information for the command, to insure the safety and the success of the troops of the other arms, never for itself, that the cavalry should fight, and, if necessary, sacrifice itself."

The following quotations may aid in refuting any criticism to the effect that I am advocating an easy berth for the cavalry: General C. v. Schmidt, a noted cavalryman, says: "May every leader who has cavalry allotted to him ever bear in mind that this arm is too expensive to do nothing;" and General v. Pelet-Narbonne says, following the above quotation: "It is only in this sense that that unhappy expression, 'the expensive arm,' should be used." The latter also says: "Let us demand great exertions of the cavalry and they will assuredly perform them. We must learn to regard the life of a cavalryman as not so especially precious; we must expect the cavalry to suffer losses when the situation requires it, just as much as the infantry do on many occasions, without being affected, and without making much ado about it."

Now for authority sustaining the suggestion of one squadron of cavalry to a division. Our F. S. R., Par. 100, suggests two troops (less one platoon) to accompany the advance guard of a division.

Out of fifteen problems which I have looked up in Griepenkerl, and in which I believe the cavalry to be used as divisional cavalry, I found one in which a squadron was used in the advance guard of a division, one where three troops were used with a brigade, and one where one troop was used with a brigade, but twelve in which two troops were used with a brigade. These problems cover all the kinds of service that a division would be likely to be called upon to perform, and

I draw the conclusion that General Griepenkerl considers two troops of cavalry sufficient to do divisional cavalry duty with a small brigade. In these problems the brigades were usually detached from a division. A division will usually march on one road, and I think that twice the amount of cavalry necessary for a brigade should be enough for a division. If we have one squadron to a division, and use one-half of it at a time for arduous duty, keeping the remainder as a reserve or support, this would allow:

Eight patrols of from twenty to twenty-two men each; or
Twenty-four patrols of from six to eight men each; or
Eight pickets with a second relief; or
Forty-four cossack posts with a second relief.

In the last two cases I counted on using the whole squadron. According to the F. S. R., a squadron can furnish an outpost with support for two and one-half miles of front, but in the normal case this cavalry would be used to supplement the infantry outpost, and hence could cover a much greater front, or the same front, with less men. It seems to me that there would be ample cavalry to reconnoiter all roads, accessible positions, or towns which a division would be likely to encounter during a day's march, and also have enough to connect with the independent cavalry. As to the outpost duty, the cavalry will be placed usually on the roads, at fords, and at distant points of observation. Not much will be kept out at night. The calling in of divisional cavalry for the night is illustrated by the following incident, which is quoted, as it bears on the misuse of divisional cavalry, which is quite as important as the use of that branch. During the advance of the Thirteenth Division of the Prussian army after the battle of Spicheren, a squadron of the divisional cavalry had been out to the front during the day, and in the evening was ordered back to the bivouac. Starting back in the dark the squadron struck a friendly infantry picket under a sergeant major. The experience of the squadron is given by its leader in the following words:

"As I was riding quietly along with my trumpeter, thirty paces ahead of the squadron, and the hussars were singing lustily, I suddenly heard the order, 'Fire!' and a volley was

fired by twenty or thirty rifles; the bullets whistled over our heads. I shouted, 'Prussians!' at the top of my voice, and received for answer the second volley. The matter was getting serious. I spurred my horse forward, and was close to the sergeant major before he could give the order a third time to fire. (His men were standing behind stacked wood near the main road.) It appeared that the young man had already reported to the rear, 'Enemy's cavalry are attacking,' and that upon this the reserve of the outpost had got under arms, and a further alarm had taken place even in the camp at Forbach. That the squadron escaped without any loss must be attributed to the agitation of the infantry, to the darkness and to the close range, which caused the bullets to fly high."

With the aid of the signal corps it is probable that much of the messenger duty heretofore required of the divisional cavalry will be unnecessary, thereby giving the cavalry more strength for the more positive means of security. It is probable that an escort will be necessary for the division commander; and perhaps some detail for provost duty. But, according to Von Schellendorf, a brigade commander needs no more escort than does a regimental commander.

I believe that four troops of cavalry would be ample to perform the duty required of cavalry with an infantry division in the average case.

Armament for This Duty.—The present armament of the cavalry is the best that could be obtained for the work. If I were convinced that divisional cavalry would or could be used in what I now regard as an ideal manner, that is, having a portion of it kept intact, I would recommend that a machine gun platoon accompany the squadron. No machine gun should be taken away from the independent cavalry for this purpose. But though I have had no experience, I am very strongly of the opinion that in actual service it would not be long before, from one cause or another, the divisional cavalry would be so scattered that the machine gun platoon would simply be attached to the infantry of the division.

How Used.—The Japanese seem to have used their infantry more in conjunction with their cavalry than it is thought

would be necessary or wise for us to do. If I am not mistaken the French lean in this direction. The cavalry should in many cases be closely backed up by the infantry in order to make its initial steps effective. But our cavalry will in its patrolling, be able to act quite independently. Much of the advantage hoped for on account of its mobility would be destroyed by too close contact with the infantry. Colonel Gough suggests that this cavalry operate to a distance of from two to three miles from the division. This would, I think, usually be the minimum. The distance will, of course, depend on the location of the independent cavalry, and also on the ever uncertain quantity, the enemy, as well as upon the character of the country.

The Best Use of the Cavalry Available for Us.—I have gathered from my study of the subject, that foreign armies assign as divisional cavalry those regiments that are superior in dismounted as compared to mounted action, and it seems to me that such a course is proper. I believe that the service of security required of divisional cavalry calls for dismounted action more often than for mounted action. At the same time, in order to make this force most efficient, they must have the confidence born in the training which fits them for mounted action. Now in our regular army we have but one kind of cavalry. They all receive the same training. But in case of war our regular army must be immediately reënforced by the militia and volunteers. Here we will introduce a cavalryman who is, in all probability, more valuable in dismounted than in mounted action. If I am correct in my opinion given above, as to the best distribution of cavalry, would it not be well to plan in peace to use our militia cavalry in war, or such part of it as would be necessary, for divisional cavalry? This would allow what we consider as our most purely cavalry arm (the regular cavalry) to be organized into brigades and divisions, which are deemed so efficient at the outbreak of war. Again, such a plan would enable these cavalry divisions to be the first to take the field upon mobilization (*i. e.*, provided we establish some system for putting our troops on a war footing.

General Aleshire's plan for a Remount Division is a step in that direction).

With the above idea in mind I have observed the following:

We have fourteen regiments of regular infantry and nine of cavalry in the United States. In the spring of 1906 we had organized militia, so situated that it could readily be organized into ten separate squadrons of cavalry and seven infantry divisions. If we should organize two infantry divisions from our fourteen regiments and assign the militia cavalry as divisional cavalry, we would have three army corps well organized as to infantry and cavalry. This would leave the nine regiments of regular cavalry to be organized into two cavalry divisions of from 5000 to 6500 men each. Some such plan as here suggested would I believe, all things considered, give a good organization as far as the cavalry is concerned. It would provide for divisional cavalry, without decreasing the cavalry that we *should* have available for independent use during the first stages of a war.

In closing I wish to give one quotation, which, while not bearing directly on my subject, is particularly true regarding cavalry, and is, I think, very pertinent to the future success of our country: "Improvising in war time is always a disadvantage as compared with an established organization in peace."

THE GERONIMO CAMPAIGN.

By H. W. DALY, Chief Packer Q. M. Department U. S. Army.

IN giving a narrative of the principal events of this memorable campaign, it may be well to remember that they are given as a dry statement of facts coming under my personal observation as packmaster in charge of the pack trains with Captain Emmet Crawford's command, and later with that of Captain H. W. Lawton (afterwards General Lawton), the operations being under the directions of the department commander, General George Crook, and his successor, General Miles.

Late in May, 1885, it was reported at Whipple Barracks, Prescott, Arizona, that Geronimo, with about 150 of his band, had broken out from the Fort Apache reservation and started for the Sierra Madre Mountains in Old Mexico, and that Lieutenant Britton Davis, Third Cavalry, under whose control the Chiricahuas were, was in pursuit with a company of Indian scouts, having with him Chief Chats as First Sergeant of Scouts. On May 29th, I received orders to pull out for Ash Forks with my pack train, and to proceed thence to Deming, New Mexico, by train, and there report my arrival by telegraph to General Crook, then at Fort Bayard. On June 1st, I received orders to await the arrival of Captain Crawford, and to report to him.

He arrived on the evening of June 6th, and I met him at the train. On his invitation, I went with him to the Railway Hotel, where we had a full conference as to the situation. I had known Captain Crawford for years on numerous Indian campaigns; and as he knew that I was personally acquainted with Geronimo and other chiefs of his tribe, many of whom had served as scouts in New Mexico and Arizona, it is but natural that he should have taken me into his confidence.

We discussed the probable duration of the expedition, the personnel of the scouts, the reliability of Scats, and, knowing the extreme caution of these renegades, their natural selection of terrain to avoid surprise, and their mode and rapidity of travel, either on foot or mounted, we also discussed freely a plan for scouting both flanks of the Sierra Mountains, and for guarding all waters along the line. Captain Crawford stated that General Crook would have sufficient troops to guard every water hole on the line, and a small number of scouts with every troop to "sign ride" the country between waters, and that a second line of troops would be stationed along the railroad, as water might be available.

It was thought that this diposition would afford ample protection to the settlers within a radius of 100 miles from Guadeloupe Pass, should hostiles attempt to reënter Arizona or New Mexico, and that the troops, with the aid of the scouts, would give them a warm reception. It was considered that it would be best to exercise the greatest vigilance in the vicinity of Guadeloupe Pass, inasmuch as it lay in the direct line of travel from the Sierra Madre Mountains to the Apache reservation.

Captain Crawford said that Lieutenant Elliott and Al. Seiber, with a company of Indian scouts and pack train, would join him on the next day, and that his movements would depend upon what news they brought of having cut any signs of the hostiles; also that Captain Kendall and Lieutenant Hannah, with a troop of the Sixth Cavalry, then at Deming, would form a part of his command.

On the morning of June 8th, Lieutenant Elliott and scouts having reported, we proceeded by special train to Separ, a station on the Southern Pacific, due west from Deming. On reaching Separ, Captain Crawford learned of the whereabouts of Lieutenant Britton Davis and his scouts, and we detrained and pulled out for Skeleton Cañon, due south of Separ, where we went into camp to await the arrival of Lieutenant Davis. He arrived the following day, with sixty scouts and a pack train.

On the morning of June 11th, the command broke camp and traveled in a southeast direction, passing by Black

Springs, Fronteras and the hamlets of Bavispe, Basaraca, Guachinera, and thence in a westerly direction to the Opata Mountains, and about three miles west of the village of that name, reaching this point on June 21st. Here it was learned that the hostiles had rounded up and killed a few beef cattle, and headed north for the Sierra Madre Mountains. The following morning we moved about two miles east of Opata, and camped near where the hostiles had killed the cattle.

From the report brought in by the scouts, it was learned that the hostiles were in camp in the foot hills of the Sierra Madre, not far from our camp. That night Captain Crawford sent Lieutenant Davis, Lieutenant Elliott, Al. Sieber, and fifty scouts, with Chief Scats as first sergeant, to locate their camp, attack them and destroy their camp, and, if possible, to cause them to surrender. Next day, June 23d, a runner came in with the information that one of the hostiles had been killed, one or more wounded, and fifteen captured, without any casualties among our men.

Lieutenant Davis returned that afternoon with his command and brought in the fifteen prisoners, composed of women, boys and girls of all ages. Old Chief Nana, of the Warm Spring Apaches, was among the number. This old rascal was the war chief of Victoria's band, that made life a burden to the people of New Mexico for the three years 1879, 1880 and 1881, and led the troops of the Fourth and Ninth Cavalry in many a long and weary chase. With the exception of himself and twenty-five warriors who were absent on a raid, the remainder of Victoria's band were massacred in the Tres Castios Mountains, Chihuahua, Mexico, by General Terassas with two troops of irregulars and some Tarahumari Indian scouts. By the way, it was these same troops that killed Captain Crawford in 1886.

On June 24th, Lieutenant Hannah with a part of Troop "A" was sent to Fort Bowie with the prisoners, and with him was sent a scout named "Dutchy," a most incorrigible and vicious scoundrel, who had made the night hideous in camp by his over indulgence in mescal, obtained in the village of Oputo the day before. "Dutchy" was ordered to be confined in the guard house at Fort Bowie on arrival there. That afternoon was spent in rearranging cargoes to be carried by the two pack trains, giving an average of 300 pounds to the pack mule. On the morning of the 25th the command moved in a southeasterly direction, and by easy marches, until the hamlet of Nacori was reached, and thence fourteen miles south of that village, where a permanent camp was established on a little tributary of the Jarras River, where there was an abundance of wood, water and succulent grasses for the animals.

Captain Crawford having realized that it would be utterly impossible to overtake the Indians by following their trail, and that it was their policy to encourage pursuit and thereby wear out our stock, determined to remain quiet and to send the pack trains back to Lang's Ranch, New Mexico, for supplies. He directed me to bring back all the supplies and ammunition possible, and if practicable to get another pack train and thereby return with about three months' supply for the command.

So far I have not attempted to give a narrative of each day's travel, the terrain and distance traveled, and it is sufficient to note that our scouting was along the southern flank of the Sierra Madre Mountains, which were cut up by seemingly impassable ravines and hills covered with pine, fir, oak, mountain mahogany, scrubby cork trees, giant cacti, and of thorny undergrowth. The small tributaries of the Jarras River rushed madly down between boulders of immense size, making fording them a perilous undertaking. Game was plentiful, there being an abundance of small white deer, black and brown bear, and wild turkeys, with which the scouts kept our camp supplied.

On the route to Lang's Ranch we passed through the villages of Guachinera, Basaraca and Bavispe, thence in a northerly direction across the Bavispe Range and the Janos Plains towards Loco Pass in the San Louis Range. We passed by the Sierra Medio, the scene of the Tupper and Rafferty fight of 1881. Three miles north of the pass is Lang's Ranch, where we found Lieutenant James S. Pettit in command of the supply camp, and one troop of the Fourth Cavalry, under Captain Budd. Lieutenant Huse in command of

Troop "C," Fourth Cavalry, with another pack train arrived soon after, he (Lieutenant Huse) being under orders to relieve Captain Kendall's troop, which was to take station at Alamo Waco, New Mexico.

The three pack trains were loaded with the necessary supplies and, under command of Lieutenant Huse, the return trip to Crawford's camp was made in ten days. On the following day Lieutenant Davis and myself were ordered to select twenty of the best pack mules from the pack train that had joined us at Lang's Ranch, Carlisle's pack train and two of his packers, and the remainder was ordered back to Fort Bowie. The supplies were divided between the two remaining pack trains, Daly's and Hay's, making a cargo of over 300 pounds to the pack mule.

On August 2d the command broke camp and traveled in a northeasterly direction, which led us into the steep spurs of the Sierra Madre Mountains, which towered above us grand and gloomy, hidden at times by fleecy clouds, truly well chosen as a suitable home for the fleet and vindictive Chiricahua Apaches. After five days of continuous climbing over rugged spurs, a runner came in with the report that five of the hostiles had been killed by the scouts of Lieutenant M. W. Day's company, and that some women and children had been captured. These scouts were a portion of Major Wirt Davis's command that had been operating on the northern flank of the mountains, and had crossed the divide and come in touch with our party.

Later in the evening of that day, Chief Chats and Al. Sieber returned and reported that the hostiles had been caught by surprise by Lieutenant Day's scouts, and many were forced to jump over a steep bluff in order to escape being captured. Had this happened a day later the scouts of both commands would have caught the hostiles in a trap of their own choosing.

This occurrence scattered the hostiles, a part taking down the divide in a northwesterly direction, and the main party taking across the divide in an easterly direction.

Crawford decided to follow this latter party; but realizing that the condition of the troop horses was such that they could not stand the rough climbing, he concluded to send them back to the line, and on the next morning Lieutenant Huse started back with them for Lang's Ranch, taking ten pack mules and two packers to transport their supplies.

On the afternoon of August 8th, we pulled out from camp, and picked up the hostile trail. On the third day, on reaching the crest of what we assumed to be the summit of the Sierra Madre Mountains, we bivouacked at a camp made by the hostiles two days before. The remains of some slaughtered ponies found here testified that they were not only short of meat, but also that their animals were playing out. From here, Crawford sent out an advance scouting party under Lieutenant Britton Davis and Al. Sieber, with three days' rations, in hopes that they might overtake the hostiles.

Towards sundown, heavy clouds, laden with moisture, hung on the summit, and as they sank down the steep sides of the mountain, vivid flashes of lightning shot downward, revealing the cavernous depths along the flanks.

As we were encamped on a hog-back, the water flowed on either side, north and south; on the northern side a precipice of unknown depth would reveal itself as the lightning shot down into space. The frightened animals huddled together as if for protection, and the hair of their tails stood out straight as if supported. On the southern side, mountains, or what appeared as such when traveling in the lowlands, now looked like hillocks in the distance, and stretched as far as the eye could reach, a magnificent panorama, never to be forgotten.

On the 12th, the scouts returned and reported the trail of the hostiles as having scattered. Crawford then decided to send a stronger force, with fifteen pack mules, and with instructions to hang to the trail at all costs, and to force a fight or surrender. They were to keep him informed of conditions, and he would keep in as close touch as possible. The hostiles were evidently hard pressed, as they were dropping their ponies on each day's travel. The trail also showed that there were not more than five or six ponies with the renegades. The scouts reported that they were climbing the steepest portion of the Sierra Madres, and that many pack

mules would be killed in the climb after them. Crawford asked me what I thought about it, and I replied that I had no fears on that score, knowing that every mule in the train was as sure footed as a chamois, and as careful with the load on its back as a mother with a child in her arms. Every mule was a pet with the packers, and each knew their name when spoken to in a voice of caution or word of encouragement as well as a human being in a similar position would understand it. I may add the mule evidenced approaching danger quicker than a man would, and knew instinctively how to avoid it.

On the afternoon of the 13th, Lieutenant Davis, Al. Sieber and fifty scouts, with Chief Scats, started, taking with them fifteen pack mules and three packers. Knowing Sieber to be as true as steel when on a trail of a hostile, I cautioned him as they pulled out: "Don't forget that Scats is with you, if it comes to a fight, or trying to surprise the hostiles." They left camp in a drizzling rain, and it kept up for the next five days; until every blanket and piece of canvas was water soaked.

Climbing up one side and down the other of a series of broken ridges that seemed to be without end, and with an occasional bog, waist or belly deep, that tried the mettle of both men and animals. On the 18th, the sun rose bright and clear, and with it the spirits of everybody.

Captain Crawford expressed uneasiness in not hearing from Lieutenant Davis, and decided to send Lieutenant Elliott, with twenty-five scouts, ten pack mules and three packers, to endeavor to overtake him and be guided by circumstances, but, in any event, to send a runner back with the first information obtainable. By noon the following day the heart of the Sierra Madres had been crossed, and the downward trend of the broken range was noticeable. On the 21st, the headwaters of the Casa Grande was reached, and the valley could be seen spreading out in the distance, bright and green. The sight of the green valley, with numerous beef cattle roaming at will, gladdened the hearts of man and beast.

On the 22d the valley of the Casa Grande was reached, and the Sierra Madre Mountains had been crossed by mounted men and pack animals, a feat considered impossible by the Mexicans on either side of the divide.

The pack mules appreciated the fact, as they sailed in cropping big juicy mouthfuls of succulent wild timothy and white grama grasses. The animals had been subsisting on pine grass for the past fourteen days, and this being utterly devoid of sustenance, they had fallen off in flesh very considerably.

On August 24th we entered the hamlet of Casas Grandes and learned that Lieutenant Elliott, scouts and packers, had been captured and put in prison or guard house by the Mexican forces (irregulars), and that Lieutenant Davis and his party had crossed the river about a mile above the town, on the trail of the hostiles, and were in pursuit of them.

As I had to care for the scouts with Crawford, in the absence of both the lieutenants and Al. Sieber, the Captain, on entering the plaza and before riding up to the commandant's house, instructed me to keep a sharp lookout in case of treachery. As the Captain entered the house, every packer had his gun across the saddle in front of him, the mules being rounded up and held there by the scouts, and every street leading into the plaza was watched for any indication of trouble. I dismounted and stood in the doorway.

Possibly this may seem an act of bravado, but I had occasion to remember that Lieutenant McDonald of the Fourth Cavalry and his company of Indian scouts and pack train had been made prisoners in the little hamlet of Ascension in 1881. The "alcalde," or mayor, had received him and party most royally, and gave a dance in honor of the occasion of his friendly visit. During the evening, and before the dance opened, a courier was sent post haste to notify the commanding officer at the town of Janos that a hundred Americans had entered the town armed to the teeth, and to make all haste possible in coming to their rescue. The scouts were placed in a corral enclosed by a strong adobe wall and the Lieutenant was given a room in the mayor's house. In the early grey of the morn the corral and packers were surrounded by Mexican cavalry and

the Lieutenant placed under arrest. The whole party was marched to Janos under guard and kept prisoners for two weeks, and fed on parched corn, until General McKenzie effected their release. It was well that they turned them loose as they did, as two troops of the Fourth Cavalry were starting out from old Fort Cummings, N. M., to open negotiations in force.

In the meantime, I noticed the Captain rising from his seat, and the mayor all bows and smiles. The Lieutenant, in brass buttons on his short coat and down the legs of his trousers, stepped forward and saluted, and the order was given for the release of Lieutenant Elliot and his party. In fifteen minutes up they marched, as sorry looking an outfit as I ever saw, barring Lieutenant McDonald's, and in a few minutes more the pack mules were led up, about as sorry looking objects as the men. The firearms of the scouts and packers were restored to them.

Everything being in readiness, we rode out of town and bivouacked on the Casa Grande, about five miles west of the hamlet.

The following day Captain Crawford struck out in a direct line for the boundary, going into camp three days later, close to the scene of the "Garcia" fight, on the western edge of the Janos plain, and sent despatches to General Crook, then at Fort Bowie, Arizona.

In the first days of September the Captain sent Hay's pack train to Fort Bowie to recuperate. This pack train was afterwards divided into sections, and apportioned among the troops on the line. About the middle of September Crawford sent me to Fort Bowie for a similar purpose, and on arrival at Bowie I was ordered to the southern flank of the Chiricahua Mountains, about twenty miles east of Bowie, with instructions to turn over ten pack mules and two packers to Captain Carpenter, stationed at Galeyville. His camp was situated in a little park, with an outlet through a box cañon on its northern side, through which could be seen the San Simõn flat and the Stein's Peak Range in the distance.

On the night of my arrival a courier, Navajo Bill, arrived in camp with dispatches from General Crook to Captain

Carpenter, with the information that the hostiles were reported coming down the Stein Peak Range, and with orders for him to cut across the valley and endeavor to intercept them. Everything was in readiness by 3 A. M., and the two troops pulled out through the box cañon. On the following morning, Navajo Bill and I struck out on the back trail for Fort Bowie. On the western edge of the little park it narrowed toward a dry ravine, up which the trail went to the top of the divide. At the mouth of this ravine, a family lived in a frame shack, who at this time were rounding up a bunch of horses on the divide. A short distance from the mouth of the ravine we cut hostile signs, scattered somewhat, the droppings of their ponies still steaming. I remarked to Bill, this is valuable information for General Crook to know as soon as possible, and determined to ascertain for a certainty their probable destination. A little further on we found a burro and its rider shot dead. This man belonged at the shack we had just passed. Further on up the trail we found that the hostiles had captured some ponies from a shack on the crest of the hill about two miles from the first shack.

We followed the trail on up as it ascended towards the divide until we became satisfied that this hostile party would bivouac on the top of the divide for much needed rest, and also to watch the movements of the troops cutting across the valley.

Not wishing to give them the impression that their location was known, we traveled back on the trail and then pulled over a saddle of the range to the main traveled road to Fort Bowie. Having traveled about five miles toward Bowie, a bunch of horses was seen on our left, coming down the slope at a two-forty gait, a rider in front waving his hat, and one behind driving the horses. On they came for dear life, shouting, "Indians! Indians!" On coming up they stated that they had been run off the divide by the Apaches, and they thought the family at the ranch had all been murdered. I informed them that they were alive with the exception of the one man we found dead by his burro. I advised them either to drive their stock to Fort Bowie or

down to the railroad station. This latter advice they followed.

Having lost fifteen or twenty minutes, Bill and I hastened on to Fort Bowie. On entering the parade ground we were met by Captain Cyrus S. Roberts,* General Crook's adjutant general, and informed him of our discovery of the hostile party. He immediately took us to headquarters, where we gave our information to the General. I stated to the General that it was my impression that the hostile party would bivouac on the divide that night, keeping pickets out watching the flat for any movement of the troops in their direction, and also watching Fort Bowie; that they had undoubtedly seen the dust of Carpenter's troops on crossing the valley.

Soon after, the General left and took the train at Bowie Station for New Mexio, with the evident purpose of making a fresh disposition of the troops in that quarter.

On the afternoon of the following day Captain Roberts informed me that Captain Crawford was on the trail of the hostile party; that they had stolen a number of horses from the ranch and were beating back toward the Chiricahua Range again. Also that he was sending out Captain Thompson's troop of the Fourth Cavalry to pick up Crawford's trail, and render him any assistance possible.

Knowing Captain Roberts well, I ventured to question the advisability of sending the troop to follow Crawford, as they would be of no practical assistance. I therefore advised that Thompson's troop be sent down the Chiricahua Range, as I believed that the hostiles would follow an old wood road that led to the top of the range, and thus they would be caught between two fires. However, Captain Roberts was obeying orders, and Thompson started out to follow Crawford. It was found that the hostiles did follow the old wood road over the range, and thence into Old Mexico.

This practically ended the campaign for the summer.

A few days later I met Al. Seiber, who gave me an account of their trip after the hostiles since they left us on the summit of the Sierra Madres. He stated that the hostile

*Now brigadier general, retired.

party kept one day's march ahead of them; that in passing Casas Grandes, Lieutenant Davis left two scouts to inform Captain Crawford that they would follow the hostiles as far as possible, and that they seemed to be heading for New Mexico. They knew of the trouble Lieutenant Elliot got into, but as they felt that Crawford would settle it, they did not think it advisable to lose any time in pursuing the hostiles.

He stated that Chats and some of the scouts had been very ugly on the trip, and that at times their lives were in danger.

He also said that he and Lieutenant Davis were then going to headquarters to discuss the cause of the outbreak, which he would tell me later.

I told him not to be too aggressive, or he would be taking his blankets back to San Carlos, and that I would hate to be in Lieutenant Davis' boots, for I knew the "old man" would know the cause of the outbreak.

A few days later, Lieutenant Davis told me he had resigned his commission, and Al Sieber "took his blankets" back to San Carlos. I felt sorry for him, as a better scout, one who understood the Indian in all of his numerous phases, I never met. He was utterly fearless, but still had sense enough to know when numbers were too many for him. His services to the government ever since the close of the Civil War had been invaluable.

THE WINTER EXPEDITION.

In the early part of November Captain Crawford rode into camp and stated he was starting for Fort Apache to enlist a new company of scouts, the term of enlistment being six months, and that he wished me to have everything in readiness so as to be able to start by the end of the month.

On November 29th we left Fort Bowie. The party consisted of one hundred Indian scouts, divided into two companies, of fifty each, Lieutenant M. P. Maus* in command of the first section and Lieutenant Wm. Shipp† that of the

*Now colonel Twentieth U. S. Infantry.

†Lieutenant Shipp was killed at Santiago during the Spanish-American War.

second. Tom Horn was chief of scouts for the first, and Wm. Harrison that for the second company. Dr. Davis was the medical officer, and Hospital Steward Nemeck, two pack trains, Hay's and Daly's, of fifty pack animals each, and twenty-eight packers, completed the command. Captain Emmet Crawford was in command of the expedition.

The route taken was by the way of the Dragoon Mountains, Tombstone, Fronteras, thence through the Coompas Valley range of mountains. From this point the route took a northerly course toward Nacori arriving at the summer camp, fourteen miles east of Nacori, in the latter days of December, 1885.

From this camp, as during the summer campaign, scouts were sent out daily to endeavor to cut any sign of hostile trails. Perhaps I ought to state here that during the summer campaign, at no time were we on the trail of Geronimo, Nachez and their band.

In the Chiricahua tribe each chief had his own following, and each was extremely jealous of the other. Chats operated in New Mexico, and joined hands with old Nanā of the Warm Spring tribe, after Victoria was killed by General Terasas. In one of Chats's raids he killed Judge McComas and his wife on their way to Silver City, N. M., and captured their little son, Charley.

This led to the campaign of 1883, known as the Sierra Madre campaign, by General Crook in person, with the expectation of rescuing Charley McComas. Peaches, a White Mountain Apache, who led the expedition to the stronghold of the hostiles, stated a white boy was with the renegades, but he was never found. No doubt he was killed by the squaws.

Chihuahua, another chief, had his following, and with him were some of the brightest of the Chiricahua tribe, such as Hosanna and others of that ilk.

This chief was first sergeant of a company of Indian scouts in New Mexico, under Lieutenant James A. Maney* of the Fifteenth Infantry in 1880, and after the outbreak of

*Now major Seventeenth Infantry.

Geronimo from Fort Apache, or rather their camp on Turkey Creek, in May 1885, Chihuahua and Hosanna led our forces during the summer campaign. Geronimo, during all that time lay hid in his stronghold in the Sierra Madre, and neither he nor any of his following made a raid during the past summer, as far as came to my knowledge. The killing of a few of Lawton's troop, left at Gaudeloupe Pass by Captain Lawton to guard the camp while he was absent with the main body of the troop, was done by a party of Chihuahua's band. The capture of a band of ponies at White's Ranch, the raid into Fort Apache, or the Apache camp on Turkey Creek, resulting in the killing of twelve of the friendlies and capture of six women and children in the month of November, were also by Chihuahua's band.

The capture of fifteen women and children of Chihuahua's band on June 23d was effected by Chats in the mountains north of Opata, not as a feat of arms to please the white race, but to show the followers of Chihuahua, as well as Hosanna, that he was their master.

In the early days of January, 1886, I became convinced, from certain signs and actions of our scouts that they knew more about the whereabouts of the hostiles than they had reported to Captain Crawford. One night I questioned Corporal Juan, a White Mountain Apache, and accused him of this, and, after I had become satisfied of it, I told him to bring Noche to me. They came, and after questioning him, I told them they must go to Crawford in the morning and tell him all they knew. Later, after the scouts and packers had retired for the night, I went to Captain Crawford, who was in bed, but still awake, and informed him of my impressions and of the talk that I had with Juan and Noche. The next morning Noche and the medicine man approached Captain Crawford, and the latter commenced an harangue to him and the scouts that had assembled in a half circle about him. After talking for some time, he, the medicine man, produced a small buckskin bag, which he took around to each scout to kiss, and each repeated after him some form of vow or obligation. I then became convinced of their sincerity, and that they would find the hostiles.

That day a scouting party was sent out, and on their return they reported that they had located the camp of the hostiles, and that they were engaged in sun-drying some meat, evidently beef from some cattle that they had rounded up from a raid on some Mexican hacienda.

The next day Captain Crawford formed a party to go on foot to attack the hostile camp. He left six scouts and the packers, except three, with me to look after the camp, and gave me instructions to store the officers' baggage, which was very little, and several hundred deer skins that the scouts had accumulated, at the village of Nacori, where the alcalde had promised to care for them. Three packers with eleven pack mules were selected to accompany the command to carry the rations and extra ammunition. Orders were given that each man and officer should carry his own blanket, and all surplus impedimenta was cut out. That night, after supper, the officers and packers and a few of the scouts sat around the camp fire discussing the proposed scout on foot through the mountains. Some did not think the scheme practicable, and so expressed themselves to Captain Crawford. He, however, insisted that if they expected to surprise the hostiles, it would be necessary to take as few animals as possible, and to keep those taken well to the rear, and to travel light. The officers and chiefs of scouts were ordered to provide themselves with moccasins, as their heavy boots would make too much noise. He also ordered that a rope corral should be made around camp each night, outside of which no one would be allowed to pass except under guard. The Captain told me he would like to take me with him, but that I was needed more with the pack train, as one upon whom he could depend to bring it up when needed.

About sundown, on the night of January 3, 1886, they pulled out in single file, with Crawford in the lead, followed by the other officers, the scouts and the packers bringing up the rear. The Captain called out a cheery "good bye," as I watched the command from the top of a neighboring hillock, as it started up the slope. As they disappeared from view in the gathering darkness, I turned back with a feeling of

depression, a choking sensation that I could not shake off that night.

The following day was spent in preparing dug-outs in which we stored all the supplies and settled down to await news from the command.

On the morning of January 9th, Corporal Juan with three scouts came in with a note from Captain Crawford, saying that he was on the trail of the hostiles, and directing that I take the pack train loaded with all the supplies, except the deer skins stored at Nacori, and to join him as soon as possible. He said that Juan would show me a short cut whereby I could avoid his tortuous and difficult trail and save much distance.

The pack train was immediately gotten ready and sent to Narcori for the supplies there, and then returning by the way of our camp, we pushed on for the Jarras River, where we bivouacked that night, having made about forty-six miles in all.

Our camp that night was on the bank of the river, at the mouth of a small box canyon. On the other side rose a steep, rugged mountain, so high that its top was lost in the clouds, while at its base was a narrow ledge, with scarcely standing room for animals, and between it and our camp the waters rushed down over rocks and boulders, a maddening river, that bespoke an ugly crossing in the morning.

At daylight on the morning of the 10th, the crossing was made without accident, and we started up the mountain, the steepest I have ever ascended. We made a dry camp, or rather a wet camp that night, as there had been a drizzly, misty rain falling all day, that made the climbing very laborious for man and beast, and at times dangerous. Sufficient water was caught in canvas for making our coffee, and we laid down to spend a dismal and uncomfortable night.

The following morning, the ill-fated January 11th, the sun rose clear and bright. After half an hour's travel, we struck Captain Crawford's trail, and the traveling became much better. About 11 A. M., a courier came in with a note from Lieutenant Maus, stating that Captain Crawford had been shot and mortally wounded by Mexican troops; that

they were out of rations, and urging me to rush forward the supplies.

I immediately "*cached*" all impedimenta, and started forward to make a forced march to join the command. About three hours later another courier arrived with orders for me to select a camp, and the information that they were bringing the Captain on a litter. Soon thereafter I could see their party coming slowly down the side of the opposite mountain. I selected a camp at the foot of the mountain, where there was running water, and anxiously awaited their arrival.

About half an hour later they came in, the scouts carrying the litter, and very soon poor Crawford was lying on the ground before me, apparently unconscious.

Having put up the only tent in the command, a common "A" tent, the Captain was made as comfortable as possible in it. I spent the night at his side, watching for any sign of returning consciousness, but without avail.

The following day a "*travois*" was constructed, and I made a "*wickiup*," or shelter, of withes and canvas for the travois to protect the Captain from the sun and rain. The supplies that I had cached on the mountain the previous day were brought to camp, and everything put in readiness for the return trip to Narcori. During the day, Dr. Davis had prepared a little nourishment, made from a can of extract of beef, which Captain Crawford swallowed with difficulty and evidence of great pain. Soon after this was given him, I noticed signs of returning consciousness, and, taking his hand, I asked if he knew me and if he could understand what I said, to which he replied by a pressure of my hand. I then asked him if, in case of his death, he wished to be buried by the Masonic fraternity, and he again replied by pressing my hand, and also by a grateful look in his eyes.

This was the only occasion in which he showed any signs of being conscious, although I spoke to him several times. I asked him if it was the Mexicans or the scout "Dutchy" that shot him, but he made no reply.

That night Lieutenant Shipp and I remained with him, he taking the first and I the latter half of the night.

On the afternoon of January 13th, Lieutenant Maus decided to return to the line, in the neighborhood of the Cañon de los Embudos, and there await instructions from General Crook, first sending a courier in advance to inform the General of the conference with Geronimo.

An account of this conference and also of the events of Captain Crawford's operations will be related later.

Having made the Captain as comfortable as possible in the travois, we pulled out of camp, ascending a steep and ugly mountain, with one packer leading the mule with the travois, and with two other packers, one at each pole, to ease it over rough places and to bring them into proper line when making abrupt turns in the trail. The scouts were continually on the outlook for as smooth a trail as could be found, so as to make the trip as easy as possible for the poor Captain.

On January 17th, while on the march, one of the men lifted the canvas that protected Captain Crawford, and saw that he was dead. He immediately reported the fact to Lieutenant Maus, who at once selected a suitable camp, and we bivouacked for the night. That evening I improvised a stretcher for carrying the body.

On January 21st we reached Narcori, and there, near the unfenced cemetery of that little hamlet, we dug a grave in which we lowered the body to rest, wrapped only in his blanket, but with some slabs about it to protect the body from the earth.

There was no funeral oration, no dirge, no taps, but we moistened his grave with our tears, and on bended knee repeated the Lord's Prayer and "So mote it be."

I cannot pass, in this poor account of his untimely death, without paying a tribute to this remarkable, manly man, whose character and worth were so well known to me. He was the bravest among the brave; gentlest among the gentle; he forgave and overlooked the faults and frailties of others, while being the most chivalrous and gentlemanly officer and man that I have ever known in or out of the service. His loss to all those who knew him, and particularly to General Crook, was irreparable.

There was but one officer that could have taken his place in that campaign, but unhappily he was at that time not in good standing with General Crook on account of his trouble with the postmaster at Holbrook. I refer to Lieutenant Charles Gatewood of the Sixth Cavalry. Gatewood knew the Indian character thoroughly; they knew and trusted him, and had he been in charge of the Chiricahuas at Fort Apache, as he had been formerly, this outbreak would never have occurred.

Now to return to the events of the expedition of Captain Crawford that ended in his receiving his death wound.

The Indians had left the camp where our scouts had located them before Crawford's command reached there, and their trail led off over the mountains, but, as he wrote me in the note brought to me by Juan, towards an unknown objective.

The trail was followed with all possible speed until the night before the hostile camp was attacked, when Captain Crawford formed a corral by stretching ropes around the bivouac and allowed no one to go beyond it.

This was done to prevent, if possible, any chance for the scouts to get out and give a warning to the hostile camp of his approach. This was a factor that always had to be considered, for the Chiricahuas expected or hoped that their friends among the scouts would give them timely warning of approaching danger. This would enable them to pack their camp outfits and saddle up, and also give them time for a parley in case they desired to surrender, or for their families to escape in case they wished to fight. In the former case a squaw was sent into the American camp to pave the way for a talk, they knowing that no harm would befall her.

On January 10th the hostile camp was located, and, disposing his scouts to the best advantage, the command was given for the attack. The rush on their camp was so sudden and so unlooked for that the hostiles had only time to grab their rifles and break for the river, scattering in all directions and leaving everything in the hands of the scouts. Their ponies, dried meat and camp outfits were all abandoned.

Crawford knew full well that it would be folly to attempt to follow their scattered trail, and soon gave up the chase and went into camp on the site of their camp. That evening a squaw made her presence known by calling to our scouts and told them she had been sent to have a talk with the Captain. When she came in she said that it was Geronimo's camp that they had jumped, and that he (Geronimo) wanted to have a talk with Captain Crawford.

Crawford told her he would talk with him the next morning and she left camp to deliver the message. The command being worn out with the tiresome marching and climbing mountain trails, all retired to rest with a sense of security, and with the feeling that the campaign was practically ended.

Such, however, was not to be the case, as the light of the coming day brought forth an unforseen occurrence that changed the whole aspect of affairs, an occurrence that was destined to prolong the campaign for another long nine months, that led to a change of department commanders and to international complications.

To understand fully this unfortunate affair, it will be necessary to go back some five or six years, or to be more definite, to the year 1880.

In the State of Chihuahua, Mexico, especially along its southwestern boundary, where the Sierra Madre Mountains divide it from the State of Sonora, there were in these mountains numerous strongholds for the "Yaqui" Indians, and their neighbors, the Chiricahuas. The depredations committed by the latter on the little hamlets along its northern flank, made life a burden to their citizens. Women and children were captured and cattle in droves were driven to their strongholds, where they were secure from molestation by the Mexican troops.

General Terasas, brother of the Governor of the State of Chihuahua, organized two companies of "irregulars," made up from volunteers from the various hamlets of Ascencion, Janos, Casas Grandes, etc. For scouts and trailers, a company of Tarahumari Indians were enlisted. These scouts were as fleet of foot, and as bloodthirsty as the Chiricahuas.

This organization was known as the S. P.'s, "*Seguridad Publicos*," similar to the State Rangers in Texas.

In 1880, at the close of the Victoria campaign (General Buell's), Lieutenant James A. Maney, Fifteenth Infantry, with a company of Indian scouts and a pack train, traveled with his command from the Candalaria Mountains to within a day's march of the Tres Castillos, a range of mountains which formed a basin, with but one outlet, through a box cañon. Owing to the hostiles having retreated to the interior of the State, it was deemed unnecessary for the American forces to accompany General Terasas further, and Lieutenant Maney returned, rejoining the expedition at El Paso, Texas. The following day General Terasas bivouacked in the Tres Castillos, where his pickets soon after signaled approaching dust which, by the aid of field glasses, was made out to be the Apaches moving rapidly in the direction of their camp. Terasas deployed his men on either side of the cañon, having put out all signs of his campfires and allowed the hostiles to enter the basin, where he annihilated the band, with the exception of twenty-five women and children which were taken as captives to Chihuahua to grace a triumphal entry. The war chief Nanā was absent with twenty-five warriors, making a raid on the little hamlets, or else Victoria's tribe of the Warm Spring Apaches would have been destroyed. This established the reputation of this organization as Indian fighters.

In the Geronimo campaign of 1885, Major Wirt Davis.* Fourth Cavalry, operated on the northern flank of the Sierra Madre Mountains in the State of Chihuahua, having two companies of Indian scouts, about one hundred, with Lieutenant M. W. Day in command of the scouts, and Frank Bennet as chief of scouts. He also had two pack trains of fifty pack animals each, and twenty-eight packers, with packmasters Patrick and Houston in charge of trains, a force similar to Captain Crawford, which was operating on the southern flank of these mountains, in the State of Sonora.

When Captain Crawford crossed the Sierra Madres with two pack trains and entered the little village of Casas

*Brigadier General U. S. Army, retired.

Grandes, the previous summer, it became known for the first time that the mountains were passable in that section to beasts of burden. The organization referred to, the Seguridad Publicos and Tarahumari Scouts got together, under the leadership of a captain, whose name I find blotted in my diary of those days, and not to be outdone by the Americanos, crossed the Sierra Madres, in quest of Geronimo. On coming down the steep sides of the mountains on the Sonora side, they located the smoke of the hostile camp fire the same day that Captain Crawford jumped their camp, and planned to attack the hostiles the following morning.

In the meantime Crawford had made his attack, and when the hostiles fled across the Jarros River, he occupied their camp. Crawford's command being worn out by continuous day and night marching, through thorny undergrowth, and laborious climbing up and down the steep sides of the mountains, their clothing literally torn in shreds, they laid down for the night for the rest they sorely needed. They knew that now there was no danger of an attack from the hostile camp and, no doubt, they had visions of the successful termination of the hard campaign.

In the grey light of the morning of January 11, 1886, the camp was startled by the rapid fire of rifle guns, the balls striking the ground in their midst. In an instant everybody was out of bed, gun in hand, the scouts shouting "Nacoya, Nacoya, Mucho!" (Mexicans, lots of Mexicans). As the Apaches hate and despise the Mexicans, the firing soon became general on both sides.

Captain Crawford ordered out Lieutenants Maus and Shipp, with Scouts Horn and Harrison, to cause our scouts to cease firing, and as Lieutenant Maus and Scout Horn spoke Spanish fluently, it was expected they would explain that they were American troops and not hostile Indians. However, the Mexican troops paid no heed and kept up their fire.

Captain Crawford took Scout "Dutchy" with him, and handing his gun to him, climbed on top of a large boulder so that he could be seen distinctly by the Mexican troops. He was in the uniform of an American officer, although it was literally torn in shreds, and disfigured from all semblance of

an uniform. Taking a handkerchief in each hand, he waved them about his head shouting, "No tiro, no tiro, Americanos, Americanos!"

About twenty-five yards distant from him and across a small ravine, a Mexican, taking a rest against a pine tree, took deliberate aim and shot down poor Crawford. In falling from the boulder his right arm was broken, and one of his eyes were blackened, and when found a few minutes later he was unconscious.

The scout "Dutchy" claimed that he killed the Mexican that shot Crawford, as well as another that was approaching in rear of the one shot. However, before notifying the officers, Dutchy first took occasion to go through Crawford's pockets and appropriate what money he had on his person.

Scout Horn received a flesh wound in the left arm and three Apache scouts were also wounded. On the Mexican side, the captain in command was killed and seven men wounded.

By this time the firing had ceased, and Doctor Davis and the hospital steward did all that was possible for Captain Crawford as well as for the wounded.

In the meantime, Lieutenant Maus had sent Conception, a Mexican and Apache interpreter with our command, to the camp of the Mexicans requesting information as to why they continued firing on our party after they had learned that we were Americans. Conception did not return, and soon called out that he was a prisoner and that they would not let him return.

Lieutenant Maus then went in person to their camp and was promptly made a prisoner also. He informed them that he was an officer of the United States army and that the scouts were in the employ of our government.

They then used threatening and villainous language towards him, and finally said they would only release him when he had furnished a certain number of ponies for transporting their dead and wounded. Thereupon he called to Lieutenant Shipp to send the required number of ponies to the Mexican camp.

As the ponies had been captured by the scouts in the attack upon the hostile camp, they refused to give them up,

and said that they would fight and die before giving them to the Mexicans. Lieutenant Shipp reported this to Lieutenant Maus and informed him that we could spare eleven pack and three riding mules that could be sent instead of the ponies. These were then sent, and Lieutenant Maus and Conception were released.

That night, just before midnight, while I was sitting by the side of Captain Crawford, Geronimo, Chihauhau, Hosanna and others of the hostiles came into our camp and squatted around the campfire of the scouts. I could see them plainly, but as they chatted in low tones I could not always hear what they said. I knew there was no danger from their being in our camp, and I made no report of it until the following morning.

On the following afternoon, while the preparations were being made for the return trip, the officers had a council with Geronimo and his followers, which resulted in an agreement that Geronimo would meet General Crook at the Cañon de los Embudos, near the line, but on the Mexican side, and not far from Contrabandista Springs. This he said he would do as soon as he could round up his people, which would take about five or six weeks, and that he would make his approach known by signal smokes.

Lieutenant Maus stated that he did not know what Captain Crawford's instructions were, and that it was not within his power to make any promises or agreement with Geronimo as to what would be the result of the conference with General Crook.

Feeling sure that the hostile chiefs would return to our camp again that night, I was anxious to watch their movements and hear what they said, in order that I might judge of their sincerity. When I relieved Lieutenant Shipp, about midnight, in watching Captain Crawford, we discussed the situation, and wondered what would be the outcome of the agreement with Geronimo, as well as what steps would be taken by our government after the news of this sad affair should reach Washington, especially as there was plenty of evidence to establish the fact that the Mexicans had continued firing on our command after they knew that we were

United States soldiers and scouts. Lieutenant Shipp was worn out by the marching, the attack, the worry and excitement of the affair with the Mexicans, as well as by his care of Captain Crawford, and was inclined to take a gloomy view of the results of the campaign.

Shortly after he retired, Geronimo and several of his party came in and remained about our camp fire for two or more hours, when they left. A little later I heard one of the hostiles calling to Noche that the Mexicans were on the move and coming towards our camp, and for him to tell the "Captain with Glasses" that if they attacked us, Geronimo and his party would help him with every gun they had. This was said partly in Apache and partly in Spanish, and evidently with the intention that I should hear it, as they knew that I was awake and had been listening to them.

Our scouts at once gathered around and asked that more ammunition be issued to them. As I knew that they had plenty of ammunition, I felt that this was a ruse to obtain more for their friends, the hostiles, not to be used against us, however, but on the Mexicans, or any one else that came in their way.

To resume our narrative, on January 22d we left Narcori for the rendezvous, where the conference between General Crook and Geronimo was to be held, passing through the hamlets of Huachinera, Basaraca, Bavispe and Fronteras, and thence on to San Bernardino Creek. Here a camp was established, about ten miles southwest of the Cañon de los Embudos, on the Mexican side of the line, and there awaited the signal smokes that would indicate the coming of Geronimo.

About the middle of March, 1886, smoke signals were seen at several points on the southern flank of the Embudos, and Lieutenant Maus at once proceeded with a party of scouts to the cañon to investigate them. He learned that Geronimo would arrive the next day, and he moved the command to the cañon, where he selected a camp on a low mesa, or terrace, at the base of which a clear stream of water ran through a dense growth of timber. On the western bank a small clearing was made for the kitchen of the pack train, and on

the terrace the packer's camp was made in the usual formation.

Immediately back of our camp, a small rise gave a commanding view of the country in the direction of San Bernardino and Contrabandista Springs. Looking up the creek, the valley was bounded by a series of jagged terraces of "mal pais" formation, which at the summit broadened out into a mesa, from which the country in every direction could be viewed. It will be seen that Geronimo had especially selected this place for his talk with the General, with a view of guarding against surprises, as he could watch the approach of troops from any direction.

About 10 o'clock the following day, Geronimo, Nachez and Chihuahua, with their respective followings, swept around the base of the foot hills, on the opposite side of the stream, like a whirlwind, dashing by as if in review, and rode on by our camp until lost from view in the timber. They crossed the stream about three hundred yards above our camp, and made camp on the upper terrace, on our side of the creek, having, however, the "mal pais" formation between their camp and ours. Geronimo could be distinctly heard giving orders to his warriors as he carefully selected the site for their camp.

None of them came near us that day, but on the next day a few of the Chiricahuas came into our camp, guns in hand, and chatted with our packers, many of whom they knew when they had served as scouts at one time or another. A few moments later, as I was standing alone watching these visitors to our (the packer's) camp, I heard a rustling in rear of me, and Geronimo appeared, bringing his gun down to the ground with a thud. He evidently expected to startle me and then to laugh at me. I slowly turned around and spoke to him by name, and he, after eyeing me for a moment, came forward and shook hands with me, calling me their Apache name for "mule captain."

We had quite a talk there, he questioning me closely about several things, but particularly as to when General Crook, the "Gray Fox," as they called him, would arrive. Chihuahua also made me a visit, and we chatted of the days

in 1880, when he was First Sergeant of Scouts under Lieutenant Charles W. Taylor, Ninth Cavalry, now lieutenant colonel Fourth Cavalry, on our trip through the San Andreas Mountains, out from old Fort Cummings.

In the meantime, a beef contractor for the troops along the line, named Charles Tribolett, had put up a small shanty about three miles from Slaughter's Ranch at San Bernardino, where he kept a supply of mescal, vile whisky and tobacco for sale to any one, white man or Indian, who had the cash. Our scouts patronized him, and we knew that the Chiricahuas would not be slow in doing the same. On the night of their arrival, pandemonium reigned in their camp as a result of their indulgence in this vile liquor obtained from Tribolett.

This, together with the non-arrival of General Crook, put the hostiles in an ugly mood, and their camp, as well as ours, was in a state of feverish excitement the following day, and many looked for trouble, while many bets were made that the hostiles would not surrender.

On the forenoon of March 25th, the scouts reported that General Crook was coming, and soon thereafter he with his party arrived in camp. As was usual with him, he visited the packer's camp almost the first thing, expecting to get a good meal with us. Blair, our cook, was sadly disappointed that a fine wild turkey that he had been saving for the occasion had become spoiled.

I told the General that while we were glad to see him, we had hoped he would come sooner, when the hostiles, especially Geronimo, were not in such an ugly mood as a result of their debauch.

After dinner, Keyetana, a Warm Spring Apache of old Victoria's band, who had never been on a reservation since a boy until he surrendered to General Crook in 1883, with Nana came in and shook hands with the General. Soon after Geronimo and Nachez, with many of the Chiricahuas, gathered around our kitchen fire, and General Crook decided to have the council then and there, and soon our camp was alive with hostiles and scouts, all anxious to hear what Geronimo would have to say. Among them was also the beef

contractor Tribolett. Lieutenant Maus, on seeing Tribolett, told him that his presence was not desired. While I had no doubt that this rascal was the cause of the ugly and excited condition of the hostiles, yet I did not think it wise to send him away, and so intimated to Lieutenant Maus, but he scouted the idea, and said that the rascal ought to be hung. This man was the undoubted cause of the breaking away of Geronimo from Lieutenant Maus later, after his surrender, and his shack should have been destroyed then, as was done later by Lieutenant J. B. Erwin, Fourth Cavalry.

Captains Bourke and Roberts, of General Crook's staff, were also present. The former, seeing me sitting aside on the "cargo," called to me as he passed and said, "Come down and hear the old man give Geronimo h—l." Having known Captain Bourke for many years, I thought this a good time to warn him, and through him General Crook, that Geronimo, as well as the other chiefs, were in a bad humor, and that it would be well to go slow in giving them h—l; and that had the General come a week before he could then have talked as he thought best, but that it was too late now, if they hoped to have them surrender, as he and his people had been on a continuous drunk ever since they came in.

General Crook selected the ground for the council and seated himself on a little ledge at the base of the knoll. Captain Bourke, with interpreters Montoya, Antonio Besias and Jose Maria, Lieutenant Maus and Scout Noche were on his right in the order named, while Charles Roberts, a son of Captain Roberts, Lieutenant Faison and Lieutenant Shipp were on his left. Opposite to the General sat Geronimo, clad in the usual simple costume of the Apaches—shirt, vest and breech-clout and with a bandana handkerchief about his head in the negro mammy style. On his right sat Nachez, the chief of the Chiricahuas, Geronimo being the second in command, or the war chief, and on his left was old Nana. In his rear stood Hosanna and other chiefs, while in rear of the General were many of our packers and Mayor Strauss of Tucson.

All being in readiness, General Crook turned to Captain Bourke and told him to have the interpreters ask Geronimo to speak and to tell him plainly what his reasons were for leaving Camp Apache, and for him to remember that all he said would be taken down in black and white; that he was here at the appointed place to listen to what he had to say. Captain Bourke repeated this in Spanish to Montoya, who in turn repeated it to Jose Maria, who understood the Chiricahua language thoroughly. In rear of old Nana sat Conception, another Mexican interpreter, who also understood Chiricahua, and who repeated or nodded assent as Jose Maria gave the message to Geronimo.

Geronimo then addressed Nachez, the head chief, and after quite a discussion with him, began his talk or address, for it was a speech full of fire and eloquence. It will be impossible to give his talk in full, and only a synopsis of the main points of it is noted.

He said that in accordance with the promise made two years before (1883) in the mountains, he had gathered his people and taken them to Camp Apache, where he was glad to be, and to have the General as a "Father," as he had promised he would be to them; that he gave them the Long Nosed Captain (Lieutenant Gatewood), who was their friend, to care for them, and that there they were happy; that he then took our friend, the Long Nosed Captain, away from them and gave another, who created trouble among them in many ways. That this new officer in charge of them gave the people of Chats' village all they wanted and them what was left; that he decided against us in all games and races, and punished our people for slight offenses, while Chats' people went free under like circumstances.

He said that they had asked to have the Long Nosed Captain sent back to them; that his people had prayed with their "medicine man" at night to the moon and the stars, and in the day to the sun and "Good Spirit" to keep the darkness and evil spirits away from them, and to have their friend sent back to them, but he never came; that troubles and quarrels grew among his people like grass after the rain, until they felt that they had been forgotten by their

promised Father, and that their young men felt that they were becoming old women.

When he closed his long harangue he was covered with perspiration; he brought his legs close under him, straightened his back and throwing his head forward with a jerk, his whole body quivering with emotion, he fairly hissed, with all the venom of his wild nature, "I want no more of this!"

It was a critical moment, and the excitement was tense among the Chiricahuas, and Nachez, who was watching his people, waved his hand to them to keep quiet.

During all this time, the General had kept his eyes fixed on the ground, although Geronimo asked through the interpreters, why he did not look at him; why he did not say he was glad to see him; why he did not smile and talk to him as he did formerly.

General Crook, at this time, wore a light brown canvas coat and overalls, a pair of Apache moccasins, and a low, double-crowned cork hat, and on his hands a pair of buckskin gauntlets. His long whiskers were braided in two plaits, as he always wore them when in the field.

Turning to Captain Bourke he told him to ask the following, and as it was being translated, he watched Geronimo closely:

"I have heard what you said, and why is it that more than forty men were afraid of two or three; why did you, after leaving the reservation, kill innocent men, women and children and steal their horses? The white people hold me responsible for all the innocent people that you have killed. You are no child to listen to every foolish story told you by the old women in your camp, and you know better than to believe them. You say that you heard that you were to be arrested at Apache, which was all nonsense, as there were no orders or thought of them. Yet you spread this story among your people to make them dissatisfied. You promised me in the Sierra Madres that the peace made then should last forever, but you have lied to me about it. When a man lies to me once, I want something better than his word before I will believe him again. Everything that you

did on the reservation is known to me, and it is useless for you to talk nonsense to me. You sent some of your people to Lieutenant Davis's camp, and then spread the report among your people that they had been killed by him, and by that means persuaded them to go on the warpath, sneaking through the country like a pack of cayotes, killing innocent people. You must make up your minds whether you will keep on the warpath or to surrender unconditionally. If you decide to stay out, I will keep after you until the last one of you are killed, if it takes fifty years."

He then told them to think it over during the night, and to let him know their decision in the morning.

After the conference, General Crook, the officers, scouts and packers returned to their camps, and the Chiricahuas went up the stream until opposite their camp and then crossed over and to their camp near the summit of the ridge.

Remembering that on the occasion of the former conference with Lieutenant Maus, I had found the guns of Geronimo and his party stacked up against a tree near our camp, with a squaw guarding them, I wished to know if they had done the same thing on this occasion. During the conference I walked back behind them in the edge of the timber near the stream and there, not fifteen yards away, were their guns stacked against the trees in a similar manner, ready for any emergency. On the other hand, not one of our party was armed at the conference. I could not help commenting on this incident, which so plainly indicated that Geronimo was as fully entitled to the title "Red Fox" as was General Crook to his Indian name of "Gray Fox."

During the day following the conference, our interpreters, Maria, Antonio, Montoyo and Conception, together with the friendly Apaches Alchise, Mike, Noche and Keyatana, were busy in the Chiricahua camp endeavoring to bring about an amicable settlement on the question of a surrender. They kept us in the packer's camp posted on the favorable and unfavorable signs, and the probable outcome of the final conference. All agreed that there was too much mescal in the hostile camp to bode any good results.

The Chiricahuas were at this time split up into three bands under as many different chiefs and war chiefs. The main band was under Nachez, with Geronimo as war chief; the second was under Chihuahua and Hosanna, and the third under Chats and Martinez. Since the surrender of Chats, in 1883, his band had remained on the reservation, and it was through his efforts, principally, when he was First Sergeant of Scouts under Captain Crawford, that the capture of the fifteen Chihuahuas was made in 1885, as related before. I believe that it is not overstating the facts when I say that ninety-five per cent. of the men, women and children killed during the Geronimo campaign was done by Chihuahua and his about twenty "Cossacks of the Sierra Madres." He slipped through all the snares laid for him by the scouts of Major Wirt Davis's and Captain Crawford's commands. The troops guarding every water hole along the line could offer no resistance to his whirlwind dashes through their lines. He slipped into Fort Apache, in November, 1885, and killed twelve of the friendlies and carried off six of their women. He stole a bunch of horses out of a corral at White's Ranch when there was a lot of cow-boys guarding them who had remarked that they would like to see the color of a redskin that could get away with their horses. His party dashed into the various hamlets across the Mexican line and purchased what supplies of ammunition, mescal, etc., that they wanted, and made love to the Mexican women of those villages. When occasion demanded, they could ride one hundred miles in twenty-four hours and could nearly do the same on foot with as much ease.

When on these raids they cached their old men, women and children in the mountains, so as to not be encumbered with any impedimenta. Their commissary was tied on their saddles, or strapped on their backs when on foot, and consisted of dried beef or horse meat. The leaves of the "agave" (mescal plant) was roasted and furnished a good substitute for bread, meat and sugar. They carried water in a canteen made from the large intestine of a horse, and which, empty and dry, made no weight to carry.

In their raids they always traveled along the summits of the ranges, the better to observe the movements of pursuing troops, and so that they could rest when necessary without much danger of molestation.

Miners and prospectors were their legitimate prey, they believed, and could, by killing them, obtain guns, ammunition and other supplies, as well as fresh ponies. Yet, while they had many opportunities to shoot soldiers when they were hidden behind rocks or other protection, yet they seldom attacked them except when in self-defense.

This, then, was the character of Chihuahua, who now proposed to surrender unconditionally to General Crook.

On March 27th, about noon, another conference was held about fifty yards above the place where the first council took place, and in a thick growth of timber. General Crook seated himself at the foot of a large sycamore tree, while Geronimo and the other chiefs squatted about ten paces in front of him.

At this conference, Chihuahua took a leading part and, after making a long and eloquent talk, surrendered his band unconditionally. He surpassed Geronimo in his resourcefulness of expressions and flowery similes, and it could be seen readily that he was doing his very best to make a good impression on the General. However, General Crook knew his man perfectly and landed the slippery eel like a diplomat.

While not being able to give all of Chihuahua's long talk, the following is, in substance, what he said: "The sun is looking down to-day on us, and the earth is listening to what we say; the one who makes the wind and the rain is now speaking to us, and tells me to speak the truth as he has told you to come here to listen to us. You have never lied to us, and I will not lie to you. I am satisfied with all that you have said to us, and I and my people will surrender to you, and want you to be a father to me and my people, and treat us as your children. The rain, the grass and the wind seem softer when you are with us, and we feel that you must be the one who brings it. I have traveled from mountain to mountain, and from water-hole to water-hole, and have never felt happy until to-day, when we know that all this is over and that you are to be our father. We want you to feel

good towards us and not listen to what bad men say about us. I now surrender to you and will go with you and will shake your hand."

After the conference was over and while I was talking with Captain Roberts, I noticed Geronimo watching us closely, as if trying to judge from our expressions what we were saying. I instinctively felt then that he had no intention of going back to Fort Bowie; but to make certain as to the result of the conference, I went up the creek and mingled with the Chiricahuas, to learn, if possible, their intentions.

I learned enough to satisfy me that General Crook had, in his efforts to bring Chihuahua to terms, been playing too strong a game, and that he had aroused the jealousy of Nachez and Geronimo, who considered themselves the chiefs of all the Chiricahuas and that they were entitled to more consideration during the conference. The idea of Chihuahua, a sub-chief, receiving more notice during this conference than had been given him had rankled in his breast, and he, as I believed, intended to show General Crook that Chihuahua was not the whole push.

Then, also, Chihuahua had surrendered unconditionally and agreed to go wherever he was sent, while Geronimo had insisted that they be allowed to return to Fort Apache, and did not wish to accept the General's terms of being sent to some isolated post on the Atlantic Coast for two years, they being allowed to take their families with them.

However, the General had insisted that those were his terms, and that they might either accept them or take the warpath again.

Geronimo had looked to Chihuahua to back him up in their demands to be allowed to return to Apache, but the latter, knowing all the devilment of which he had been guilty, was only too glad to accept the conditions given him. Thus the conference broke up, with a feeling of dissatisfaction among a portion of the hostiles as to the result.

That night pandemonium again reigned in the camp of the Chiricahuas, and the Apache yell could be frequently heard and an occasional shot was fired.

Later, these shots became more frequent, and were directed over the officers' tents and in the direction of the packers' tents, so that my men became nervous. I soon became convinced that all this rumpus was but another big drunk and, possibly, with the intention of letting the General know that they, or some of them, were not satisfied, and that they were in an ugly humor.

About 9 o'clock that night Lieutenant Maus came to our camp and said that Captains Roberts and Bourke wanted to see me at their tent. I immediately reported there, and found them sitting on the blankets that were spread out on the ground, and they asked me to take a seat with them. I felt before a word was said that, at Lieutenant Maus' instigation, I had been sent for to obtain my views as to the situation.

They asked me if I thought the Chiricahuas would go in to Fort Bowie; if I thought they would start for Silver Springs to morrow, or will they go to San Bernardino, and generally what I believed was their intentions.

I replied first by asking them a question, and that was: "Did the Chiricahuas promise the General they would go to Bowie, and especially did Geronimo and Nachez make such a promise?" They replied to both that such promises had been made; and then I said that I had never known these Indians to break their word with General Crook. I then told them that I did not think they would go as far as Silver Springs, although they might go as far as San Bernardino Creek, but that they would not go into Fort Bowie, although that if they could be taken as far as Silver Springs, they would then go on into Fort Bowie, for then they would have Captain Smith's troop of the Fourth Cavalry behind them.

I then said that they were now in a drunken condition and that the next day they would be as ugly and cross as a bear with a sore head, and would not travel far; they will have more mescal to-morrow night, and then they will want to travel a still less distance. If we can get the troops behind them they will go all right.

We learned the next morning that Nachez had shot his squaw in the leg during the night. Early in the forenoon,

Geronimo and all of his band mounted their ponies and rode off yelling and howling like so many devils. They shot at everything in sight and were literally in a drunken frenzy. There is no doubt but what Tribolett sold many a bottle and canteen of mescal that night.

Chihuahua and his band remained in camp, which was another evidence as to how the wind blew, and was a sure sign that they intended to keep their word.

About sunrise that morning, Lieutenant Maus told me that the General would start back for Fort Bowie as soon as he could have his breakfast. I at first thought that this would be an excellent opportunity for me to have a quiet talk with him, and I therefore told the packers to wait until after we had breakfasted before coming to the mess canvas, but when it came to expressing myself, I thought better of it and said nothing about his going at this time. I had thought that it would have been far better for him to remain and bring in these people with him, and I wanted to tell him so, but I feared he might tell me it was not my business, and so I let the opportunity pass.

I knew that he was well acquainted with the circumstances; that he knew the feeling between the two bands; that they were at loggerheads, and no one there could control them as he could, and no one understood the Indian character better than he did.

However, after finishing his breakfast, he said good-bye, and started for Bowie.

(*To be Continued.*)

THE AUSTRIAN ARMY AND SCHOOL OF MUSKETRY.*

By Sergeant FRANK BREZINA, Troop "I," Fourteenth Cavalry.

THE Empire of Austria, or now more properly speaking, the Empire of Austria and Kingdom of Hungary, has a population of 49,000,000 people. The official language used by the government and by the military authorities is German. The history of this state has been one of continuous strife, due principally to its many different languages and nationalities. There are twelve principal languages spoken, namely, German, Bohemian, Hungarian, Polish, Italian, Serbian, Slavonian, Croatian, Russian, Romanian, Slovak, Ruthenian. Besides these, there are numerous dialects, and a person traveling will pass in a single day many villages, all speaking different dialects.

You can easily see that this condition of affairs would be constantly causing trouble. The Hungarians are jealous of the Austrians, and so on all the way through. The strong hand of the Emperor Franz Joseph I. is all that has kept the empire from civil war during the past fifty years. As a result of their distrust of one another, and their desire to uphold their own language, the Austrians and the Hungarians being the two strongest factions, each maintain a separate army, having only a very loose connection with one another. Although the official military language is German, all individual instruction is given in their own particular regimental language, and each non-commissioned officer is required to know enough German to carry on official business.

The recruits report on the 1st of October each year, and it means as much hard work for the officers and instructors

* Read before the class of the School of Musketry at Presidio of Monterey, in June, 1907.

to break them into the commands in a strange language as to accustom them to the drill movements.

The country is divided into 102 recruiting districts. Every male citizen capable of bearing arms becomes liable to military service upon becoming twenty one years of age. Those who are exempted for physical reasons or otherwise must pay a certain sum into the military pension fund in proportion to their incomes. Those passed as fit for service are divided into three classes. The first lot form the standing army, and serve three years in the line and seven in the reserve of the army, and two years in the reserve of the "Landwehr," which is only brought into service in case of invasion.

The second class serves two years in ranks and ten years in the reserve. The third class forms what are called the "Ersatz Reservisten." This consists of men who have slight defects in sight, hearing, etc., or who are the sole support of their families. They receive eight weeks' training in ranks, and are in the "reserve" for twelve years.

The combined armies of Austria and Hungary have 110 infantry regiments, each consisting of four battalions, and in case of war two reserve battalions. A battalion consists of four companies. The companies of each regiment are numbered from one to sixteen. In time of peace a company has a strength of ninety-seven men, which in case of war is brought up to 265 men. Each company has one ammunition wagon, one provision wagon, and each battalion has three baggage wagons, one for the staff and one for every two companies.

Each infantry and cavalry regiment has a pioneer detachment, consisting of one officer, eight non-commissioned officers and sixty-four privates. The peace footing of a regiment is about 1600 men, and the war footing, counting the reserves, about 6000 men.

Besides the infantry, which composes the main strength of the army, there are what are called "jäger battalions," which correspond to our scouts.

The cavalry consists of fourteen regiments of dragoons, sixteen of hussars and eleven of lancers. At the present

time all are equipped alike, and six troops form a regiment. Each cavalry regiment has one platoon of pioneers and one platoon equipped for signal and telegraph service. In time of war or peace the number of cavalrymen of a troop is 150. The machine guns are attached to the cavalry.

The artillery is divided into field and fortification artillery. Besides these, there are fifteen battalions of engineers, one regiment of signal corps, and three regiments of troops for transportation service.

A school for all branches of the service, called the Imperial and Royal School of Musketry, is located at Bruck on the Leitha, about twenty-six German miles south of Vienna.

It is very difficult to draw a comparison between their school of musketry and ours on account of the great difference in men and material. There they have a special need for thorough instructors in every arm on account of the many different languages and nationalities and the fact that many recruits have never even had a gun in their hands before.

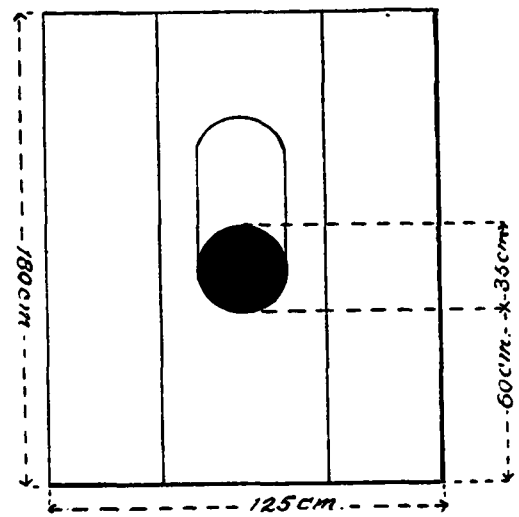
The men selected to attend the school are officers and first sergeants from the army at large—one from each regiment. Officers about to be promoted to captain are also sent here for special instruction. The school is intended not only to teach shooting, but also gymnastic drills, with and without arms, and to obtain uniformity throughout the service. The school has also a further object, such as to make experiments, conduct trials and investigate all improvements in small arms; to study the arms of other armies and publish their observations to the service; and in fact to make practical use of everything that has to do with target practice.

During the summer there are two courses of instruction, each course lasting six weeks. For a week or so after each regular course all candidates for staff positions are called together for special instruction and a sort of practical examination.

From time to time during the summer various organizations are sent there for field practice, and many very interesting exercises and experiments are carried out. For

instance, just imagine a skirmish run by a whole regiment. It would take too much time to try to describe them now, but it may be well to say that the whole object of the training in target practice of the Austrian army is to teach the men to shoot at objects on the ground and under conditions as near actual war as possible.

On account of the many different languages, on the skirmish line all fire commands are repeated by the men. The object, distance and kind of fire are given in German and details explained in the regimental language. Then the fire



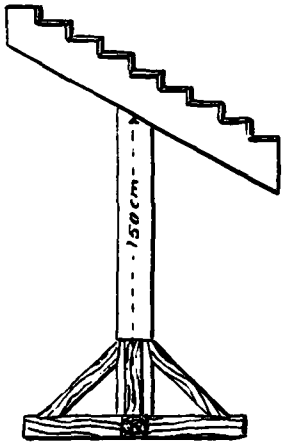
THE SCHOOL TARGET.

is increased or diminished in rapidity by the men, according to the varying distance and size of the targets, without further command. The fire discipline is excellent.

A skirmish run is always made with full pack weighing sixty-two pounds, and after a practice march.

When a soldier learns the use of his rifle he shoots no more at the bull's-eye target; but all his firing after that is done at silhouette figures. The school target is shown in the illustration. The center band is white, the two outer vertical bands are light blue, the oval outlined thereon rep-

resents the limit of dispersion of correctly aimed shots. The silhouette figures are of plain light blue, khaki, or colored to show details. Many forms of silhouette figures are used; the principal ones are the standing, sitting, kneeling and prone. Sometimes they use figures with plaster of paris heads, which break upon being hit. Section or platoon targets are made up of figures of different sizes. Figure and section targets are used as fixed, moving and disappearing targets. In the practice at known distances, on the target range, when moving targets are used they are made to move in quick



A GUN REST FOR FIRING STANDING.
Sand Bags are Used When Lying Down.

time for a distance of ten paces. The disappearing targets are visible for ten seconds, and one shot is delivered at each appearance of the target. Advancing and retreating targets are also used. The field is previously prepared with iron rails and trolly wires, upon which the figures move with the speed of a man at double time. Mounted figures are given the appearance of a galloping horseman, by balancing them on a pole and moving them rapidly down the track.

For firing at long ranges larger groups are used, representing lines and columns in battle formation. For field firing, targets representing lines and columns of infantry, cavalry, guns, caissons, etc., arranged as in action, are made to move, or disappear, so as to show different phases of a battle. To ascertain the effect of fire at long ranges on targets representing columns, only one hit by each bullet is counted. This is effected by placing horizontal lines at certain distances from the top edges of the target, in rear of the first line, counting on the rear target only the hits above the lines. The position of the horizontal lines is calculated from the trajectories, allowance being made for the slope of the ground on which the targets are located.

The demonstration firing is intended to illustrate the accuracy of the rifle and the effect of fire under different conditions. This firing is done by good shots in the presence of all the members of the company, and takes place as early as possible during the target practice season. The following are some of the exercises: To show the center of impact of different rifles; the effect on the fire of having the bayonet fixed; the trajectory of the bullet; the influence of the wind, and firing at night or firing in a heavy fog. The allowance of ammunition is sixty rounds for each officer and 150 rounds for each enlisted man.

The rifle used throughout the army is the "Mannlicher repeating" rifle, model 1895. This gun has no peep sight, no wind gauge and no sight cover. It is provided with a sling for carrying, which, however, can not be used in firing. The loading is done from a clip, and is very similar in appearance to our own rifle. After having fired in the Austrian army for ten years without using a sling I have found, during my short period of service in the United States army, the use of the sling indispensable. Every front rank man in the Austrian army carries a spade, and the rear rank man a cooking kit for both. The blanket-roll is never used, but everything is carried in a pack and knapsack, which is strapped to the shoulders. Each man carries in time of war 120 rounds of ammunition.

Everybody at the school is kept busy all the time. In order that they may become good instructors in the short time available, every minute is employed with shooting, gymnastics, lectures on the repair and preservation of small

arms, general principles of construction and mechanism, and things of general interest to marksmen.

An interesting thing about their gallery practice is that they use both the bull's-eye and silhouette figures, and, by regulations, they must use the gallery every day.

They hold no large competitions as in this country, but they have local competitions amongst the various organization in their garrisons, which creates great interest.

The Royal School of Musketry is an old institution in Austria, and has furnished troop commanders with excellent instructors for many years. It was the outgrowth of necessity and has proved to be indispensable.

NOTE.—Sergeant Brezina was the son of a merchant in Vienna. After attending the high school there for four years, he was admitted to the Austria-Hungarian Cadet College at Budapest, from which he graduated and was promoted to a cadet officer of the Twenty-eighth Bohemian Infantry August, 1899, and in November, 1900, became a second lieutenant. As a lieutenant, he was instructor of the regimental non-commissioned officers' school for three years. In 1903, he took the first prize in a rifle competition among the four regiments at Budweis, Bohemia, and the regimental prize of a saber. During the winter of 1903, he, while attached to the Twenty-fourth Field Artillery and attending their school of application, passed the entrance examination for the War College. However, as he was unable to live on his salary, and his father being unable to contribute more for his support, he resigned from the Austrian army in March, 1905, and came to the United States and enlisted in March, 1906. He is now on duty at the School of Musketry, at the Presidio of Monterey, California.

Reprints and Translations.

THE MACHINE GUN IN THE RUSSO-JAPANESE WAR.*

BY CAPTAIN HENRY VICTORIN, AUSTRIAN CAVALRY.

IN the Russo-Japanese War the machine guns demonstrated the necessity of their existence and proved themselves to be a necessary adjunct in battle, especially in connection with cavalry. The mere fact that both sides in that war continually endeavored to increase the number of their machine guns illustrates the high importance they will play in future wars.

At the opening of hostilities the Japanese organized four detachments of four guns each, increasing the same by three detachments of six guns each shortly thereafter, they being of the Maxim and Hotchkiss model. Very soon thereafter Japan purchased more of these guns in the United States and Europe, and machine guns were also taken from the ships and attached to the army, and the arsenal at Tokio commenced to manufacture them, working day and night. At Mukden Japan had more than 200 and at the close of the war more than 320 machine guns. Each division finally had twelve to sixteen machine guns, and several detachments were at the disposition of general headquarters.

Russia had adopted the Maxim machine guns, which were furnished by Vickers' Sons & Maxim in Erith (Kent). At the beginning of hostilities there was but one company avail-

*Translated from the *Austrian Cavalry Monthly*, for April, 1908, by Sergeant Harry Bell, Corps of Engineers, U. S. A.

able for service in the field, not counting the machine guns then at Port Arthur and Vladivostok. That company fell into the hands of the Japanese in the battle at Tjurentschong, but not until it had delayed the advance of the Japanese for an entire day and thereby covered the retreat of the Russian troops.

As soon as the important results achieved by machine guns in the first engagement became known Russia purchased in all haste more, which were organized into independent companies and placed at the disposition of the divisions. These newly formed companies were sent to the front in skeleton formation, and were fully organized en route and on the field of operations. Instruction in the handling of the guns was given as far as possible on the long ride on the railway cars; also at every stopping place, and finally, for a couple of days at the place of destination. Fortunately competent officers had been selected to command these machine gun companies, officers with enthusiasm and energy, and they soon succeeded in bringing the companies to a high state of efficiency.

The first machine guns, a detachment of sixteen guns, joined the Russian army from Europe at the engagement of Datschitsao. At the battle of the Schaho, in October, 1904, the Russians already had thirty-two; at Mukden, in March, 1905, eighty-eight machine guns; and at the close of operations there are said to have been 400 machine guns with the army.

Originally the Russian machine guns were drawn by two horses, but because their mobility was insufficient it was decided to organize a part of them into mountain batteries, to be transported by pack animals. Each machine gun had a supply of 6000 rounds of ammunition, and there were an additional 4000 rounds for each in the ammunition train. At the close of operations the Russian cavalry had attached to it sixteen mounted machine gun detachments of from two to six guns each, mainly of the Rexer model.

The employment of the Russian machine guns in the fortified positions consisted generally in placing machine gun companies, machine gun platoons, or even sections, by themselves at important points behind the breastworks, in such position as to have a clear field of fire to the front and flank, and especially to enable them to take under fire obstructions or cover in the field in front which might be utilized with advantage by the attacking enemy. As machine guns present but a small target to the enemy, and as they can sweep with their fire a large area from a narrow point, they have often attained great results.

It was the fire of machine guns pure and simple which frustrated many a Japanese attack, as, for instance, the attack of the Brigade Nambu, in front of Mukden, on March 7, 1905; but it was found eventually that machine guns had best be held in reserve, and utilized only when the enemy had approached to within close distance, *i. e.*, when he prepared for the final charge.

The few machine guns at Port Arthur did excellent service. They proved themselves a valuable auxiliary for defense, even at extreme distances.

The method of attack employed by the Japanese compelled the Russians to place their machine guns at prominent advanced points on the flanks, so as to enfilade the front of the attacking party. They were especially valuable in the defense of such advanced and exposed points on the flank which were held by weak forces only. As a rule the machine guns were under cover, in trenches provided with roofs.

In the fortified position on the Schaho, the use of machine guns allowed the Russian commander to materially decrease the forces occupying the position for defense. Their fire gave sufficient time to the resting troops to reach the defensive position in good time in case of sudden attack.

Machine guns also accompanied detachments in offensive movements, and the way the Japanese used them showed clearly that they did not diminish the force of the attack, as had been feared, but, on the contrary, very much increased it. In consequence of the experience gained during this war, the Japanese authorities took steps, after the war, to attach half a machine gun detachment of three guns to each infantry regiment, to be utilized either in that form or to be concentrated, according to necessity, in each brigade. Each cavalry

regiment will also receive a machine gun detachment of four guns.

According to the new Russian regulations, each infantry, sharpshooter and reserve regiment is to receive a machine gun detachment permanently, to consist in time of peace of two, in time of war of four guns, to be carried on pack animals. For the cavalry sixty-four machine gun detachments (mounted) have been organized, or are in process of organization. Total of machine guns in the Russian army, 1056.

In any case the late war has clearly demonstrated that the machine gun is an arm which must be present in modern armies in sufficient number to assure success, and that the employment of quick firing or machine guns is absolutely essential in all modern field fortifications.

We will now give a few instances of their use in the Russo-Japanese War.

(a) *Employment of Machine Guns With Cavalry in Reconnaissance.*

A machine gun detachment accompanied the First Japanese Cavalry Brigade, under Major General Akijama, in its reconnaissance on May 30th towards Wafangou, and played a great rôle in the engagement ensuing with the Russian cavalry brigade, under Major General Samsonow, which was also reconnoitering towards Wafangou, but which had no machine guns attached. When at the opening of the engagement the advanced Russian frontier guard troops commenced to evacuate Indsjatun at about 1:00 P. M., and were closely pursued by Japanese infantry in the open valley north of that village, Major General Samsonow, just then arriving with his brigade, ordered two Cossack troops under command of Lieutenant Colonel Zeltuchin to attack the Japanese. In the meantime a Japanese squadron also commenced the pursuit and played havoc with an advanced Russian detachment of thirty mounted men.

Lieutenant Colonel Zeltuchin, who at that moment was west of the railroad with his Cossacks, formed his two troops to the left and attacked across the railroad on the Japanese

squadron, whereupon the fleeing Russian detachment turned about and also attacked. As both opponents perceived each other at but a very short distance, and as there was hardly time to take up the gallop, the shock of contact was great. The Japanese squadron was driven back and pursued towards the village of Judsiatun. But now the Japanese machine guns, posted in the outskirts of that village, became active; they at once compelled the Russians to turn about and offered thereby an excellent opportunity for counter attack, which was immediately taken advantage of by three fresh Japanese squadrons.

In the course of the engagement Major General Akijama, who had not planned any energetic attack, and who brought but a few of his squadrons into action, attained the object of his reconnaissance in forcing the opposing hostile forces to deploy by the use of his infantry and machine guns, and thereby ascertaining the enemy's strength.

(b) *An Enveloping Detachment by a Cavalry Brigade and Machine Guns.*

During a critical moment in the battle at Wafongou on July 15, 1904, when a flank detachment of three battalions and one battery, sent by the Russian General Glasko, under command of Lieutenant Colonel Perfilew, played havoc at Tschendsjatum with the Third Japanese Cavalry Regiment, which had dismounted for fire fight, the fire of the machine guns of Major General Akijama's brigade, appearing suddenly on the left flank of the Russians, succeeded in stopping the attack of the detachment under Perfilew.

In the same manner, on October 10, 1904, the battle of Honkeiho was decided in favor of the Japanese by the interference of the machine guns of the Second Japanese Brigade.

(c) *Machine Guns in a Defensive Position.*

During the engagements around Port Arthur the machine guns proved themselves to be a new means of defense, of immense destructive power, which was made more difficult to avoid on account of the facility with which the posi-

tion of the guns could be changed. To silence these machine guns, mountain guns and quick firing guns of small caliber were brought as near to the front as practicable. In their attacks the Japanese often had to cross entirely open stretches of ground, suffering immense losses from the fire of machine guns. It was machine gun fire which compelled the Japanese to resort to laboriously constructed trenches, the use of light wooden mortars for the purpose of throwing cases filled with schimose and hand grenades; and thus proved their importance in defensive positions.

In the engagements on the Kwantung Peninsula, for the possession of the Green Hill, on July 27, 1904, the Japanese infantry, attacking the center of that hill from about 4 P. M. until dark, were finally driven off by machine gun fire, suffering enormous losses.

It was the fire of the machine guns posted on a high hill* which, on September 19, 1904, in the battles for the possession of that hill, inflicted immense losses on the storming Japanese infantry. On the same day an enveloping movement miscarried also on account of the fire of a machine gun battery posted somewhat to the rear of the Russian position.

On the 26th of November another attack on the same hill came to naught on account of the incessant fire of the machine guns, although the Japanese artillery, firing since daylight, had prepared a breach in the Russian fortifications. On that day the Japanese columns commenced the attack only at 1:00 P. M., but the machine gun fire drove them back, as it did in other succeeding attempts.

Two special points concerning machine guns are mentioned in the confidential circular of General Oku, issued on February 20, 1905, before the battle of Mukden, to the officers of the Second Army Corps. Of these we will mention the second one.

"Any position once gained must under no circumstances be again evacuated; if you expect an energetic counter attack, you must prepare your position with machine guns and hand grenades. The machine guns are especially suitable in such cases; but to get the best results from them,

*The high hill referred to here must be "302 Meter Hill."—TRANSLATOR.

they must be kept perfectly clean and all parts must be well oiled and carefully examined. Each and every repair necessary, even the most insignificant, must be done at once, even in the most pressing moments of a battle, and machine guns must never be isolated."

Transportation of Machine Guns.

Switzerland, where ten years ago the first European machine company organizations were formed, transports its machine guns on pack animals; in all other European countries they are transported on wheel mounts.

The latter method was found unsatisfactory in the Russo-Japanese War, as they were seldom able to bring the machine guns just where they were wanted to enter an action, that is by the shortest road. Therefore during the war the guns were carried on pack animals in part, because a pack animal, led by a mounted man, can quickly and easily come to any point in the terrain which a mounted man can reach.

Now we shall consider briefly the question of machine guns in Austria.

In order to adopt the best permanent organization of machine gun detachments, consisting of capable, well instructed officers and men, and at the same time in order to gather data for firing regulations for machine guns, a machine gun detachment of four Schwarzlose machine guns was organized in 1906 at the Imperial School of Musketry in Bruck, which was in existence from the beginning of June to the middle of October of that year. In the comparative test of the different models, the Schwarzlose model was found the best. During the three months of its existence the four guns of this machine gun detachment fired altogether 266,000 rounds of ball ammunition, and there was no necessity for repairs to any part of the guns. The main advantage the Schwarzlose model has over others is its simple, solid construction, there being in the entire mechanism but one very strong spiral spring, and the breach consists of only twenty-four pieces, as against eighty-seven pieces and seventeen different springs

in the Maxim. A second advantage is its cheapness and that it is manufactured in Austria, and its cost is but one-half that of the Maxim, *i. e.*, 3000 crowns. In consequence of its lightness, this model is especially adapted for use with cavalry and in mountainous terrain. It comes to our service under the designation of M. 7. The Schwarzlose model has also been experimented with at Spandau, in Germany, in January last, but with what results we have not learned.

After our military authorities had decided on two requirements for the employment of the machine guns, namely, first, with infantry and in mountains, to be transported on pack animals; and second, with cavalry, the question of transporting the machine guns with cavalry had to be solved—whether by wheel or pack transportation. For this purpose one detachment was organized, in the spring of 1907, of four Schwarzlose guns with pack outfit, under command of Captain v. Mierka, and one detachment of four Maxim guns, with wheeled mount, under my command.

As commander of the wheel mount, it was but natural that I strove to obtain the honors for my detachment, and took the decided stand that mounted machine guns had their advantages over those carried on pack animals. I claimed that their mobility, and their almost constant readiness for action, were the advantages of wheel mounts, and also laid particular stress on their large and immediately available ammunition supply, more than 15,000 rounds per gun. And finally, I emphasized the fact that the common occurrence of saddle galls with pack transportation was to their disadvantage.

But at the present time my opinion has undergone a decided change, caused, first, by the adoption of a new pack saddle, and, second, by experience gained in the Russo-Japanese War, to the effect that the machine gun is not a part of the artillery, but a small arm. The new model pack saddle, the Schaller model, has many advantages over the old one, in that there is no unusual pressure of the saddle; the pack animal can travel at any and every gait; the load is small, as saddle and load set snug on the animal, and that the loading and unloading takes but very little time, etc.

This pack saddle, Schaller's model, received a thorough trial last year by cavalry machine gun detachments. Two models were tried, Nos. 6 and 7, the latter being about six centimeters shorter, and, by changing the different loads, can be used as either a gun pack or ammunition pack. This fact is of great advantage in case of loss of an animal carrying a gun. This change takes but a minute, and the gun and ammunition are fastened on the pack in the simplest manner possible, thus increasing the degree of readiness for action, and we can now get ready for fire action in from twenty to thirty seconds, while the Russians and Japanese required from two to three minutes for getting into action.

The test as to saddle pressure was very severe and minute, the animals being required to climb declivities, take high and broad leaps, and to gallop over long stretches, and were unsaddled but very seldom. The jumping was executed in fine manner, and it was easily seen that horses packed with guns and ammunition would take an obstruction quicker and easier than horses ridden by troopers. The reason for this may be found in that the pack animal has a free head, and that the load does not leave the saddle at the moment of jumping, nor fall into the saddle after the jump, as is the case with an inexperienced rider. And in actual campaign the pack horse will endure more with its 100 to 105 kilograms dead weight than the saddle horse.

Furthermore, the pack system is superior to the wheel system, in that it can not be easily distinguished as a machine gun pack outfit. At the maneuvers of our cavalry division the pack outfit detachment was always reported by patrols and scouts as a hostile half squadron or squadron, while the wheeled detachment was invariably reported as four guns, especially when I, in the beginning, marched in the formation prescribed for field artillery.

The reason that the machine gun detachment using the pack transportation is as mobile as the squadron and can gallop for a long time, is that it can get through fences and obstacles where a squadron can, while the detachment using wheel transportation has to make detours and keep on the roads.

In the test spoken of above the detachment under Captain v. Mierka, during the cavalry maneuvers near Stockerau, made the following trip fully equipped, on bad roads and in bad weather: From Zissersdorf to Bruck, a distance of 270 kilometers, in six days; the first day, 42.9 kilometers in six and one-half hours; second day, 47.5 kilometers in six and one half hours; third day, 54.1 kilometers in eight and one-half hours; fourth day, rest; fifth day, 57.1 kilometers in nine hours; sixth day, 67.4 kilometers in eleven hours.

In this test, the horses carrying the pack saddle, model No. 7, came in without a scratch or saddle gall; those who had the longer pack saddle had a few saddle galls, especially on the loins, caused by the saddle rubbing the loins of the animals, and but two of the saddle horses had saddle galls. During the entire time no saddle galls or abrasions were noticed on the pack animals, and the above mentioned saddle galls were completely healed in three days after reaching Bruck. The animals did not mind their loads; none of them played out or showed any signs of being tired. Considering that the last two days were almost forced marches, as would happen but seldom in actual service, the results achieved were highly satisfactory and the pack saddle, Schaller model No. 7, may be considered as the best obtainable for the purpose, and it has been adopted by nearly all of the European powers.

Ammunition for Machine Gun Detachments.

It is true that the wheeled system for machine guns has the advantage in the matter of carrying ammunition. But it is an open question whether or not it is necessary to carry so much ammunition, more than 15,000 rounds per gun.

The Russo-Japanese War answers this question. Both sides found that at the most 4000 to 5000 rounds per gun were necessary, and in most cases far less than that amount. In the first battle at the Yalu between the corps of General Sassulitsch and the Japanese army under Kuroki a Russian machine gun company had a chance to distinguish itself. In the last phase of the battles there, on May 1, 1904, at Hamatin, four battalions and one machine gun detachment of eight guns of the Russians were opposed to the entire Second Japanese Division of ten infantry battalions, thirty-six field guns and twenty howitzers. The attack of the Japanese commenced at 7:30 A. M.; and it is said by reliable reports of different observers that it was the fire of the machine guns which was mainly instrumental in defeating the Japanese attack during the entire day. After 3:00 P. M. only the eight machine guns and seven field guns and one company held the position, covering the retreat of the Russians. At 4:00 P. M. appeared the Japanese enveloping column, under Colonel Umesawa, which was immediately attacked by the single company remaining in the position, and the machine and field guns held their position for an hour after that, firing towards all sides on the Japanese, the machine guns having already lost half of their men and all of their horses. When the Japanese came to within charging distance and it was seen that the guns could not be drawn back in safety, they were made unserviceable, and the remaining men, led by three officers, cut their way through the Japanese and escaped. According to the Japanese reports the guns fired their last shot at 5:00 P. M. The Russian machine gun detachment of five officers and ninety-eight men lost in this battle two officers and fifty-four men and all of the horses.

In the last phase of this battle, lasting for an hour and a half, the machine gun detachment expended 35,000 rounds of ammunition, or 4375 rounds per gun.

In the battle of Liaoyang on August 30–31, 1904, a Russian machine gun detachment was posted in the southern outskirts of Gudsiadsi from 10 A. M. on the 30th to 7 P. M. on the 31st, and during this time expended 26,000 rounds of ammunition, or only 3200 per gun.

Of course there were exceptions to this. The Japanese captain of cavalry, Madsuda, commanding the first organized Japanese machine gun detachment, reported concerning the expenditure of ammunition in the battle of Mukden as follows: On March 3, 1905, Platoon "A" fired 22,000 rounds; Platoon "B," 15,000 rounds; Platoon "C," 3600 rounds per

gun or an average of 6700 rounds per gun, and the firing was almost continuous.

These examples show clearly that it is not necessary to carry 15,000 rounds per gun, and that in general it will be sufficient to have three pack animals per gun, carrying on the average of 5000 rounds per gun.

During the course of the campaign the Russians and Japanese improvised methods of utilizing their machine guns by taking them off their carriages, as the latter formed too large a target for the enemy to fire at.

Concerning the wheeled mounts, the commander of the machine gun company attached to the First East Siberian Sharpshooter Division, said in a lecture in St. Petersburg after the war: "The machine guns with which the companies took the field had too clumsy a carriage, which was entirely unsuited for going into attack; the axles often bent and the wheels cut too deep into the ploughed ground."

The above mentioned Captain Matsuda, in a lecture given by him in Tokio, mentioned the different carriages adopted or tried after the detachments had been organized, the great difficulties encountered in the advance, and describes the change from wheel to pack transportation during the campaign. Towards the end of August his detachment disembarked at Dalny and immediately commenced the march to Liaoyang. The roads were bottomless from rains, in the mountains they were steep and stony, so that the march was extremely difficult and halting; therefore he had serious doubts whether or not his detachment could keep up with cavalry.

When on the 21st of September the detachment finally reached the Second Cavalry Brigade in the vicinity of Kaio southeast of the Jentai coal mines, he reported to Prince Kanin concerning his experiences during the march and his fears concerning the mobility of the machine guns. The Prince ordered the construction of tripod mounts and to try and pack the guns and tripods on pack animals; six days later two of these wooden tripod mounts were finished and showed at trial that they would prove serviceable. Consequently tripod mounts were constructed for the remaining

four guns, and experiments were made to make a pack saddle suitable for guns and mounts. The first two finished tripods and their guns accompanied on September 28th the Sixteenth Cavalry Regiment on a reconnaissance. Experiences gained in this reconnaissance led to a change of the entire system, but before this was completed the advance of the Russians across the Schaho interfered with carrying that through.

The fears that wheel transportation would not prove satisfactory were realized in the subsequent operations, the battles on the Schaho. When on October 9th the Second Cavalry Brigade received orders to advance from Kaio in the direction of Boensiku, and when consequently it advanced via Takkahoschi towards Kiaoto, the machine gun detachment was unable to keep up and, under guard of a troop of cavalry, had to take the better road via Inschuputsi and Anpin.

On October 12th the brigade left Kiaoto at early dawn through the Schoenchulin defile, which was unsuitable for vehicles, and had great difficulty in holding itself against the advance of the superior Russian force advancing from the vicinity of Boensiku. Therefore Captain Matsuda, who could not advance with his wheel carriages, decided to have his men carry four guns and three tripods and the ammunition to the battlefield. Two guns, the empty carriages and the ammunition wagons were left behind in the defile.

The detachment reached the battlefield where the Fifteenth Cavalry Regiment was engaged with two hostile battalions at 10:40, A. M., and it immediately went into position and opened fire. In spite of the late arrival, as reported by eyewitnesses, the Second Cavalry Brigade had to thank the effect of the machine guns for their success. It is but natural that Captain Matsuda should be of the opinion that had his detachment had a more mobile transport system, the decision would have been reached so much the sooner and more effectively.

During the pause in the operations on the Schaho the Second Cavalry Brigade was charged with the reconnaissance on the right wing of the Japanese army, where one platoon

of the machine gun detachment was on outpost. The remaining two platoons, have again made experiments with the pack systems, but with no final result. But everyone was so convinced of the unsuitability of wheel transportation that towards the end of January all wheel transportation was replaced by pack transportation. As at about that time the brigade was sent from the extreme right to the extreme left wing of the army, there was plenty opportunity during this march to observe the operation of the new pack equipment.

During the engagements around Mukden the machine gun detachment was on the march from February 27th to March 20th; the new pack system gave entire satisfaction, and only five horses showed saddle sores. This was remarkable, as the detachment having to be always in readiness, was but very seldom unsaddled. One platoon once marched forty-four kilometers in five hours with all animals in as good condition at the end of the march as the saddle horses.

The pack system has the advantage over any other, because the pack animals, offering a smaller target, can be brought nearer to the enemy than the guns mounted on carriages.

ORGANIZATION AND TRAINING OF CAVALRY.*

(EXTRACT.)

By Lieutenant General v. BERNHARDI.

STRATEGICAL FORMATION OF CAVALRY.

NEXT to the concentration of our cavalry, it seems to me the most important thing is the reduction of the divisional cavalry to the lowest possible point in order that all the power of this branch may be united in the independent cavalry body, making it complete in every particular.

*Translated from the German by Captain George A. Skinner, Medical Department, U. S. Army, for the Military Information Division, General Staff.

In order to make a rapid reconnaissance, we must control the country between our army and the enemy's completely, and be able to drive the opposing cavalry from the field. Combat, however, demands union of the forces to win the disputed point.

Our opponents are often of a different opinion. They hold that a direct assignment of a stronger cavalry to the individual army column is essential. And also in our army the objection has been made that the problems of the divisional cavalry have become so many sided and important that here the addition of stronger forces is desirable, especially where no independent cavalry precedes the army.

I share these opinions, but notwithstanding, am not in favor of a stronger assignment to the divisional cavalry.

In the field operations of 1870–71 a greater part of our strong cavalry assignments were condemned to inactivity, while where it was needed it was often wanting. The same seems to have been the case in the Russo-Japanese War.

The demand for a stronger divisional or corps cavalry is always temporary, as war history teaches, and this need can easily be supplied by detached commands from the independent cavalry, as was done by Napoleon I., and was repeatedly done in the War of 1870–71. In any case this proceeding is much easier than the attempt to strengthen a weak independent cavalry from the divisional cavalry.

The chief necessity is always to drive the mass of the enemy's cavalry from the field. In order to accomplish this result safely, it seems necessary to take into consideration at the beginning of a war the well known disadvantages of a too weak divisional cavalry. In the course of the operations the victorious cavalry can easily supply this need.

While I assent to the hitherto existing formation, I am, on the other hand, convinced that our cavalry division of six regiments would frequently be too weak in war, and it appears primarily a disadvantage to divide the independent cavalry into equally strong detachments. Neither Napoleon nor Moltke deemed this advisable. To-day in France the divisions are of different strength, and in Russia a strong

cavalry corps is being organized, besides a strong corps cavalry.

How great the need for strength was shown in the expedition of 1870–71, where under the burden of many sided demands, the division frequently dwindled down until so weak that every battle had to be avoided, especially on the Loire, a disadvantage that made itself apparent not only on that account, but even where there was no cavalry enemy at hand, and only a few infantry were in the neighborhood.

In the future we will have yet greater distances to cover and, what is more important, we will have to operate more independently from the army than formerly. We will have to count on an equal, or perhaps numerically greater cavalry force, that encircle our flanks, threaten our advance operations and our communications with the rear. We will often be forced to keep our cavalry in the rear to protect the baggage, munition columns and trains. In this manner we must in the future protect our heliograph and wireless telegraph stations that maintain our communications with the main army over wide stretches of country; we must send scouting squadrons ahead; the demands will be so frequent for the division of the force into detachments, that the main body must not be allowed thereby to become too weak. The number required for patrolling will be much greater than in 1870, on account of the opposition of the enemy. Lastly, it will be necessary for us to solve independently many of the problems where formerly we had the assistance of the infantry; and for this purpose a greater number of firearms will be necessary.

Figuring for a division, three reconnoitering squadrons are necessary in front and on the flanks, three for the protection of the signal stations, front and rear, two squadrons for the protection of the baggage and columns, and thus a third of the division is used. From the remainder the patrol is sent out; often other detachments will be on the road for reliefs; detachments must frequently be sent out; what remains is clearly too weak for the conduct of a serious fight, and to aid them we are forced to the methods planned in France and Austria; that is, the union of the cavalry squadron and infantry battalion, and thereby rob the former of its mobility, which is its principal strength.

If, therefore, strong cavalry masses are needed to obtain the operative goal, it will be the purpose of the cavalry, on the other hand, to be governed by the terrain, the objective goal, the formation of their own army, and the arrangement of the enemy's forces, which may be very different under different circumstances.

In some places an independent brigade will be enough, but in others a division will be necessary, and in decisive engagements a cavalry corps must be used; in short, we need an extraordinary elastic organization of our cavalry, and the more so because in proportion to the strong modern army, the cavalry is relatively weak. Its complete strength should be used to the best advantage, and not a part forced to lie idle, as would result by a schematic division into numerous equal parts.

The scheme may be the liberation or the chain of initiative. Here it would represent a pernicious chain.

For peace, our present organization seems in general very good, inasmuch as it in no manner binds us in war times. Only it should be unqualifiedly recommended to change in time of peace the cavalry staff into cavalry inspections necessary in war time, with ammunition and supply columns, sanitary arrangements, signal detachments and small caliber machine guns, which seem to be better fitted for the cavalry than Maxims in such a manner that the mobility and independence of the arm is absolutely secure for operation as well as for combat.

Such a system offers all the advantages which are expected of a cavalry division in peace times, and preserves, on the other hand, the necessary uniformity of training and the cohesion with other arms and liberty of action.

War Formation of the French Cavalry.

In France, for example, a corps cavalry brigade is added to each army corps, beside the small divisional cavalry. But this in no manner seems to exclude the possibility of con-

tracting those brigades to divisions, or adding them to existing divisions as reinforcements.

The Service of the Divisional Cavalry.

It should not be assumed that the cavalry divisions should always be sent in advance of the armies, to form a cavalry screen ahead of the infantry advance. Even if there are sometimes reasons for such actions, it will be better in other cases to assemble the independent cavalry masses, the army cavalry, in front of the wings of its own army, and send them in a definite direction against the flanks of the enemy's cavalry. In such a case, the whole reconnoitering in front of the army is left to divisional cavalry. The same thing happens when, during a mutual advance of the hostile armies for battle, the advanced army cavalry must abandon the front in order not to get between two fires. Here it will also be best for the masses of horsemen to assemble towards the wings of the army to give room for the action, rather than retire behind the firing line.

The whole of the reconnoitering up to the attack and during the battle is the business of the divisional cavalry. This problem is, however, much more difficult to solve than in former wars, especially of 1870–71, because we must count on an active hostile cavalry, which was not then the case; the increased efficiency of firearms makes reconnoitering more difficult, and because in the future we shall have larger masses and greater distances to contend with. It will, therefore, be much harder to recognize the strength and formation of the enemy than formerly. Moreover, the fact that the small divisional cavalry will never undertake to pass the enemy's outposts by force makes reconnoitering considerably more difficult, and generally dependent upon the rapidity, stratagem, audacity and skill of the patrol. Also, taking advantage of favorable moments in battle is the business of the divisional cavalry. In most cases the screening of the army front is also their business, while the army cavalry is concentrated for offensive reconnoitering and the repulse of the entire reconnoitering force of the enemy. This activity

in itself is such an important and difficult one that it can only be done at all satisfactorily with considerable effort. Therefore, it will often be advisable to support the divisional cavalry in these actions by bicycle detachments and machine guns.

Apart from this comprehensive tactical activity, the whole interior service is part of the duty of the divisional cavalry, which at least is not an unimportant one, that of furnishing orderlies and messengers, maintaining communications with the somewhat advanced army cavalry, the support of the infantry on outpost duty, the collecting of tribute, protecting the signal stations and the like.

It is evident that only a well trained and not too small divisional cavalry will be able to accomplish all this. If the corps marches in close order on a street, it is often advisable to send part of the rear cavalry division to the head of the column.

Numerical Weakness of the Cavalry Division in the Franco-Prussian War.

It has been proved that the size of the cavalry division was often melted away to five or six troops, whose duty it was to do all the reconnoitering of the vicinity. That such a small force cannot render much service in modern battle is evident. In 1870–71 when this branch of the service did not carry any useful firearms, the possibility of obtaining results dwindled down to nearly nothing. Therefore it became necessary again and again to add infantry detachments to the cavalry divisions to enable them to perform their reconnoitering service and provide for their safety.

Protecting the Transportation of the Cavalry Division.

The point in question is not only the baggage and ration wagons of the cavalry, but also the forage column and ammunition reserves, that are of necessity added to it as soon as the cavalry leaves the army for several days or acts independently altogether. In 1870–71 it was not necessary to protect this transportation especially, as in general one did

not get very far from the army, and enterprises from hostile cavalry were not feared. To-day the conditions are altogether different. The transportation columns not only need direct protection, but the surroundings must be reconnoitered in order to avoid ambush and to learn early of the approach of the enemy's cavalry. It is therefore not only necessary that the entire personnel of the columns be armed with good firearms, but that the escort be of sufficient strength to discover the enemy early, and if he is not too strong, to hold him off.

General Mischtschenko's Raid on Inkou.

When General Mischtschenko made his raid against Inkou at the beginning of 1905, the first thing he encountered at that place was a battalion of Japanese, who were later reënforced by a second one.

A German cavalry division, including pack train, cannot in any case bring more than 3000 guns into a combat. In reality, it is evident that the number, especially in independent operations, requires the most careful safety measures and mounted reserves, and can never be made fully available. It will in some cases be difficult for a cavalry division advancing under such circumstances to master one battalion.

DIVISIONAL CAVALRY.*

By Count GUSTAV WRANGEL, Austrian Cavalry.

IN my pamphlet, "The Cavalry in the East Asiatic War," published in the CAVALRY JOURNAL, for January, 1908, I have pointed out a grave error committed by the Japanese commanders when they assigned three squadrons (one regiment) to each infantry division, considering the weak force of cavalry at their disposal. An excellent study prepared by Captain Ignaz Rodic, of the Austrian General Staff, and published in the *Danzer's Army Journal*, June 26, 1907, he states that my opinion is not justified. Captain Rodic is of the opinion that the exceedingly good aptitude for mounted service of the Japanese, which they showed during that campaign, justified them in making a change of the original assignment of cavalry; and he also states that the infantry divisions could not have done anything with less than three squadrons.

*Translated from the *Austrian Cavalry Monthly* by Sergeant Harry Bell, Corps Engineers, U. S. army.

In consideration of the achievements of the Japanese, I am fully prepared to accept their judgment in matters military as an authority, but so far as the cavalry branch is concerned I must confine this within certain limits. Japan, at the beginning of the war, possibly influenced by foreign criticism, had but little confidence in its cavalry. Therefore it placed the largest part of it under the wings, so to speak, of the infantry and created but two weak independent cavalry brigades, not looking from the very beginning for much operative activity of cavalry masses. Only very shortly before the battle at Mukden cavalry was utilized in larger masses, by joining the brigades of Akiyama and Tamura into a division. And this division did its very best during the decisive battle, but just at the final act, the retreat in route of the opponent, it did not have sufficient numerical force to gather the fruits of the victory.

It is greatly to be regretted that the Japanese general headquarters did not take the larger part of the divisional cavalry attached to Nodsu's and Kuroki's armies and form an additional second cavalry division. On the wing where the decision fell, these combined squadrons could have performed far more valuable service than separately engaged in a containing fight in the center around fortifications or intrenchments or around mountain defiles on the right flank.

For an army comparatively weak in cavalry, the following question is not the right one: "Can an infantry division utilize to advantage three or more squadrons?" but rather: "What conduces more to the final object or to the decision, a strong independent cavalry, or a strong divisional cavalry?"

Captain Rodic emphasizes, and rightly so, that in future a different system must be inaugurated for strategic recon-

naissance. Not messages or information patrols or detachments of one or more squadrons, but rather larger forces of cavalry with artillery and machine guns, which can pierce the enemy's cavalry screen at important points, will in most cases be required to gain and to transmit important information.

Even while I am in full accord with this, I would like to see every single trooper who can be spared at other points attached to the independent cavalry.

Austria has every reason to husband its numerical weak cavalry force. If, contrary to our "ordre de bataille," we would assign but one squadron to one infantry division, we would get two additional cavalry divisions. And I believe we should clearly realize that for our army in the field our eight cavalry divisions are insufficient to meet all requirements falling to their lot in a modern campaign. Possible pauses in operations do not come into the question as far as the cavalry is concerned, for it is during such pauses in operations that active cavalry commanders will and must utilize their squadrons for extensive raids.

Even with us, where the cavalry arm is at such perfection, the necessity may occur when we will have to draw back the different parts of the independent cavalry for the support of our firing line.

As Captain Rodic states, to come to a decisive and correct estimate as to the value and the required strength of the divisional cavalry is exceedingly difficult, because there are no authenic data at hand in the last campaign concerning its activity and the results attained. It would be very desirable could we ascertain what part it played, for a certainty, in the results of tactical reconnaissance. But this, of course, is impossible. And it seems that the Japanese who were so secretive in all their movements during the campaign have no intention to lift the veil covering just this matter. And when or if the Russian authorities will ever find the time, or have the inclination, to give an official account of the occurrences in and the results of the campaign, seems to be an open question.

Therefore, there is nothing left for us but to draw conclusions from the general occurrences during that war, as far as questions of detail are concerned. It is certain, however, that a far greater importance than usual has been placed on the screening on both sides of measures taken. Every halt and pause in operations, and every single measure taken for battle, was protected from hostile view by the most detailed measures, which, however, were soon known. And, in consequence, the tactical reconnaissance was more obstructed, or made more difficult, than the strategic reconnaissance.

There being no doubt that on a future theater of war, the example furnished by the Japanese and Russians will be strictly followed, so that in most cases reliable information will be gained only through employment of "*force majeure*," and the divisional cavalry, even if made stronger, will not be in a situation to solve its task *with its own force*.

As heretofore, so, also, in future, a few courageous and well led patrols will occasionally penetrate the most advanced hostile obstruction, and may possibly be enabled to return and report what they have seen. But these exceptional cases do not justify the squandering of cavalry masses for a chain of such small patrols in front and on the flanks of an infantry division. The tactical reconnaissance, as well as the screen, will therefore in future have to be made in general by mixed detachments. The task of divisional cavalry would be confined to provide these mixed detachments with sufficient mounted messengers or orderlies, and to send its own patrols, unsupported by infantry, only to those far distant points which must be reconnoitered, or where favorable circumstances may favor a breaking through the hostile screen. And for this purpose, one or two squadrons must be sufficient, which, however, must be confident in the knowledge of having the support of the entire divisional cavalry, if needed.

Without doubt it would be possible to relieve the divisional cavalry as far as the message, communication and orderly service is concerned, by means of cyclists, and the organization of several headquarter troops or platoons.

However that may be, and whatever we may think of the rôle to be played by the divisional cavalry in future wars, so much seems clear and certain to me: Our present system of the employment of divisional cavalry, as is done in tactical problems, in war games, and other practices, with other arms combined, needs reform, without any doubt. Even entire regiments could not successively keep up the continual detachment of small bodies or single troopers, of being now used at the front and now at the rear, now on one flank and again at the other, without soon losing all organization. And such a condition cannot be made better by increasing the divisional cavalry, but can only be mended through the increased knowledge and aptitude and general enterprising character of the cavalry leaders and the confidence they have in their arm.

DIRECTING THE SADDLE HORSE.*

By F. M. WARE.

THE various "airs" of *la haute école* are used only to exhibit the perfection of lightness and balance to which the subject has been brought, and as a sort of equine gymnastics to develop certain portions of the muscular system. The principles upon which the art is founded, however, are so practical, sensible and simple that every saddle horse should be perfected in, and every equestrian familiar with them. Thus trained, the animal is ready instantly to go forward and at any gait, to move to either side, or to go backward, and of these four modes of motion that of *backing* is the only one unnatural to him, and difficult for him, and, for that very reason once he becomes adept, no discipline so assists his general agility, his nimbleness and sureness of motion in all directions.

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WHAT NOT TO DO.

No movement should ever be required of the animal until he has been previously warned, and in however crude a fashion, collected for the effort. It is not fair to him to neglect this, nor is it to haul him backward by main strength, or to ask advance by suddenly kicking him in the ribs with the heels, or jerking his mouth with the bit, customary as are these performances; nor should he be turned only by hauling upon one rein until his body must follow his head and neck, or he must fall down.

Strictly speaking, all the movements are best taught when the man is on foot—collected advance, free straight backing, traversing to either hand—and results are always more certain thus taught. However, many riders do not care to thus exert themselves, nor have they at hand a school or other small inclosure—it may be said here that any inclosed space, even a large box stall, carriage house, or stable gangway, is a great help in such work—the circumscribed space tending to make the subject more "biddable" and easily collected than when he has "all outdoors" to stretch in; while one may thus concentrate the creature's attention upon the matter at hand.

WHEN MOUNTED.

Once mounted, then the rider will close his legs, accompanying this with a gradual tightening of the reins until the animal's attitude is such that collected movement is possible. If then the leg pressure is the stronger, the horse advances; if bit force is greater he (if trained) moves backward, etc., etc. The walk—the most important and most neglected pace the animal uses—may be greatly improved by constant care as to nimbleness, style and speed—the trot and gallop can rarely be changed in any material way. The animal must be *ridden* at the walk as at all paces; made to carry his forehand lightly (bridoon reins); to arch the neck and to maintain the face perpendicularly (curb reins); to step in cadence and freely (legs, or blunt spurs at first if sluggish); "to go where he looks, and to look where he goes." The same lightness and directness must obtain in the trot by the same

methods, and a regular cadence maintained by proper use of the heels and the hands, care being taken never to allow the horse to hitch or hop, which he will do to ease himself if ridden beyond his rate of speed or if tired. A long stride may be greatly modified by enforcing the perpendicular carriage of the face, because a horse never puts his foot down beyond his own nose, and because this attitude compels a stronger play of the hocks and stiffles, which serves to shorten the stride, and to this, riding in circles and "figures of eight," give much assistance.

THE CANTER.

The canter must never degenerate into the hand gallop—a true canter is rarely seen upon our bridle paths—and again the heels and hands urge and restrain with just the right power to bring about the desired result. The canter itself, as explained before, is the result of the *diagonal effect* of the leg, *i. e.*, to "*lead right;*" the pressure of the *left leg* carries the croup to the right, and the right side of the mouth being just touched, the animal swings off into his stride. It is very convenient to ride parallel to a wall or fence, when teaching a horse this gait, as he may be swung sharply and diagonally toward it, the proper leg or spur applied, when, to ease himself from running into the obstruction, he involuntarily leads off with the proper leg, and quickly associates the signal and the reason. Any horse may be taught the proper leads in half an hour, and in the same way, to change his leads by bringing him head on to the obstacle upon one lead when he must *swerve* and change as he does so, your signal with the proper leg, preceding his change, or applied just as you feel him falter in uncertainty. Obstacles may be thus used to great advantage, and they vastly expedite matters. Thus in teaching a recalcitrant to back, a door or gate which swings *toward* him gives him a *reason* for complying, just as, when standing sideways to it, it will make him traverse a few steps to escape it as it swings. In the same way he learns to halt quickly, and at signal, from being ridden straight at a wall, at first slowly, and finally at a fair speed—nor will he actively rebel where he thus, step

by step, understands the *reasons* for the action required of him. He also learns the meaning of the heel and leg pressure much more quickly—and this he should learn from the first—if he is ridden, head on, into an angle of the ring, etc., and then, by light spur pressure, made to revolve his croup around his forehead (half reverse-pirouette) until he is facing the other side of the school. Let him stand a moment, and then by the other leg, etc., make him resume his original position—maneuvers which he will quickly learn to nimbly perform because he cannot advance (the wall angles prevent), and movement to escape the spur or leg is possible only in the two side directions. In the same way he may be stopped in the corner with his hind quarters to the barrier, and made to reverse direction, and return; and he is then more than half trained to traverse (*i. e.*, progress sidelong) a movement which any horse should readily perform at a walk, or on any pace.

REWARD.

Caress must promptly reward performance, and the voice be *never* used—the horse does not understand your words, and if you are angry your tones will only further disconcert him—while if you are eternally talking to him, you simply render him careless and inattentive. *Caress the spot* you *have just addressed*, nor think that he understands a pat on the neck as reward for something he has just done with his hind quarters. Go direct to the spot, and where two parts have been addressed, *caress them both*, as in backing, the hind quarters, and the sides where the legs came, etc., etc., and the same thing in bitting—do not pat the *neck* if you asked him to yield his *jaw*. "Don't reward your daughter for your son's successful geography lesson;" that is the idea in a nutshell. The traverse is a sideways movement in either direction (right or left) in which the horse proceeds with the forehand about two short steps in advance of the backhand; the neck will bend and the face be following the line of progress. The forehand is thus a trifle in advance to enable the legs conveniently to pass each other. Both legs will be needed in this movement, the office of the second

being to keep the horse up to his work and to prevent the backhand from advancing too far as it proceeds. These various movements, the walk, trot, canter, hand gallop, back, traverse to either hand, are all that any saddle horse need know, but not one in a thousand of them can perform any one of the feats to the best advantage, or to the extent of his powers. If one adds to these accomplishments another, more valuable in earlier days when one was constantly opening, passing through, and shutting all sorts of gates, but now rarely needed, one will possess a remarkably accomplished animal. This is the reverse-pirouette—a revolution (in such cases a *half* revolution) of the hind quarters about the forehand. When the horse stands diagonally beside the gate, the rider swings it open, passes, holding the gate-head and shuts it as the horse faces the other way. The detail is unnecessary, however—the others are useful every day—and here again the obstacle is a valuable assistant in instruction. The traverse may finally be performed at either the walk, trot, or canter, while to successfully accomplish any of these feats presupposes a light and sensitive mouth, a properly carried head and neck, and a generally collected carriage; these attributes are not essential, nor, did they exist, would they under the manipulation of our average equestrians, be likely long to so remain.

One great advantage in attempting to teach one's horse these most simple feats is that one is thereby taken out of oneself, loses self-consciousness, and by so much as he relaxes stiffness and resistance of his own muscles, by that much does he better his own balance and seat, and by that same ratio does he become a better rider. It is this muscle resistance that so fatigues people in learning to ride—it is not the exercise they take but the unconscious exertions they make to *prevent* taking it which uses them up, and a thoroughly tired man, who will listen to instruction, will make more advance in that lesson than in any two which precede it. Riding may be taught from books, etc., but no book can enforce the *practice* that must accompany the study; and furthermore, but little is really learned except through mistakes. As argued in a recent article, the secret of managing a saddle horse lies in the control of the hind quarters, and for that reason also, any animal which is thus proficient is half mouthed at once, and, as we frequently see in various circus performances, may learn some brilliant "stunts" without any "mouth" at all. These "stunts," however, are as valueless as the finished "airs" of the most proficient *haute école* graduate, so far as practical work goes—but the rudiments are the same all the time.

WHIP TAPS.

If one cares to train the horse to the various movements of backing, traversing, etc., etc., while he, the instructor, is on foot, the whip takes the place of the legs and heels, and collection is enforced by whip taps upon the croup which promote an attempt to go forward, to be met and counteracted by the hand upon the two curb reins, held about six inches from the bit, and which act causes the horse to carry the neck and head as desired—well bent in the one case, perpendicular in the other. Thus the animal is collected at a stand, eased, led on a few steps, and collected again and again before he is allowed to advance at a walk while under collection. Thus he learns to "make" and bend himself even when at rest and to assume the poise he must afterward wear. Such work should never be too long continued lest the horse become restive, and possibly successfully rebellious.

Once the posture is fairly well gained, and taken readily, the animal should be induced to advance by slightly more severe whip taps and a yielding of the hand which will allow that without permitting too much change in the posture of the neck and head. A step at a time is enough, very slow and especial attention given to the style of carriage, and after a few successful steps—say ten or twenty—the horse should be eased and led to another point where the same rehearsal may continue.

When fairly proficient the whip taps are transferred from the croup to the spot where the leg and heel pressure is applied upon the side, and thus the animal prepared to understand and respond intelligently to leg indications when

mounted. The same gradual methods apply to teaching to back, to traverse, etc.—"little and often" is the receipt, and a step or two correctly performed always followed by an unhampered advance for several yards. No greater error can be made than to force a willing horse to back long distances, or to do any other work to the point of fatigue or annoyance —nothing is gained, everything may be lost. Correct "form" is what we are after, and if the neophyte will cover five steps properly, the graduate will go one hundred yards if you ask him.

Traversing is taught in the same fashion simply by tapping with the whip until the pupil travels sideways upon two paths, the forehand always being a step in advance, the neck bent and the face toward the line of progress—the ring-wall or the barnyard fence preventing direct advance; following this whip tuition the legs meet with prompt obedience when the animal is mounted.

BENEFITS TO THE HORSE.

Any one who will essay these methods, however skeptical as to their value or necessity, will find his hands growing lighter in proportion as his animal makes himself; will be brought close to his charge's mouth when it is in action and must notice, not only the effects upon it of the two bits, and the pose of the neck, and body therefrom, but will have a chance to realize what a marvelous structure that lower jaw is; what a wonderful blending of tissue paper skin and most delicate nerves and blood vessels; what great muscular power lies in the lips and tongue; how we really bit, not the horse's *mouth* at all, but his *tongue;* will notice the reasons for such and such fit of the bits and of the headstall; can study closely the effects of the two bits upon the lower jaw and the neck; note their different values; will see how certain conformation *cannot* yield or acquire certain carriage; will note the change of expression in eyes and those equally sensitive members, the ears; will find that a "dry mouth," *i. e.*, dry end free from saliva in lip angles and on lower lips is always a dead and non-progressive mouth, and that moisture is promoted and saliva kept flowing by the delicate

manipulations and vibration which finally becomes in the expert, automatic; will in short get closer to the "real horse" in one week on foot, than he has ever done in all the previous years perched upon the creature's back—and if he learns nothing else, will never again dare to jerk, maul, saw, or other than most tenderly handle that marvelous arrangement upon which the bit rests—the horse's lower jaw.

It is almost certain—perfectly sure in fact—that if any amateur takes the trouble to proceed thus far with his saddle horse or horses he will be tempted to further flights into the art, and will wish to essay, in however crude fashion, these performances which are regarded as the development of the "high school." If he does he will fail direfully, and certainly spoil a horse or two. Ride he ever so well, he has not the seat, and he won't acquire it unless he forgets all he thinks he knows, and starts afresh with a clean wiped mind. There is probably not in all America one single amateur who possesses the seat, balance, attitude of upper body, position of leg, pliancy of pose, consequent exquisite "hands," patience, calmness, courage, and intuition necessary to acquire proficiency of the first-class in this most misunderstood and least appreciated art—whence one will do well and ease many sleepless hours, and much keen disappointment if he will stick to the A B C of it and leave the rest of the alphabet for those whose discretion is less well developed.

CAVALRY RAIDS AND THE LESSONS THEY TEACH US.*

THE idea of utilizing mobile cavalry forces for farreaching operations against the rear of a hostile army is as old as the cavalry arm itself; it is a simple sequence of the nature of that arm. From time immemorial the hostile supply trains have been the objective of such undertakings, and to defeat this object armies on the march placed their trains in the center of the march columns. In Frederick the Great's time cavalry raids were directed against supply depots mainly or against important political points; but the unimportant results achieved by such raids on the one hand and the development of the cavalry as a fighting arm on the other, conduced to make raids less and less frequent.

Napoleon did not attach much value to cavalry raids, and while he sent large cavalry masses to the front (1805) and to the flanks and rear (1806) of the hostile army, they served mainly the purpose of reconnoitering political and strategical points or of a prelude to the pursuit to follow. To capture supply depots seemed of little importance to him, who laid more value on the destruction of the hostile army in battle. The enemy's undertakings against his communications to the rear (as for instance those of Thielmann, Platow, and Mensdorff in 1813) had no influence whatsoever on his operative decisions; and this the less so as in the central European theater of war his lines of communications were well secured against cavalry raids, for at every ten or twelve miles there was established a fortified supply depot with a small garrison; all of his trains had a sufficient escort, which would be increased in case of need by the commander of the lines of communications.

The original idea of raids received an impetus only with the advent of the railroad and when the old, solid highways

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heretofore used as lines of communications gave way to the railroad.

The prototype of the cavalry raid was furnished by Stuart, the leader of the Southern cavalry in the American War of Secession. A cavalry division general of a lieutenant's age, a clear head, educated at the Military Academy of West Point, brought up on horseback, so to speak, and in continuous wars against Indians, brave and hardy, Stuart was a born leader of light cavalry. Like him, his men were farmer's boys, brought up on horseback, and they were far superior to the city bred troopers of the North with their inferior horses.

The object of Stuart's first raid was a reconnaissance during a pause in the operations. After the battles of Seven Pines, in June 1862, Lee's army occupied a fortified camp at Richmond for weeks, and opposite but a few miles from the Northern Army of the Potomac on the Chickahominy. Stuart, whose orders were to go around one wing of the Federals and appear in their rear, kept the object of his mission secret from his command, and during the march none of his men knew where they were going. Covering about eighty-five miles within three days with his force of 1200 men and two guns, he circumvented the entire Northern army (of about the strength of a German corps) and returned with valuable information. Of course, the single hostile line of communication, the Richmond-White House Railroad, could be destroyed but in part, but that and his threatening that line had a large moral influence on the subsequent battles around Richmond in favor of the Confederates.

Triumphant achievements were the raids Stuart carried on in August, 1862, in conjunction with Jackson's corps, in the rear of the Union army. The first task, the screening of Jackson's advance, succeeded so thoroughly that the opponent thought it but a cavalry raid. Then, by a forced march, he reached the Culpeper-Washington Railroad, destroyed the rails and telegraph line of the only line of communications of the opponent, and during the same night, accompanied by a flying column of infantry volunteers, in a heavy downpour of rain, captured the supply depot at Manassas Junc-

tion. The effect of this raid was intensified by the fact that the Union army was anxiously awaiting a resupply of ammunition; one corps, for instance, had then but seven rounds left per rifle, and consequently was no longer able to operate.

During the lull in hostilities, lasting for several weeks after the battle of Antietam, in October, 1862, Stuart made his most famous and important raid; he was charged with occupying the Federals in their own territory. This raid into Pennsylvania was far more difficult than his first one in Virginia, where every road and by-way was known to him, and where conditions had previously been reconnoitered by his friend Mosby. But this raid was in the nature of a jump in the dark, into strange hostile territory, necessitating a crossing of the Potomac twice. This raid, carried out with 1800 men, selected from out of a total of 6500, and four guns, is a shining example of bravery and energy, even if it was not as successful as the raid undertaken in August. The first day, after covering forty three miles in a heavy rain, Stuart reached the important railroad, destroyed rails, trains and war material, and performed then an almost unbelievable feat, *i. e.*, he remounted his entire command with fresh horses, and the troopers, leading their worn out steeds, took the back track, breaking twice through obstructing hostile columns, traveled over 140 miles in three days, successfully recrossed the Potomac, and rejoined his army. Here also, as in his first raid, he pursued his cowboy tactics in not taking the same route he came.

But in one thing Stuart did not succeed, and that was in a pursuing raid after a victorious battle. In his "Instructions for the Higher Leaders of Troops," Von Moltke enjoins the general commanding the cavalry, held in readiness for the pursuit, "to advance in the start in several parallel columns, so that the pursuit may not come to a standstill when encountering a defile." This simple maxim the otherwise practical young cavalry leader lost sight of—or may not have known. Although on the evening of the battle at Manassas he stood in readiness at the proper place on the enemy's flank, although after a victorious attack on the hostile cavalry the road in his front was entirely clear, he followed the retreating enemy purely frontal, and naturally came to a full stop at the first obstruction encountered, namely, the Bull Run. And certainly Stuart, who once before had covered over 200 miles on bottomless roads, crossed numerous streams, and was several times engaged, and all this within three and one-half days, cannot be said to have been deficient in that "will to relentlessly pursue," stated by Moltke to be one of the first requirements of a cavalry leader.

But in this Stuart stands not alone; witness, for instance, Napoleon at Regensburg, Moltke after Königgrätz, and Goeben after Bapaume and St. Quentin.

In the War of 1870–71 we find no cavalry raid in the sense of Stuart's raids. Inducements for such were not wanting; raids of cavalry divisions with artillery to Tours (seat of the government), to Bourges (main arsenal), and especially to the north of France, where reinforcements for the army were being gathered and entrained, would have been decidedly unpleasant to the French authorities. However, we must not lose sight of the fact that raids in a densely populated country are a different matter from those in the United States in 1862, where there were but about twenty inhabitants to the square mile, as against one hundred and fifty in France.

The war in Manchuria, which has much in common with the War of Secession in North America, revived the notion of cavalry raids.

There, as in America, both armies were dependent on their readiness for battle on a single line of railway; continuous pauses of operations occurred there as in America after each battle (some lasting fifty-five days), which were utilized for recuperation and reinforcement; both armies were opposite each other in fortified camps with natural obstructions in their front, as in America; frontal reconnaissance was out of the question; the Japanese gained most of their information from the reconnaissance of spies. All this encouraged the Russians, who had the superiority in cavalry, to make raids, which had for their object reconnaissance as well as obstruction or destruction of the enemy's single line of communications to the rear.

It is difficult to say for which of the two armies this single line of railroad was of more importance. It brought reinforcements and supplies for the Russians from the 10,000 kilometers distant fatherland, and it was of great importance to the Japanese in the matter of subsistence.*

The Dalny-Liaoyang Railroad became of the utmost importance to the Japanese after the fall of Port Arthur. In addition to the continuous question of subsistence supplies this road had to bring Nogi's investing army to the front to finally bring the campaign to an end.

And therefore the raid carried out by Mischtschenko was conceived. A strong force of cavalry (about seventy squadrons, six batteries, and machine gun detachments) was assembled and for the present put into quarters on the right wing of the army in "recuperation" quarters. For weeks nothing was talked of in the Russian army but this raid, and of course the Japanese soon got wind of it. "To recuperate a little;" this maxim of the Russian army Tolstoi portrayed exceedingly well in his novel treating of the Napoleonic era. Then came the news of the fall of Port Arthur, and a start was ordered. Mischtschenko's instructions were "to conduct a raid in rear of the Japanese army, to destroy the railroad, storehouses and trains, but to give his main attention to the magazine at Yinkou where, according to the report of spies, supplies to the value of from two to twenty millions rubles were supposed to be."

It is not at all improbable that at that time Mischtschenko had knowledge of the planned offensive movement on Sandepu and that he had instructions to be at hand for these operations. This instruction, as well as that to turn his main attention on Yinkou were very serious errors of the General Staff. The army headquarters ought to have known

*It has been said that the Japanese were subsisted very simply and on rice, nothing but rice. But the very opposite is true, as subsisting the Japanese soldier (who in addition to his rice demanded all kinds of sauces, preserved fish, fruit, etc.) was much more complicated than that of the Russians. In addition the rice, which did not grow in Manchuria, had to be brought from Japan, Formosa, China and India; on the other hand, the Russians lived very well off the country which supplied meat, cereals, and especially cabbage, in abundance.

that Yinkou was an ice-locked harbor; and it should have known that with the setting in of the hard winter and, especially as Port Arthur had fallen, Dalny and not Yinkou was the base of supplies for the Japanese army; therefore Yinkou was but a secondary consideration of the raid; the Dalny-Liaoyang Railroad should have been the first. As a matter of fact only small patrols were sent to that railroad, while Mischtschenko turned towards Yinkou with the main force of his command. Double tasks will always bring but half results, and it seems that Mischtschenko delayed his advance with an ear toward Sandepu. And to make matters worse, a pack train of some 1600 animals had been attached to the raiding force, apparently against the leader's protests. It is a fact that Mischtschenko took four days in covering the 120 kilometers to Yinkou, for which Stuart would have required less than two days—and this in a raid where the entire success of the movement depended on celerity! The addition of the 1600 pack animals was entirely superfluous, because in that rich country, as yet not touched by war, the 10,000 horses of the force found more than sufficient forage, and the men did not want for meat and bread. This was soon apparent and, as Tettau states, the grain carried by the pack train was simply thrown away. Now the trot could have been taken up, but on the other hand the slow walk was continued and bivouacs were made in the cold weather in a densely populated country, where each farm building could easily have accommodated half a sotnia. Russian authorities excuse the slow advance on account of bad roads, but Tettau, the eyewitness writes: "The terrain was this time not to blame, it was especially suited for a raid; the country was very level, but little snow on the ground, and there was no obstruction of any kind. The roads were excellent and cavalry could move equally well off as on the roads; all rivers are frozen and could be crossed without danger or difficulty; the weather was simply superb, sunshine in daytime and but little frost at night. The country was the richest in Manchuria and there was more than enough forage for the animals everywhere. In addition, the enemy could not oppose with cavalry and there was no

depth to his position, for all of his forces were concentrated on the Schaho."

It also appears that Mischtschenko had no map or plan at all of the railroad, nor of the buildings along the line, buildings which had been erected by the Russians themselves, and he knew next to nothing concerning the Japanese guards along the line. Without any definite plan he sent detachments towards the railroad to destroy the buildings and the road, but most of the buildings were found guarded by the Japanese, and the Russian detachments had to content themselves with destroying a small part of the track. According to Japanese reports one Russian detachment found a bridge unguarded, and instead of blowing up a pier, they merely blew up a rail north of the bridge; in another case the exploding charge missed fire. This shows that there was an absence of technical knowledge or that the equipment was faulty.

The operations of the main body against Yinkou left much to be desired. The cavalry corps stood during the entire day inactive in the fields before Yinkou, because Mischtschenko wanted to delay the attack till night. When he arrived at Yinkou he found the place but weakly occupied; but in the meantime the telegraph had been active, and towards evening a military train arrived with infantry reinforcements on the branch road Daschitsao-Yinkou, which they had neglected to destroy. The artillery opened fire shortly before sundown for about thirty minutes only; but it fired a forage magazine, which, however, was very propitious for the Japanese, as it acted like a searchlight for them. Instead of using his entire 8000 carbines in the attack, Mischtschenko selected from his seventy squadrons, nineteen (one from each regiment) and formed three attacking columns under one leader, who belonged to neither organization and did not know any of them. The remainder, with the artillery and machine guns, remained behind as a reserve somewhere in the darkness and awaited events. The attacking columns had received orders to march on the lights at the depot; but when it got dark many lights sprung up and nobody could tell which pertained to the depot. The skirmishers got into confusion, some

were behind each other, and those behind fired into the ones in front; one of the first killed was the engineer officer, a blasting expert who was attached to the command, and he was the only one conversant with the use of blasting charges. Complete confusion followed, and Mischtschenko saw no other way out of the difficulty but to order the retreat.

This cavalry corps was in such a state of disorganization that Kuropatkin had to send a mixed detachment to receive and save it. And thus ended the raid in a complete fiasco. The Russian cavalry officers laid the blame on Mischtschenko because he was not a cavalry officer but an artillery officer. But it is far more likely that the real truth is that but a few troops under his command deserved the name of "cavalrymen," and these were the European Dragoon Brigade. The main body was formed of Cossacks (and of the second and third levies at that) who were entirely unsuited for patrol or message service and independent action. To illustrate: One sotnia during this raid attacked, mounted, a village entirely surrounded by a high stone wall, defended by Japanese infantry; the lesson it received there could be no other than a very bloody one. These are errors from which there is nothing to be learned. Also, Mischtschenko caused every and each farm building, where Japanese had fortified themselves, to be attacked. It goes without saying that small detachments should be attacked only with carbines and guns when they bar defiles through which the raiding force *must* march; anything which can be passed without loss of time must be passed, not attacked.

About the same time the Russians conceived the idea of this raid, the Japanese planned to obstruct or destroy the Mukden-Charbin Railroad. They, however, could not afford the luxury of a cavalry raid in force; therefore but three detachments were sent out, each of forty-five, seventy and one hundred and fifty men strong.

The weakest command found its objective, a bridge across the Sungari 200 kilometers north of Mukden, strongly occupied, and had to be satisfied with blowing up a piece of the track. The next detachment of seventy men sent to the railroad bridge of Kundulin north of Mukden, first stormed

the blockhouse of the guard there and then blew up one pier. The third command, under Lieutenant Colonel Naganuma, which had taken for its objective a railroad bridge 240 kilometers north of Mukden, covered a distance of 450 kilometers through the mountains in forty-three night marches, an example of the Japanese passion for making all things absolutely safe, and blew up the bridge on the Mikado's birthday, and on its retreat defeated 300 Cossacks, took a gun from them, and returned safe and sound after sixty-three days, and all this in bitter cold weather.

All three detachments lived off the country, even Naganuma's in the inhospitable mountains, the latter of course, horses and men, living on millet mainly. The most important result achieved by these small detachments was that Kuropatkin shortly before the decision at Mukden detached an entire cavalry corps from his right wing and utilized it as a railroad guard, and thus Nogi, in his decisive enveloping movement, found his road clear. This illustrates the fact that it is not necessary to utilize an entire cavalry corps to achieve important results.

To make them applicable to conditions in Europe, the lessons taught by the American and Manchurian raids will have to be carefully considered. The conditions in both of these wars were similar, conditions which not only favored the execution of raids but almost compelled them, has been shown above. Similar conditions obtained in Central Europe in 1859, 1866 and 1870.

In 1859 the Austrian General Staff, in its delight over the new railroad communications, wanted to abolish and did abolish the supply trains and replaced them by railroad trains. There was but one line, the Venice-Verona-Maitland R. R., and this action had such an injurious and prolonging effect on the war that it offered the finest opportunities for raids.

In 1866, during the retreat of Benedek's army from Olmütz to the Danube, a Prussian raid against the Olmütz-Vienna R. R. would have been very much to the point; Moltke several times insisted, but without success, that such a raid should be carried out by the Second Army; and when

he finally ordered the First Army to make it, and when a detachment, consisting of 150 uhlans and engineers, of this army successfully carried it out, it was too late, for but a very few trains were cut off and forced to go back.

In 1870 the railroad connection between the German army and the Fatherland was Moltke's pet hobby; and it was fortunate that the French cavalry was cornered up in Metz and Sedan, and could not undertake any raids against the railroad of so much importance to the German army.

At the present day the net of railroads in Europe is so dense that a leader of a raid into the rear of an enemy will now find many things which will prove unpleasant for him. A situation where an army depends on a single line of railway for communications is no longer possible, except in Russia. And, as stated above, a raid in America and in China was easier of execution than in a well settled European country, where facilities for telegraphic communication are abundant, heralding the approach of a raiding party. To-day no party can cut all telegraphic communication at one and the same time.

The main requirement for the success of any raid—surprise—will hardly ever be had in Europe; in any case, no raid can ever be executed *in force*. Therefore, a raid in force into the rear of an army will in each case depend on actual conditions obtaining; *i. e.*, a pause in the operations, a single line of railroad only used by the enemy, may compel a raid; an open, sparsely settled country, poor in telegraph lines, but rich in forage and supplies, and above all, our having a large cavalry force at our disposal, may allow such a raid; but these conditions will be but seldom met with in Europe.

Small raids like those carried out by the Japanese, continuously repeated, are the needle pricks which we can always follow, and the total result achieved through them may prove a decisive factor in future wars.

The results achieved by raiding forces in the American secession war and in that in Manchuria teach us the following:

1. The leader of a raiding force must receive minute directions, which cannot be misunderstood, concerning the ob-

ject of the raid, but entire freedom in arriving at that object must be left him; he also should receive thorough orientation of the country to be traversed, conditions of railroads and places and stations of hostile troops guarding the line of communications as far as is known to headquarters.

2. It is to be recommended, as a general rule, not to send out too large a raiding party, but above all not to send a large mass of cavalry *en bloc*, but rather to form half squadrons of picked men (and in such selection not to indiscriminately mix up different regiments). Also, to attach to the raiding cavalry sufficient machine guns and field artillery and mounted engineer detachments. Under no circumstances should supply trains be taken along, and ammunition only should be packed on pack animals, never on wheel transportation.

3. Absolute secrecy concerning the proposed movement should be maintained, and the objective not to be divulged even to subordinate commanders. Night marches will be found necessary to effect surprise.

4. In enemy's country, *never* march over the same road in going and coming.

MI ÚLTIMO PENSAMIENTO.

(MY LAST THOUGHT).

Written by José Rizal, on the eve of his execution on December 30, 1896.*

Farewell, my homeland beloved,
Region of sunbeams enchanted!
Pearl of the seas oriental,
Lost to us like unto Eden;
For thee I gladly surrender
Life full of sorrow and sadness.
Even if life were more brilliant,
Joyous and full of contentment,
Still would I give it, and gladly
Yield it for thee, for thy welfare.

*Translated from the Spanish by Lieutenant E. H. Rubottom, Ninth Cavalry.

On battlefields struggling in frenzy,
Others have given their life blood,
Freely, without hesitation,
With not a regret in the giving;
No matter what place, what condition,
Mid cypress or laurel or lilies
Whether on scaffold, in open,
Or combat or martyrdom cruel,
It is the same to the hero
Who dies for his home and his fireside.

I die, yet can see that the heavens
Are glowing and rosy with colors,
And then at the end there appeareth
Beyond the dark veil the day dawning;
If scarlet be needed for staining
Thy dawn to a richer vermillion,
Then pour out my blood, shed it freely,
For now it is time for the offering,
And gild it with but a reflection
Of thy naissant light, of thy glory.

My dreams years ago, when but scarcely
A boy, with my life still before me,
My dreams when a lad adolescent,
Already a youth full of vigor,
Were of the sweet day when I'd see thee,
Thou gem of the seas oriental,
Thy dark eyes as dry as the desert,
Thy proud brow held high as the heavens,
With never a frown nor a wrinkle,
Nor shameful e'er crimsoned with blushes.

Oh dream of my life, sweet illusion!
My ardent and living desire!
Farewell to thee! now cries the spirit,
The soul which is soon to be severed.
Farewell! Oh how sweet is the privilege
Of falling, for thus thou art given
The power to fly, and by dying
I give to thee life; death is sweetest
Beneath thy blue skies; sweet the slumber
In thy land enchanted forever!

If over my tomb thou shouldst some day
Behold a bright fragrant young flower,
Amid the thick grasses that grow there,
A simple and sweet blossom opening,
Press it close to thy lips, to thy bosom,
For it is the flower of my spirit;

And I, in my sepulcher lying,
Will feel on my cold brow the moisture
So warm from thy lips, and thy gentle
Soft breath will but fan me to slumber.

Look down, thou pale moon and behold me,
Let thy silver light shine upon me;
Break now from the eastern horizon,
Thou dawn, in thy radiant splendor;
Thou wind, moaning low in the palm trees,
Shalt murmur a soft lamentation;
And, if perchance, some day descending,
There cometh a bird from the heavens
To perch on my cross, let it warble
A song full of peace and forgiveness.

Thou, Sun, riding high in the zenith,
Shalt dry all the rains that have fallen,
Which, pure to the heavens returning,
The toll of my death knell shall follow;
Perchance some true friend in compassion
May weep for my untimely passing;
And oft in the cool dewy evenings,
When someone for me may be praying,
Pray also, Oh Land of my Fathers,
For my peaceful rest in the Savior.

For all those who die in affliction,
In every unhappy condition;
For all who are destined to suffer
Unparalleled torments forever;
For our poor unfortunate mothers
Who weep in their sadness and sorrow;
For widows' and orphans' bereavement;
For prisoners suffering tortures;
For these pray to God, and implore Him
That soon thou mayst see thy redemption.

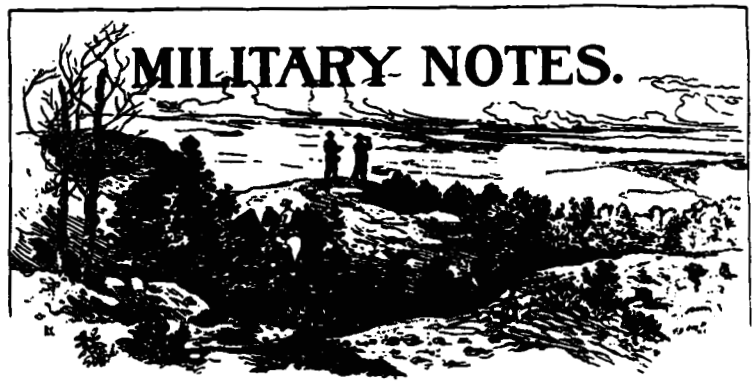
And when all enshrouded in darkness
Of night is the lonely God's acre,
Only the dead there remaining
Like sentinels silent with terror;
Their quiet repose, oh! disturb not,
Disturb not this eternal mystery;
But if in accord be thy spirit,
Then hark the guitar or the zither;
'Tis I, beloved Land of my Fathers,
'Tis I, who am singing thy praises.

And when the sad day at last cometh
When my resting place is forgotten,
No longer appearing a tombstone
Or cross that should mark its location,
Then let it be plowed o'er by laborers
And scattered by hoe or by shovel;
And then shall the last of my ashes
Return unto Nature that gave them,
And, borne on the four winds of Heaven,
Shall settle as dust in thy carpet.

Then tell me why should the thought grieve me
That I may be lost in oblivion?
For shall I not traverse thy valleys,
Thy blue atmosphere and thy woodlands,
And oft in thine ears still be ringing
Like chiming of bells, clear and vibrant;
And also as natural phenomena,
As fragrance, light, colors or voices,
A song or a moan, e'er repeating
The essence of my faith eternal.

My own idolized Native Country,
Of all of my sorrows the saddest,
My own Philippines, my beloved!
Hear now my adieu, my last farewell!
Behold all for thee I am leaving,
My parents, my friends long beloved!
I go where no slaves are in bondage,
No hangman, nor cruel oppressor,
Where faith does not justify murder,
And God is the Ruler Eternal.

Adieu, Oh my parents and brothers,
As part of my soul here remaining,
Ye friends of the years of my childhood,
And of the dear home lost forever!
Give thanks unto God, that already
I rest from the day's toil and trouble.
Farewell unto thee, gentle stranger,
My friend and my joy thou wert ever!
Farewell, all ye beings beloved!
Oh weep not, for death is but resting!



LANGUAGE LEAVES.

By Captain FREDERICK B. HENNESSY, Third Field Artillery.

THE army of the United States probably contains a smaller percentage of officers speaking foreign languages than any other army of a first class war power. This condition of affairs is due to the fact that we have, practically speaking, but one language in North America, whereas in Europe many different languages are spoken, thus necessitating the knowledge of several languages upon the part of the officers of foreign armies.

Of course, some of our officers acquire a certain proficiency in French and Spanish at West Point and at the Service Schools, but generally with a "tin horn" accent (phonograph method).

It is an exceptional person who can learn to speak fluently a foreign language without actually visiting and living in the country in which that particular language is spoken.

In the event of war with a European or Asiatic nation, the United States army would be greatly handicapped by

this lack of officers able to speak the language of our enemy, while the opposing army would possess many officers who could not only speak our language, but also French and German, materially aiding them in a campaign in any country.

Some time ago it was suggested that a bonus (say $200 per annum) be allowed to any officer who learned to speak any foreign language, in order to encourage army officers to acquire languages other than their native tongue, as is done in foreign armies.

The above mentioned scheme would doubtlessly encourage some officers to study foreign languages to receive the additional pay, but it is believed that the following plan would be just as efficacious and would not necessitate any increase in the appropriation for the pay of the army, and could be inaugurated by executive order, without legislation by Congress.

This plan is to have one or more officers of the highest class standing at the Army School of the Line or the Staff College annually detailed to take a "language leave of absence" for the period of one year, to be sent abroad to such country (including Japan) as the selected officer may elect or the War Department designate, and there complete the study of the language desired, by actual residence in that country.

Certain officers might not be able to undertake this detail on account of the possible expense, but when it is considered that a person can live comfortably abroad at less expense than in the United States, providing one does not attempt the "society act," it is thought that almost any ambitious officer could undertake the detail without suffering any great hardship, financially or otherwise.

But to be successful, the plan must rest upon the voluntary initiative of each officer concerned.

In connection with this same subject it should also be prescribed that one or more officers of high class standing at the Mounted Service School, Fort Riley, Kansas, would be eligible for one year's detail at the Saumur Riding School, or at some one of the other excellent foreign riding schools, such as those in Vienna, Hanover and Rome.

This will not only be an incentive to all officers to qualify in the equitation features of the curriculum at these foreign schools, but will also give them an opportunity to there acquire a fluent knowledge of the language concerned.

The adoption of some such scheme as the proposed one would prove a welcome relief after the terrific "grind" at the Service Schools, and would be in the nature of a reward for faithful services rendered there, ultimately resulting in great benefit to the government, for not only would an officer be thus afforded an opportunity to study the foreign language, but it would also enable him, by personal observation, to familiarize himself with the methods of warfare and the personal idiosyncrasies of the officers of the foreign armies with whom he would be brought in close contact, which knowledge might prove invaluable in time of campaign.

MACHINE GUN PLATOON.

FORT DES MOINES, IOWA, January 20, 1908.

The Adjutant General, U. S. Army, Washington, D. C.

SIR: I have the honor to make the following report in regard to the machine gun platoon, Second U. S. Cavalry, and the following recommendations for changes of equipment and organization of machine gun platoons in the army.

When the report required on March 1, 1907, was made, the platoon had not been organized a sufficient length of time to determine on needed changes.

Since that time the platoon has been on all the monthly three day marches and the weekly eighteen mile marches with the squadron. It was on the march with the regiment to St. Joseph, Mo., and return, twelve days of continuous marching each way.

It served with the Brown Army in the maneuvers with the Iowa National Guard for eight days; served with the regiment on the Ute Indian Expedition in South Dakota,

where it marched 240 miles. Since March 1, 1907, the platoon has marched approximately 1200 miles, under all conditions of weather and on all kinds of roads.

The platoon has been drilled regularly and all the various formations and methods of drill have been tried, and those found most satisfactory adopted.

The allowance of ammunition has been fired at target practice in training the gunners. The changes recommended are based upon the experience obtained from the above service.

CHANGES IN EQUIPMENT.

Pack Saddles.—The American aparejo is recommended to replace the English pack saddle, for the following reasons:

1st. The English pack saddle is found too light for cavalry service, on continuous marching, the hair padding soon gets matted, and there is no way to remedy it without ripping the saddle to pieces. It produces a general swelling on the back. The side bars produce swelling of their size and shape where they are pressed into the animal by distance pieces of the hangers. On the gun mule the weight of the pack being greater in front the saddle soon becomes hard and matted in front, producing swelling of the withers.

2d. The English pack saddle produces more rubbing of the hair, as it has more forward and backward motion than the aparejo.

3d. The English pack saddle does not permit of packing the load with the diamond hitch when hangers or arch frame becomes broken.

The Aparejo.—The Daly frame in the aparejo resting on the withers has produced some sores and rubbing of the skin. It is thought that this can be remedied by shaping the frame out at this point and allowing room for some packing at that point to keep it up off the point of the withers. Some other bunches were caused on the backs of the animals but were easily reduced by changing the packing.

Coronas.—The coronas supplied are too light and should be the same as those supplied to pack trains. The canvas should not be stitched to the corona, as when the blankets

get wet it shrinks and causes the canvas to wrinkle, and the wrinkles cannot be gotten out without ripping off the canvas.

Gun and Tripod Hangers.—The tripod hanger is not made out of the proper grade of steel. Three tripod hangers have been broken by the weight of the tripod when moving at an increased gait. Each break has been at the forward angle of the hanger near the rivet by which the rings are fastened to the hanger.

Buckles were substituted for the cincha straps on both hangers, and found more satisfactory, being quicker to unfasten and fasten and not as likely to work loose.

Only one strap is necessary for strapping ammunition boxes on top of frame.

Hooks on the Arch Frame.—The hooks being made of brass are too soft and do not stand the wear on them. Nearly all of these hooks have worn from one-half to two-thirds of the way through and will have to be replaced.

Spare Barrels.—The life of a barrel using the present high velocity ammunition and firing at the rate of the Maxim gun will probably at the best be about 2000 rounds Fifteen hundred rounds were fired through one barrel and the lands of the rifling were cut away for about one inch from the breach.

It is therefore evident that more spare barrels should be carried with each gun, as in active service and at a distance from the arsenal they could not be readily obtained. Each ammunition pack could carry one or two spare barrels strapped to the frame, giving either five or ten spare barrels for each gun.

Ammunition Boxes.—The spring on the cover of the boxes is too weak and should be strengthened.

Extra Pins and Split Pins.—Each gun should have two spare elevating pins and trunion pins, as these are easily lost on the march, rendering the gun useless, or nearly so, till new ones can be made or obtained. There should also be at least two extra split pins of each kind, especially the elevating pin split pin.

Cleaning Rod.—The slit in the cleaning rod is too large, causing it to break. A brass cleaning rod should be provided for use in the garrison.

Elevating Clamp.—The elevating clamp does not at all times work satisfactorily. It is sometimes difficult to clamp the elevating screw tightly, and nearly always requires considerable pressure to clamp it, which deranges the aim.

If it is not clamped tightly the gun in firing will gradually work up off of the target.

Marking of Equipments.—Some fixed form of marking equipments should be adopted and the necessary stencils and dies supplied. In this connection attention is respectfully invited to my letter of January 22, 1907.

After several articles had been lost it was found necessary to mark the equipments, and such articles as could be marked with a stencil were marked with cross sabers, with the letters M-G in upper angle and number of regiment below.

Wheeled Mounts.—It is believed that a wheeled mount would be superior to the tripod if it can be made in suitable shape for packing.

The wheel mount would permit the rapid movement of the guns to new positions, to threatened flanks and advantageous points to fire on targets that unexpectedly presented themselves. It would be valuable in rear and advance guard formations when in contact with the enemy, permitting advance in readiness for action and without packing.

It might be the means of saving the guns from capture in a surprise or retreat, or in case of loss of gun mule.

The tripod and gun are too heavy to be carried more than short distances. The records of the mountain batteries show that guns can be put into action on wheel mounts as quickly as guns using the tripod mount.

Artillery Whips.—Artillery whips should be supplied for the use of the file closers in keeping the mules up to the proper gait.

Change in Organization.—The administration of the machine gun platoon as at present organized is a continual source of difficulty and trouble to all concerned. While it is

realized that the scheme was only tentative, with the idea of learning what is the best way to provide machine gun service, it has now been found certain that the system of detailing men from three different troops will never prove satisfactory, and the efficient service that is desired can never be obtained from men who are under so many different commanders, and the time has come, it is thought, to try some other method.

The necessity for the service of the machine gun is admitted as most important, and if that service is necessary it is certain that we should have the best obtainable, and that as soon as possible, as we are far behind all European countries in its development.

It is believed that the only way to have an efficient machine gun organization is to maintain it as an entirely separate command, both in garrison and in the field, and that to do this it should be organized as a machine gun battery of either four or six guns with the proper number of non-commissioned officers, cargador, cooks, blacksmith, mechanic, saddler, privates, etc. That quarters and stables should be provided, and that the battery be one of the permanent organizations of the regiment.

The men should be especially enlisted for machine gun service and men who are suitable for the work required, and not men who are the rag end of the troop, as is sometimes the case with those now detailed, and whom a troop commander is glad to get out of his ranks. The service with the machine guns require much more work than that of the trooper, and for efficiency the men must have an intelligent interest in their work.

With such men and with them all belonging to the same permanent organization, *esprit de corps* will not be lacking.

As it is now, your men are under three different troop commanders and the platoon commander; they never know just whom they are serving under. The troop commanders don't know when and what is required of them in the platoon, and the platoon commander don't know what they are doing in the troop. He may order a drill or an inspection and find that half his men are on duty in the troop on police

work, in charge of quarters, etc., so he has to be contented with giving what instructions can be given to the few men present, and hope for enough men for a drill the next day.

Proper instructions in the service of the guns cannot be given without nearly the full complement of men.

The troop commander finds that his machine gun men at inspection of quarters are on duty at the platoon inspection, and their bunks are not in proper shape, etc.

The result of the present condition is that the machine gun men are often made the scapegoats of their troop, that service with the machine guns that would otherwise be interesting is made undesirable.

In the matter of stable and storage of equipments the same difficulty is met with. The platoon has nearly as much equipment as a troop and no place is provided where it can be kept together in a military manner ready for service. Having it divided among three troops is out of the question, and as one troop does not want to give up the room to it all the time, of which it has not sufficient space anyway, the platoon has to move from one troop to another every month. Also the men of three different troops having access to the stables of one troop is not a satisfactory condition of affairs.

At present this difficulty is solved temporarily by the platoon being quartered in the stables of Troop "L," which is on detached service.

The platoon is supplied with an entire outfit of blacksmith's and saddler's tools, but no blacksmith or saddler has been assigned to the platoon, although requests have been made for them. The result is that on field service horses and mules sometimes went lame from want of proper shoeing. When horses or mules were sent to the troop blacksmith's to be shod they were too busy shoeing their own horses, and the platoon was required to wait till all the troop was shod.

In the field the men had to mess with their troops, as requests for a cook were not approved. Provisions for the assignment of those men to the platoon should be made.

Under the present organization of the platoon the ranking non-commissioned officer should be a sergeant instead

of a corporal. Excepting paper work his duties are fully as arduous and important as those of a first sergeant. This is even more so in the cavalry than the infantry, and if the infantry platoons are to have a sergeant there seems to be even more reason why the cavalry platoon should have one.

The following organization is suggested for a machine gun battery of four guns: One captain, one first lieutenant, one second lieutenant, one first sergeant, three sergeants, (one quartermaster sergeant, two sergeants chief of ammunition sections), four corporals, two blacksmiths and farriers, two cooks, one cargador and forty privates.

This would provide for four gun sections of one corporal and nine privates, which is found to be the least number of men that can efficiently handle one section. Four privates are members of the gun squad and the other five are drivers.

It would give four extra privates, one to a section, who would be trained and available to replace casualties.

In this connection it is to be remembered that with a troop of cavalry the loss of a set of fours or more does not impair the efficiency of the remainder of the troop, but with the machine gun the loss of a few men means impaired efficiency of service to a large degree.

On the recent Indian expedition in South Dakota the platoon became so reduced through discharge and sickness as to leave only two gunners and four drivers to a section, thus making the handling of the packs in unpacking and packing and in crossing ferries very difficult, and if the platoon had been required to go into action it would have necessitated leaving behind some of the ammunition packs or of serving the guns with reduced personnel and consequent impaired efficiency.

In all marches with the squadron and regiment the platoon has kept closed up on the rear troop of the column and taken the gaits of the column, and it has been shown that the machine gun platoon under full pack can at all times be expected to keep up with a cavalry column.

But as an increased gait and frequent halts are harder on pack animals than continuous marching, it is believed that in time of peace, and on marches at a distance from the enemy

in time of war, the platoon should march detached from the regiment and move at a walk, continuing till camp is reached.

The drill regulations previously submitted have been modified and revised and are now being printed. A copy will be forwarded when they are completed.

Very respectfully,

H. R. SMALLEY.

2d. Lt and Sqd. Q. M. and Cmy., 2d Cavalry,
Commanding Machine Gun Platoon, 2d Cavalry.

CARRYING THE RIFLE.

FORT HUACHUCA, A. T., November 27, 1907.

The Adjutant, Fifth Cavalry, Fort Huachuca, A. T.

SIR:—In reply to circular letter from your office of November 24, 1907, I have the honor to report as follows:

I was authorized by Major Stevens, Fifth Cavalry, to use in Troop "C" Fifth Cavalry, the method of carrying the rifle in an almost vertical position behind the trooper's right thigh on the right side of the horse, in a similar manner to that used previous to 1892, which was about the time the method of carrying the carbine under the leg was adopted.

The method prescribed by the War Department in the circular of February 23, 1907, has been used by me, and I consider it a great improvement on the one laid down in the Cavalry Drill Regulations. But, in my opinion, it does not do away with the main trouble, viz., the heavy rifle pulling diagonally on the left side of the pommel, with an excess pull of from eight to ten pounds, depending on the angle at which the rifle is inclined. It was to try to find a remedy for this defect that caused me to make the experiment described in this report.

The following is the method: The present rifle scabbard was modified by running a strap from the open end to the

stud at the rear of the saddle. This strap had several holes to use on the stud, so that the scabbard could be adjusted at the proper height by using the proper hole. This strap was fastened to one side of the open end of the scabbard, and this strap was fastened into the off cinch ring. A third strap was put around the scabbard just below the mouth, and this strap was fastened to the off rear spider strap. When properly adjusted this gave the rifle a position behind the trooper's right thigh, butt at height of elbow, toe of piece to rear, barrel to the front and almost vertical, but sloping slightly to the front and slightly outwards. This latter enabled the trooper to use his right leg and right spur in managing his horse. I had but one man in the troop that had any trouble in mounting with the rifle in the scabbard as described above, but should there be any difficulty in this respect, on account of horses that are unusually restless or fractious, it can be obviated by having the trooper slightly lengthen the sling on his rifle, and then sling his rifle on his left shoulder or even on his back just before mounting. After mounting, he can place the rifle in the scabbard, either at once or as soon as the horse becomes quieted. By using this plan, he would be in no more danger of getting hurt through his horse throwing him while mounting than ordinarily.

The other articles are packed as follows: Overcoat, blanket roll and shelter tent half as now prescribed in circular of February 23d, War Department, saber on the off side under the right leg, almost vertical and strapped to off pommel ring and off cinch ring. (Note.—The present experimental saber with scabbard and knot weighs only two and three-fourths pounds.)

Extra horseshoes are wired underneath tread of stirrups, one on each side.

NEAR SIDE CANTLE.		OFF SIDE CANTLE.	
Canteen (empty)	1.00 pound	Rifle	9.09 pounds
Lariat and picket pin	3.30 pounds	Scabbard	3.31 pounds
Nose bag	1.40 pounds	Knife, fork and spoon	.40 pound
Shelter tent poles	1.00 pounds	Tin cup	.56 pound
Meat can	.95 pound		
Currycomb	.65 pound		
Horse brush	.65 pound		
Watering bridle	1.50 pounds		
Horseshoe nails	.25 pound		
Total	10.70 pounds	Total	13.36 pounds

All of these articles are carried in saddle bags except lariat and picket pin, canteen, nose bag, shelter tent poles, rifle and rifle scabbard. It will be seen that this will make the weight on each side of the cantle about equal when the canteen is filled, and about two and a half pounds heavier on the off side when the canteen is empty. As the experimental saber, scabbard, and saber knot weights together about two and three-quarters pounds, it will be seen that when the canteen is full there would be a diagonal pull of between two and three pounds on the off pommel ring, and that when the canteen is empty there would be a straight pull on the pommel of between two and three pounds, and also one on the cantle of about the same amount, thus giving a straight pull to the right on both ends of the saddle instead of a diagonal pull. Thus the pull when diagonal (canteen being full) is very small and when not diagonal (canteen being empty) it is straight to the right. It is believed that this state of affairs will come nearer to minimizing sore backs, other things being normal, than any other arrangement yet proposed. When we first began to carry the carbine in a boot or scabbard under the leg I believe that it was an improvement on the old method.

But the change to the rifle and the great increase in the weight of the rifle has convinced me that we will never have any satisfaction nor be able to minimize the evil of sore backs until we do one of two things, viz: Either we must give up the heavy rifle and return to the carbine or we must adopt a method of carrying the rifle and pack that will not cause a heavy diagonal pull on one corner of the saddle. I

believe that the method I propose accomplishes the latter result more nearly than any that I have yet seen described. It was practically in use once in our cavalry service and gave very good results.

On the march to Ft. Apache and return the results were very satisfactory, but as we trotted between ten and fifteen per cent. only of the distance and the weather was cool, I am not prepared to say that the method has yet been conclusively tested at the trot, but I am firmly convinced that it is a great improvement on the present method. During this march of about five hundred and twenty miles, I had in the troop only four sore backs, and only two of these could by any possibility be laid to the method of packing the saddle or carrying the rifle. I had many horses with old sit-fasts and sores and expected to have a great deal of trouble on this account, but was much surprised that I had scarcely any.

The present scabbard could be modified at the arsenal at very little expense so as to be adapted for use by this method. It might even be modified by troop saddlers under proper specifications sent out by the Ordnance Department.

I also wish to call attention to the difference between my method and that proposed by Captain Williams in the July, 1907, number of the CAVALRY JOURNAL.

Captain Williams advocates putting the rifle behind the pack probably to get out of the way of the trooper's arm and leg. I believe that this is a mistake, as the rifle will be too far away from the center of the load, and at the trot a motion will be set up and communicated to the saddle which will not only cause it to rub the horse's back, but will also cause it to slip. In the method proposed by me (and formerly in use in our service) the rifle fits snugly between the trooper's right thigh in front and the pack and the right saddle pocket in rear, there is little motion, and in case of necessity the trooper can steady his piece by placing his right hand on the small of the stock.

Captain Romeyn's method, I imagine, is somewhat similar to mine, but placing the rifle on the left side would be a serious obstacle to mounting. Of course this might be obviated by slinging the rifle on the person before mounting, as suggested by me above, and placing it in the scabbard after mounting.

I believe that there are great possibilities in the method proposed by me, and I would recommend that some officer, other than myself, and who takes an interest in this matter, be authorized to make a further trial of said experiment.

If the method is tried I would suggest that the scabbard be properly modified. The way that I had it arranged was not entirely satisfactory, because the point of attachment of the top strap was too high, and because in order to use the ring it was necessary to turn the scabbard with the "flare" of the mouth to the front. To ride well, the "flare" of the mouth should be to the rear, the toe of the piece should always point to the rear, the barrel being to the front. I also respectfully request authority to publish this report in the JOURNAL OF THE U. S. CAVALRY ASSOCIATION.

N. F. MCCLURE,
Captain, Fifth Cavalry, Commanding Troop "C."

VIRGINIA HORSES.

FORT MEYER, VIRGINIA, April 10, 1908.

The Quartermaster General, U. S. A., Washington, D. C.:

SIR:—Pursuant to the verbal request of the Quartermaster General's office, I have the honor to make the following report from personal observations upon the horse situation in Virginia, in the vicinity of Berryville, Millwood, Delaplane, Upperville, Middleburg, and the neighboring smaller towns along the Blue Ridge Mountains, in Clark, Fauquier and Loudoun Counties:

The first thing that impresses one is the great number of well bred horses found in this part of the country. Traveling between towns, one seldom sees pedestrians, and very few people driving; practically everybody, black and white, male and female, being mounted upon well bred horses.

This plentiful supply of well bred horses is due to the fact that for generations numerous registered thoroughbreds have been serving selected mares at a stud fee ranging from ten to twenty five dollars, with the result that any one owning a mare has a chance to secure a half-bred foal at a very low figure.

VIRGINIA HUNTER.

Seven-year-old. Owned by Captain C. R. Howland, 21st Infantry.

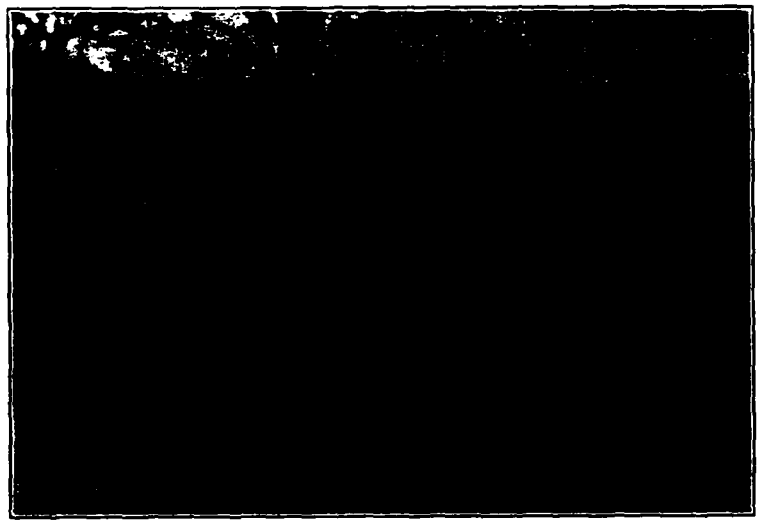
In the Upperville Valley alone there are three stud farms, upon which thoroughbreds are raised exclusively, insuring a good supply of stallions for use with the mares in this valley and vicinity.

In the Upperville Valley blue grass is found in great abundance, affording good pasturage for horses and cattle. In the Shenandoah Valley, on the western slope of the Blue Ridge,

the soil is of limestone formation, with the result that, although the horses are of excellent quality, they cost more to raise, as the grass "burns up" in mid summer.

It is calculated that in the Upperville Valley it costs about forty dollars per annum to raise a horse, whereas the cost of maintenance upon the other side of the Blue Ridge is about sixty dollars per annum.

Due to the high price of oats during the last few years, the great majority of horses are fed upon unshelled corn,



VIRGINIA COLT.

Four-year-old. Owned by Captain R. O. Van Horn, Seventeenth Infantry.

very little, if any, oats forming part of the horse's ration. This applies to the hunters and hacking horses as well as to the light and heavy draft horses.

Of course, upon thoroughbred stud farms the above does not apply, as they can afford to go to greater expense than can the ordinary farmer or stock raiser.

The average price of a good type of military charger, say a half bred, 15.2 to 16 hands high, from five to eight years of age, weighing from 1000 to 1100 pounds, will run from $200

to $275, broken but not trained, and from $250 to $300 for the finished product.

Photographs are herewith submitted, showing types of horses recently purchased for personal use of officers on duty in Washington.

In relation to the purchase of "small horses for mounted

VIRGINIA COLT.

Five-year-old. Owned by Lieut. F. P. Lahm, Sixth Cavalry.

messengers," a careful search was made for horses of this type, and quite a number of stunted half breds were found, ranging from 14.2 to 15.1 hands, which can be secured at the rate of $100 per head delivered at Fort Myer, if bought in lots of ten or more.

These horses are far preferable for use by mounted

messengers and for army polo than the average Western cow pony purchased at a somewhat smaller figure, but costing more when brought from Texas or California for use in the Department of the East and in Cuba.

Photographs of several of these stunted half breds are herewith submitted. These small horses are speedy, handy,

and good weight carriers for their size, and are preferable to the Western ponies of the same size.

Light draft animals from 1000 to 1200 pounds, 15.2 to 16 hands, may be purchased at about $200 per head.

Many of the farmers and breeders in this section of Virginia are now devoting more time to the raising of draft

horses than they did formerly, as they claim it is a more profitable investment, as the draft horse is not as expensive to raise and keep as is the saddle horse.

In conclusion, it is respectfully suggested that in the event of the adoption of the Quartermaster General's scheme for remount depots, that the Shenandoah Valley be carefully considered as an ideal location for one of these remount depots, as the supply of luxuriant blue grass is practically unlimited, affording excellent pasturage facilities for a large

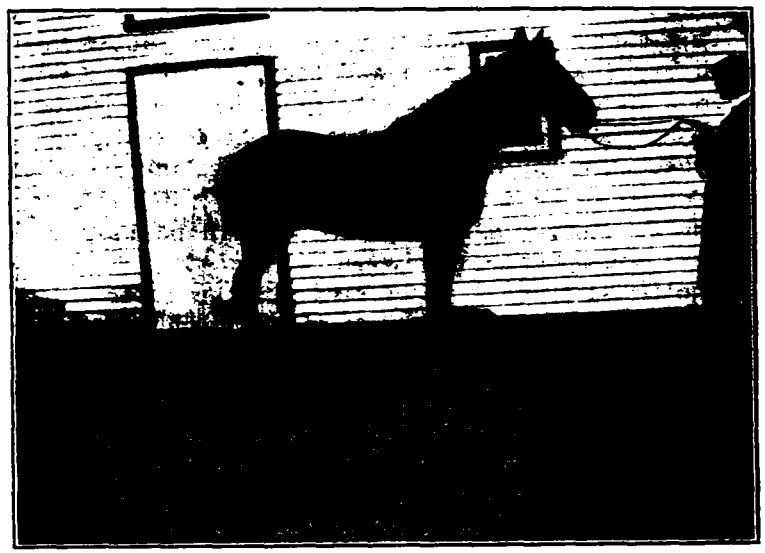
VIRGINIA POLO PONY.

number of animals. The land is not very expensive, and a large tract well watered and pastured could be purchased at a very economical figure.

This is the country from which Mosby's guerillas and Jeb Stuart's cavalry secured many of their famous mounts, with which they did such wonderful long distance riding during the Civil War. The decendants of these hardy horses are numerous, and the supply practically unlimited, as almost all the land owners are raising one or more horses for pleasure or for profit.

There are many officers on duty in Washington who are desirous of purchasing a better class of charger than that furnished by the government, and it is recommended that all such officers be encouraged to personally purchase these excellent mounts.

This will give each officer a good idea of the resources of Virginia so far as horses are concerned, which is an education in itself to all officers interested in horses, and will bring him into close contact with the people who raise these



VIRGINIA POLO PONY.

animals, from whom much valuable information may be gained, and contained in the personal report required to be submitted by each officer concerned, for the information of the Quartermaster's Department, with the result that in a short time practically all of Virginia will be covered and reported upon as a horse center without expense to the government.

Very respectfully,

F. B. HENNESSY,
Captain Third Field Artillery.

NEW CARBINE FOR THE GERMAN CAVALRY.

ACCORDING to the *Ailgemeine Schweizerische Militar-zeitung*, the German cavalry is in process of re-armament with a new carbine. The weapon at present in use is sighted up to 1200 metres. The new rifle will be sighted up to 2000 meters, and will fire the projectile, Mark 1898. A certain number of regiments have already received the new carbine.

This shows the great importance that the Germans attach to dismounted action and fire of cavalry. A knife bayonet, attached to the new weapon, has been issued to eight regiments. This bayonet is similar to that given to the pioneers, mitrailleuse detachments, etc., and has a saw back. It is to be worn on the belt and will serve as a weapon in hand-to-hand conflicts, or will be used more frequently in the camp or bivouac.

The Swiss military paper says that the saber will be withdrawn from those regiments to whom the new carbine bayonet has been issued in order to reduce the weight carried by the horse. In this our contemporary must be in error. The Germans would never take away the saber from the lancer, for if the latter loses his lance, as often happens, or in close quarters in a *mêlée*, would be helpless.

The pouch belt is to be done away with in the German cavalry, to whom a cartridge belt, similar to that used by the infantry, will be soon issued. It is not to be supposed that these changes in the armament of the soldiers of the Fatherland mean any deviation from the good old shock action tactics immortalized by Seidlitz and Zeithen. Far from it. But the opportunity for shock action does not occur every day, whilst the cavalry soldier is constantly obliged to dismount on reconnaissance. Moreover, the increasing range of the infantry rifle renders it a matter of necessity for cavalry to be able to defend itself by fire when reconnoitering.

Thirty years ago, in the Turkish War, the Russian dragoons were killed by Turkish bullets whilst they were unable to answer the fire of their opponents armed with the Martini rifles. This so angered Skobeleff that he proposed the armament of the cavalry with an infantry rifle. The metamorphosis produced a hybrid soldier, who lost the dash of the horseman without gaining the marksmanship of the infantry soldier.—*From the Broad Arrow.*

CORRESPONDENCE FROM PINAR DEL RIO.

PINAR DEL RIO, CUBA, April 11, 1908.

THIS station and the country around it has been the scene of much activity during the past month, in connection with the target practice and maneuvers of the combined forces assembled here, under the command of Colonel James Parker, Eleventh Cavalry. This force consisted of the Second Squadron, Eleventh Cavalry, Major Homer W. Wheeler, commanding, from Camp Columbia, Cuba; Third Squadron, Eleventh Cavalry, Captain William T. Littebrant, Eleventh Cavalry, commanding, from Pinar del Rio, Cuba; Mountain Batteries "A" and "B," Second Field Artillery, Captains Irwin and Williams, Major Conklin, commanding, from Camp Columbia; Light Battery "F," Third Field Artillery, Captain Gatley, commanding, from Camp Columbia; the Light Battery of the Cuban Army, Captain Silva, commanding, from Havana; a detachment of Company "I," Signal Corps, Lieutenant Hemphill, commanding, from Camp Columbia, with field wireless telegraph and field wire buzzer outfits, heliograph and flag outfits, and two complete pack trains of fifty mules each. There were also present, to observe the maneuvers, General Barry, commanding the Army of Cuban Pacification; Major Treat, Inspector General; Captain Furlong, General Staff; Captain Clayton, attached to the Rural Guards, and ten officers of the Rural Guards, whom Captain Clayton escorted.

The country around Pinar del Rio is ideal for the purpose of maneuvers, combining as it does all varieties of

terrain. On this occasion the troops made use of a section of the island fifty miles square, extending from the southern to the northern shore in a north and a south direction and a considerable distance to the east and west of Pinar del Rio. Settlements are few and confined to certain localities, the rest of the country being open and without habitation. A ridge of low mountains passes through the center of the island. Southwesterly and south of this a plain, seventeen miles wide, extends to the sea, the southern half of this plain being well wooded. North of this ridge, about half way between it and the sea, passes through the island the Sierra, a range of mountains of marble, with sides almost perpendicular, presenting a strange and picturesque aspect, on account of its strange vegetation and hundreds of caves that have been washed out by the action of wind and water for millions of years. These Sierras rise from the level plain and are traversed, only in few places by passes. North of the Sierras great pine wooded ridges reach down to the northern sea. The country is wild and picturesque in the extreme. Through the Sierras, reaching from Pinar del Rio to Esperanza on the north coast, Americans have built a splendid highway, macadamized, with iron bridges, a road which is sure to be in the future the Mecca of automobile tourists. The soil of this part of Cuba is sandy and contains numerous lakes, and is traversed by many little rivers.

At the earnest request of Colonel James Parker, Eleventh Cavalry, this section of the country was taken advantage of for field operations by cavalry and artillery. The troops first spent two or three weeks in completing their target practice, the cavalry on the beautiful rifle range seven miles south of Pinar del Rio, while the artillery, whose camp was at Lake Juncos, seven miles east of Pinar del Rio, fired over the extensive plains and ridges in that vicinity. This target practice was most satisfactory to both arms, the cavalry qualifying a large portion of their men as sharpshooters. The combined strength of the three commands was: Officers, 44; men, 1020; horses, 764; guns, 14; mules, 533.

The cavalry camp was connected with headquarters at Pinar del Rio by telephone, and the artillery camp by field wireless telegraph, the field wireless at camp communicating with permanent Cuban wireless station recently installed at Pinar del Rio, in barrack enclosure. Uninterrupted communication was maintained and the system was a remarkable success.

The first field problem took place on April 1st and 2d, 1908. The commander of the Brown Force was Major Homer W. Wheeler, Eleventh Cavalry, and the commander of the Blue Force Major John Conklin, Second Field Artillery, the chief umpire being Colonel James Parker, Eleventh Cavalry. In this problem the Brown Force, consisting of the Second Squadron, Eleventh Cavalry, and one battery of Mountain Artillery, coming from the eastern part of the island, attempts to make a raid in the western part of Pinar del Rio. The Blue Force, consisting of the Third Squadron, Eleventh Cavalry, Battery "F," Third Field Artillery, and Battery "B," Mountain Artillery, and detachment of the Signal Corps, stationed in Pinar del Rio, is informed of the approach of the Brown Force, twenty-five miles to the east, and by reconnaissance and scouting and the use of field signaling, was to determine its line of march, and having done so, was to intercept the Brown Force.

This problem is similar to the problem presented to the Spanish and the Cubans, when Maceo, in 1897 crossed the trochas, and passing Pinar del Rio, penetrated into the western part of the province, burning and destroying. It was, therefore, like the two problems which followed, of a practical kind.

As worked out, the Blue commander established a wireless telegraph station seven miles toward the east and heliograph stations, one four miles toward the southeast, one seven miles to the south. In advance of these stations were sent out a large body of scouts, under Lieutenant Shelley, Eleventh Cavalry. The enemy was discovered and their position and line of march reported at a distance of fourteen miles to the east, which showed excellent work on the part of the cavalry scouts, who had to cover one hundred square miles of territory.

The Brown position and line of march being discovered, the Blue Force proceeded southeast to intercept them, and at 11:00 o'clock that night went into camp, with orders to be saddled up before dawn and take up the march. The Brown force marched southwest, discovered the position of the Blue Force by a mere chance, and exactly at dawn made a vigorous attack upon the Blues. The Blues had failed to put outposts far enough out, and were in the act of saddling up when this attack came. The attack was an entire success, the Blues being taken by surprise, and they were thrown back, affording a passage to the west for the Browns. The Blues lost heavily.

The Browns, pursuing their march towards San Juan y Martinez, which they proposed to burn, were pursued by the Blue Force. Owing to the fact that the Browns had to suit their march to that of the Mountain Battery, of which the enlisted personnel marched on foot, and could not, therefore, make over four miles an hour, the Brown Force was soon overtaken by the Blues, and had to make a running fight. They, however, sent one troop on at a trot towards the west, which reached San Juan y Martinez, its objective point without opposition at 8:00 A. M. The remainder of the Brown Force, beleaguered by the Blues, fought their way to Lake Santa Maria, where the problem was declared off by the chief umpire, on account of the exhaustion of men and horses.

This problem afforded the most instructive object lesson in the use of scouts, officers' patrols and signaling, to the young officers who took part in it. It is probable also that the lesson derived from the surprise on the early morning of April 2d, which was due to the lack of proper outposts, will be worth the cost of many problems.

It will be seen that the problem was worked out in the plains country more or less obstructed by lakes, marshes and woods, extending to the east, south and west of Pinar del Rio. The Brown Force avoided the hilly and mountainous country to the north of Pinar del Rio, in which they showed good judgment. The march of the Brown Force from 2:00 A. M., April 2d, until dawn, was conducted with the greatest skill, and the point aimed at was reached at exactly the

right time. The honors in this problem remain with the Browns. The whole affair was realistic to the greatest degree.

SECOND PROBLEM.

The second problem took place on April 5th and 6th. In this the commander of the Brown Force was Captain Samuel G. Jones, Eleventh Cavalry, and the commander of the Blue Force was Captain Stephen H. Elliott, Eleventh Cavalry, the chief umpire being Colonel Parker, Eleventh Cavalry.

The Brown Force, consisting of the Third Squadron, Eleventh Cavalry, and machine gun platoon, Light Battery "F," Third Field Artillery, Fifth Company Cuban Artillery (two field guns), Mountain Battery "B," Second field Artillery, and the Signal Service detachment, was supposed to be a scouting force sent to reconnoiter Pinar del Rio, from a brigade of all arms which had landed at Esperanza. The Brown Force is found in camp north of the Sierras, with outposts to protect the command from attack, and detached posts to hold the northerly exits of the passes in the Sierras, in preparation for an advance. The Blue Force stationed at Pinar del Rio received information of the enemy's landing too late to oppose it, and marches toward them with the object of taking possession of the pass and contesting the enemy's advance southward. This problem commenced at 4:00 P. M., April 6th. Two miles south of the Brown camp was a valley of Los Banos on the main road to Pinar del Rio, which valley has what might be called a gate at the south thirty feet wide. The possession of this gate was desired by both forces. From the north Lieutenant Shelley, Eleventh Cavalry, and thirty-six men of the Brown Force, moved toward it at a gallop, followed by two mountain batteries. From the south three troops and a mountain battery moved toward the same point, the advance under Captain Tompkins, at a trot and gallop. The gate was reached almost simultaneously, Lieutenant Shelley's men dismounting and opening fire, he being a little ahead. They are charged mounted by the Blue advance under Captain

Tompkins, which is repulsed, and falls back to cover, joining the main force of the Blues, who now attempt a flank attack, sending two troops on a trail over the mountains, which trail debouches in rear of the Brown position. Lieutenant Shelley is now reinforced by four troops of Browns, two of which hold the gate, the other two acting as reserve. The Blue flanking party finally gains the summit of the mountains and fire into the rear of the Brown at the gate. At the same time the Browns are charged by Captain Tompkin's troop, who at a run, pass through the gate and encounter the Brown reserve at the other end of the valley. This troop is defeated and retires. About this time the Blue fire, from the hills on the flank and rear of the Brown advance position, forces the Browns to retire from the gate covered by the fire of the reserve. The Blues push through. The Browns retire into the hills and a series of detached engagements ensue, which are terminated by a decision of the umpire, ruling the Brown Forces back one mile.

About this time the Brown commander, believing that the enemy can not be dislodged from their position by direct attack along the turnpike, decides to turn their position by making his way by mountain roads through a broad pass which exists over the Sierras, to the east of the Carretera. He makes up his mind that for concealment he will make the movement during the night. Leaving behind a small containing force (cavalry) to harass and deceive the enemy until well in the night, the Browns evacuate their camp about 7 P. M., and the night march commences. The Blue Force, discovering that the Browns have withdrawn, retire to a camp near Viñales, at the southern end of the pass, fearing that they might be penned up, and thinking that this might be a better point from which to oppose the Brown's advance, the direction of which they do not know. The night march proved wearisome in the extreme. The artillery and wagons of the Browns encountered obstacles in the way of deep creeks, high hills and washouts, which were overcome only with the greatest difficulty. Cannon had to be hauled up steep grades by cannoneers on foot. Wagons were upset and rerighted. To add to the difficulties, occasionally the enemy's scouts were encountered, who fired on the column as it passed. The intention of the Brown commander was to reach a ridge of hills 200 feet high south of Viñales, from which, if gained, he could command the exits to the south from both passes. This was accomplished shortly after dawn. After a short combat between the Blues and the Browns, in which the Blues were at great disadvantage, the Browns proceeded on their way toward Pinar del Rio, their road being unobstructed by the Blues. In this problem it may be said that while the Blues lost heavily on the first day they had the advantage. On the second day it was the Brown Force which gained the advantage and a successful solution of the problem.

The Brown troops, during these two days, were under arms and on the march almost continuously from 7:00 o'clock A. M., on April 5th until 5:00 o'clock P. M., April 6th, having marched about fifty-two miles. The Blue troops marched about forty five miles. This great effort for men and horses was performed willingly, zealously and uncomplainingly.

THIRD PROBLEM.

The third problem took place April 8, 1908. The commander of the Brown force was Captain Frank Tompkins, Eleventh Cavalry; of the Blue force, Captain William T. Littebrant, Eleventh Cavalry. The chief umpire was Colonel Parker, Eleventh Cavalry. In this problem the Brown force, coming from Coloma, on the southern coast of the island, and consisting of the Second Squadron, Eleventh Cavalry, was opposed by a Blue Force, consisting of the Third Squadron, Eleventh Cavalry, and all the artillery and signal corps. The problem was one of contact of cavalry screens, which later assumed the form of an attempt by the Browns to entirely evade the Blue Force, which took up a position near Pinar del Rio and attempted to cover it by a line of patrols, outposts and cavalry reserves, supported in rear by four batteries of artillery, stationed at commanding points. The attempt was successful. Two troops, under the command of Captain Vidmer, made a ride of twenty

miles around the Blue position, reaching the high and rolling ground north of Pinar del Rio, and thence making its way under cover in a most skillful manner into the city, before it could be overtaken by the Blues, who were informed of its advance, but too late to oppose it. Captain Tompkins, commanding the other two troops, moved under cover up the river Guama and attained a position, where by means of a demonstration of one troop he was able to attract the attention of the enemy sufficiently to allow another troop, under Captain Parker, to get into the city. In addition, an officer's patrol, under First Lieutenant Davis, Eleventh Cavalry, stole through the lines of the Blues successfully.

In the matter of reconnaissance and obtaining information, this problem was successfully worked out by the Browns, whose task was made much easier by a misunderstanding on their part of the problem, which caused them to start from a point three miles further out than had been contemplated. This made it impossible for the Blues to obtain touch with them at the beginning of the problem.

Each problem was followed by a discussion at the Officers' Club in Pinar del Rio, at which reports of commanding officers and umpires were read, and the chief umpire gave his decision. At the conclusion of the problems the troops from Camp Columbia started on their return journey. Advantage was taken of this occasion by Troops "G," Eleventh Cavalry, Captain Tompkins, commanding, and "F," Eleventh Cavalry, Captain Parker, commanding, with the assent of the commanding general, to make a forced march to Camp Columbia, a distance of 120 miles. This distance was covered by Troop "G," Eleventh Cavalry, Captain Tompkins, commanding, in thirty hours, between 12:30 A. M., April 10th and 6:00 A. M., April 11th, 1908. The distance was covered by Troop "F," Eleventh Cavalry, Captain Parker, commanding, in twenty-eight hours, between 5:00 P. M., April 10th and 9:00 P. M., April 11th. Men and horses in good condition.

SADDLES.

FORT YELLOWSTONE, WYOMING, May 8, 1908.

The Adjutant General, Department of Dakota, St. Paul, Minn.:

SIR:—I have the honor to invite attention to the following: In spite of the many advantages possessed by our service saddles, namely; lightness, strength, serviceability, cheapness, and a tendency to cause the center of gravity of the rider to fall at or near the center of the bearing surface, it is believed that it can be advantageously modified.

The necessity of the past, due to the smallness of many horses that had to be taken for cavalry service—which required the short saddles we are still using—has disappeared. With larger horses, and in consequence longer backs, the side bars should be lengthened to give a bearing surface commensurate with the burden imposed and with the size of the horse.

Presumably the horses of Troops "F" and "G," Eighth Cavalry, are the average of the present cavalry horse, which should be larger rather than smaller.

The largest saddle issued to "F" Troop is the twelve-inch. This saddle was placed on the forty-nine horses of the troop, and it was found that the average distance between the rear ends of the saddle bars and the vertical planes passing through the points of the hip bones of the horses is 5.7 inches. (Only the twelve inch saddle was used, and it was placed "a hand's width behind the shoulders.")

In the case of Troop "G," the saddles that are normally used on the horses were taken. It was found that the average distance from the ends of the side bars to the initial planes passing through the parts of the hip bones is 10.64 inches. These data are certainly suggestive of the importance of mere bearing surface. What is still more suggestive is found on examination of the regulation cantle pack, with the service kit (consisting of nose bag, side lines when carried, shelter tent half, shelter tent pole, five shelter tent pins, one blanket, one comb, one housewife, one towel, one pair

drawers, one undershirt, one rubber poncho, one cake soap, one pair stockings, one tooth brush, one pair shoes, two pairs stockings) when duly attached to the saddle. It is simply impracticable to secure this pack so that it will not eventually drop down on the horse's back; and were it practicable to prevent this, it would only emphasize the importance of mere bearing surface for the saddle. This pack will, in time, especially when horses become thin and their back bones prominent, cause sores, however carefully the saddles be put on. At best there is nothing between it and the horse's back but the blanket, for it readily breaks down the small support given at the rear by the saddle bags, to the detriment of the latter. In fact, it is almost incredible that a practical people should impose such burdens on such limited bearing surface when there is ample surface over which the weight can be advantageously distributed. In this respect attention is invited to the military saddles of all leading nations. It is clear that the saddle bars can and should be lengthened to the rear by fully four inches, even were there no consideration of the cantle pack. This pack is, however, a necessary adjunct in peace, and doubly so in war. With lengthened side bars, it can rest on them, thereby largely giving the horse immunity from sore back.

It is believed that three quarters to one inch should also be added to the front ends of the side bars and they be made more rounding by padding under the side bars.

In connection with the saddle I beg also to invite attention to our antiquated hood (tapidero), which is carried 365 days for probably five days' service. With the large stirrups they cover, nearly as much space is required for them in packing as for the saddles. As the government furnishes excellent warm foot gearing, the tapidero is not required in winter. It would seem to be fully as advisable to cover the knees by a leather appliance belonging to the saddle as to protect the feet. Nothing about the saddle is so unsightly as the large stirrups with their tapideros. Stockmen and cowboys have almost entirely discarded this South American device, and in no up to date army can it be found.

Our solid saddle trees would thoroughly well carry strong safety bars, and a good steel stirrup would be far more sightly and attractive than our present one, and equally as serviceable and safe. Steel stirrups would moreover occupy less than one-fourth the space of the wooden ones with their hoods.

For these reasons I would recommend a consideration by the proper authorities of the present saddle, with a view to adding three-quarters to one inch to the front of the side bars, four inches to the rear of the same, more rounding of the under parts of the side bars by padding, and also a substitution of safety bars and modern cavalry stirrups for our present loop and the hooded stirrups.

Very respectfully,

H. T. ALLEN,
Major Eighth Cavalry.

Prize Problems.

PRIZE PROBLEM NO. 6.

The Editor Cavalry Journal:

DEAR SIR:—The committee selected to examine the solutions of Prize Problem No. 6 has the honor to report that it finds the solution signed "Kickapoo" the best of the two solutions submitted, and recommends that the prize be awarded to the author. In the other solution the command was too widely dispersed.

Very respectfully,

FARRAND SAYRE,
Captain 8th Cavalry.
MATTHEW E. HANNA,
Captain 3d Cavalry.
DUNCAN K. MAJOR,
Captain 27th Infantry.

In accordance with the above report, the prize for the best solution of Prize Problem No. 6 has been awarded to Captain Howard R. Hickok, Fifteenth Cavalry.

PRIZE PROBLEM NO. 6—SOLUTION BY "KICKAPOO."

1. CAPTAIN A'S ESTIMATE OF THE SITUATION.

Mission.—Troop "A" has been designated as outpost cavalry and Captain A has been ordered to take up a line of observation in the vicinity of Millwood road, keep touch with the enemy and patrol the roads west and south of Leavenworth. In keeping touch with the enemy and by reconnaissance, Captain A should obtain some information of the enemy's probable strength and dispositions, should prevent reconnaissance by the enemy, and should give timely warning to the outpost commander of any hostile movements. The details of performing his duties and distributing his troop have been left to Captain A's judgment.

The Enemy.—From the information concerning the enemy given in the "situation," nothing can be positively concluded as to the strength of the force now in Fort Leavenworth. Considering the hour of the day, now 3:00 P. M., the fact that a Red division was known to be marching from Platte City, Missouri, a day's march distant, on Fort Leavenworth, that the line of Salt Creek and Sheridan's Drive Ridge is a natural one for an outpost of troops in Fort Leavenworth against an advance from the northwest, and that the Red troops occupying this line do not appear to be making any aggressive movements, Captain A concludes that the troops immediately opposed to him are the enemy's outpost. The Red cavalry fell back from Plum Creek before the Blue advance. The Red cavalry, at least that part used in observation, is weaker than the Blue cavalry. The Reds hold the bridges on Millwood road and at Frenchman over Salt Creek. Whether these are held by cavalry or infantry is not stated.

Considering the fact that the enemy's cavalry was encountered so near the Red natural outpost line and is apparently weak, certain deductions may be made: (1) That for his own reasons the Red commander does not wish to make a more extensive reconnaissance; (2) that the Red

division is inadequately supplied with cavalry; or (3) that only a detachment of the Red division with a small force of cavalry is now in Fort Leavenworth. This last seems most probable.

Blue Troops.—The Blue detachment consists of a squadron of cavalry, a regiment of infantry, and a detachment of signal troops. The outpost consists of two companies and a machine gun platoon. The line of resistance is on some spurs and ridges just south of Kickapoo. In case of attack, this line is to be reinforced by the detachment. The line of observation designated for the outpost cavalry is about a mile and a half in advance of this line. The object of the Blue detachment is to observe the hostile forces crossing the Missouri River at Fort Leavenworth. The remainder of the Blue division is concentrating at Atchison, too far away to render any assistance in event this detachment should be seriously attacked. Should the Red division, or any considerable part of it, advance, the Blue detachment will, of necessity, fall back.

Terrain.—Between Kickapoo and Sheridan's Drive Ridge the terrain is generally open and rolling farm land, cut up by a number of small ravines, of which Plum Creek and Salt Creek are the largest, and of some consideration as obstacles. These two creeks are fordable with difficulty, rendering the bridges of greatest importance. There are two bridges over Salt Creek, at Frenchman and on the Millwood road, both of which are in the enemy's hands. The bridges over Plum Creek, on the 17–47 and 19–23 roads, are in Captain A's possession. The railroad bridge at "I" may or may not be held by the enemy. This is so near the Blue line of resistance, and so far in rear of Captain A's designated position, that obviously the infantry of the outpost must hold or cover it. The roads available for the enemy's advance are the G–Frenchman–17 road and the 15–Millwood road. His cavalry may work around to the south, and approach the Blue position from the west and southwest. The approaches from these directions must, therefore, be observed. Due to the natural strength of the enemy's position along Salt Creek, Captain A's dispositions in that vicinity may be safely limited to contact and observation. He has been directed to send patrols to the south and west. Approaching the city of Leavenworth from the west are several roads by which reconnaissance may be made, and from the city to the Fort there are several available roads.

Captain A has been directed to take up a line of observation in the vicinity of Millwood road. He observes in this vicinity the following high points, from which a more or less extended view may be obtained: Hill 1020 at Briedenbauch, on the west; hill 910 at Sprong; hill 900, about one-half mile south of Sprong and just east of the A. T. & S. F. R. R.; hill 900, just southwest of Taylor S. H; hill 880, just east of Taylor S. H.; hill 876, northwest of J. E. Daniels, and hill 862, northwest of G. Daniels. This last hill is a considerable distance to the rear of Millwood road, but as it covers the field well toward Salt Creek and the railroad bridge, it should not be neglected. As some of these hills afford a better view and cover the same field as others, it will not be necessary to occupy all of them. As the hills are to be occupied for observation only, the posts thereon may be small.

The bridges over Plum Creek, north of 17 and 19, respectively, should be guarded. This can be done by placing a small post at each, holding the main body of the troop in a convenient place to the rear, available to defend either bridge that may be attacked. Or else, the troop may be divided, a support being placed at each bridge. This second method seems preferable.

Decision.—Captain A, therefore, decides to dispose his troop as follows: To place a support of two platoons at each of the bridges north of 17 and 19, respectively, to occupy a line of observation Breidenbauch; hill 900, one-half mile south of Sprong; hill 880, east of Taylor S. H.; hill 876, northwest of J. E. Daniels; hill 862, northwest of G. Daniels; and to send patrols to Government and Atchison hills, and to Fort Leavenworth via Leavenworth from the west and south.

2. ORDERS.

Captain A then issues his orders verbally to so much of the troop as is assembled. If reduced to writing, these orders would take the following form:

OUTPOST CAVALRY, DET., BLUE DIV.,
A. AARON HOUSE, KANS., 3 Oct., '07, 3:10 P. M.

FIELD ORDERS }
No. 1. }

1. Red cavalry patrols have just been encountered on PLUM CREEK and driven back to the bridges over SALT CREEK on the MILLWOOD road and at FRENCHMAN. These bridges are strongly held by Red troops. A Red division was known to have been marching to-day via PLATTE CITY, MISSOURI, on FORT LEAVENWORTH.

Our detachment will camp for the night at KICKAPOO with an outpost occupying a line of resistance L. A. AARON-PLUM HILL.

2. This troop will constitute the outpost cavalry and will occupy a line of observation BREIDENBAUCH-HILL 900 about one-half mile south of SPRONG-HILL 880 east of TAYLOR S. H.-HILL 876 near J. E. DANIELS-HILL 862 near G. DANIELS.

3. (*a*) The first and second platoons, Lieutenant B commanding, will constitute Support No. 1, will take station on hill 849 north of 21, and will cover from BREIDENBAUCH to the BURNS house inclusive. Patrols will be sent to the west and to the south, reconnoitering GOVERNMENT and ATCHISON HILLS, LEAVENWORTH and FORT LEAVENWORTH.

(*b*) The third and fourth platoons, Lieutenant C commanding, will constitute Support No. 2, will take station at the bridge over PLUM CREEK, one-fourth mile south of this point, and will cover from the BURNS house exclusive to hill 862 northwest of G. DANIELS inclusive.

All roads and SALT CREEK will be patrolled in the limits of each support.

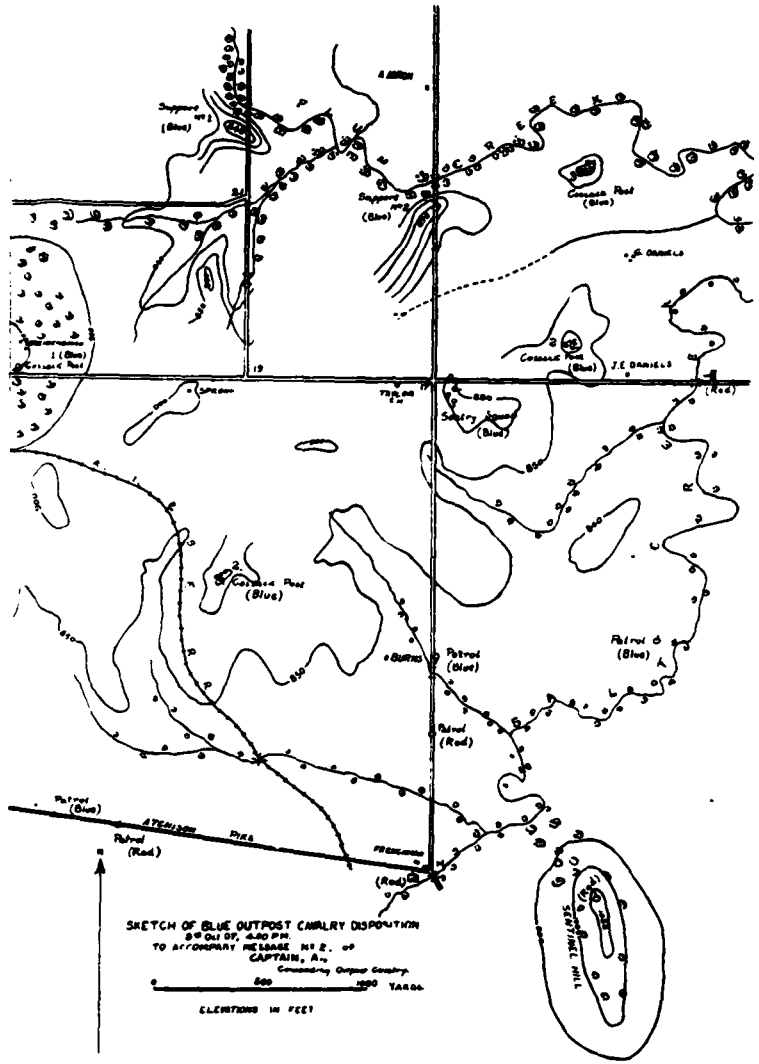
4. In case of a determined attack by the enemy, we will fall back upon the line of resistance, moving around the right flank.

5. Messages will be sent to Support No. 2.

A,
Captain First Cavalry.

Verbally to the assembled troop; by buzzer to outpost commander.

For the night a second set of orders would be issued, depending upon instructions received from the outpost commander.



3. MESSAGES AND REPORTS.

Same are appended hereto.

No. 1 was so much of the above order as was transmitted to the outpost commander.

Other messages would be sent as important information is obtained or changes in hostile dispositions are observed.

U. S. ARMY FIELD MESSAGE. (Mounted Messenger.)

From Outpost Cavalry. At bridge south of A. Aaron.

Date 3 Oct., '07. Hour 4:00 P. M. No. 2.

To *Major B, Commanding Outpost, Atkinson House.*

Have inspected outpost cavalry dispositions. These are given in accompanying sketch. No change has been observed in enemy's dispositions. Our patrols are in contact with enemy's patrols on 17-H road and ATCHISON PIKE.

A,
Captain.

Received

PRIZE PROBLEM NO. 9.

(See map of Fort Leavenworth, published in Cavalry Journal for July, 1907, opposite page 166.)

General Situation.

A Blue army in hostile country has been defeated in an engagement on the Big Stranger Creek, twelve miles west of Leavenworth, and is retreating by the Zimmerman and Barnes roads to the south through Leavenworth to the left bank of the Missouri River.

Special Situation—Blue.

At 4:00 P. M., June 30th, the Blue troops have reached Leavenworth and begun crossing the Missouri River by the Terminal and Fort Leavenworth bridges. It is estimated that the army and train will be able to complete the crossing during the night of June 30th–July 1st, provided both bridges can be kept open. The Blue rear guard is holding back the enemy's pursuing troops on the ridge 28-42-50.

At this time, the commander, who is at the U. S. Penitentiary, receives a report from a spy that a hostile column of infantry and artillery is advancing by Kickapoo on Leavenworth. He at once sends out the Seventh Cavalry and Battery "A" Eighth Artillery (Horse), under Colonel A, with orders to prevent interference by this column with the Blue army.

Colonel A, riding at the head of his main body, reaches Atchison Cross at 4:20 P. M., and receives the following message:

Sending Detachment.	Location.	Day.	Month.	Time.
Officers Patrol 7th Cavalry.	Bell Point.	30	June	4:12 P. M.
No. 1	Received			

To *Colonel A:*

Hostile column, estimated strength one regiment infantry, one battery, advancing south KICKAPOO-FRENCHMAN road. Head of main body now at PLUM CREEK. Point of advance guard approaching 17 crossroads. I remain in observation.

K,
Lieutenant.

The rear element of Colonel A's advance guard (one squadron) has at this time reached the cut near 16.

Required:—

1. Colonel A's estimate of the situation.
2. Colonel A's orders and intentions.

Editor's Table.

"Men may talk of patriotism. They may draw a few examples from ancient stories, but whoever builds on them as a sufficient basis for conducting a long and bloody war, will find himself deceived in the end."

—*Washington.*

A CHIEF OF CAVALRY.

In accordance with the report made by a committee of the Executive Council of the Cavalry Association, as set forth in the April number of the JOURNAL, a form of petition has been prepared and will be soon circulated among the cavalry officers in the service. This petition is in form as follows:

To the President of the United States (through military channels), Washington, D. C.

SIR:—Believing that the efficiency of our arm of the service would be greatly increased by the appointment of an official to be known as the Chief of Cavalry, Inspector of Cavalry, or by some other suitable title, said official to be a member of the General Staff, and to have general supervision under the Chief of Staff, of all questions relating to the instruction, remounts, equipment, personnel, etc., of the cavalry branch of the service, with power to inspect.

We, the undersigned officers of cavalry, have the honor to petition you to appoint such an official, preferably from among the colonels of cavalry or brigadier generals appointed from that arm, with such powers and duties as you shall deem best; and we do further petition that you recommend to Congress the enactment of such legislation as may be necessary fully to grant this prayer.

The reasons for and the necessity of having such an official, no matter what his title may be, have been so often and well set forth by the various contributors to the JOUR-

NAL, and particularly by the report mentioned above, that it is unnecessary to repeat them.

The petition is brief and to the point and, in the opinion of your Executive Council, should receive the united approval of every cavalry officer in our service.

It is intended to furnish sheets for the signatures of cavalry officers by regiments, as far as practicable, and so arranged that all can be bound together in attractive form, with an engrossed copy of the petition in front.

THE ARMY MUTUAL AID ASSOCIATION.

There has been received a copy of the last, the twenty-ninth, annual report of the Army Mutual Aid Association, from which the following extracts are made by request :

"*Membership.*—The number of members that have joined the Association since its organization in 1879, is 2219. Five hundred and eighteen have died and 349 have resigned and lapsed, leaving the membership on February 29, 1908, 1352. Fifty-one members joined during the year, twenty-two died, nine resigned and twenty-two lapsed. The total amount paid and forfeited by resigned and lapsed members is $81,418.38. Their outstanding insurance amounting to $1,047,000.00 was canceled. The average age of new members is 28.4 years, and of decedents 60.2 years. The average age of all the members is 48.7 years, a slight reduction from last year and about the same as it was on April 1, 1898, the year of the Spanish War, when the average age of all the members was 48.6 years.

"*Mortality.*—The mortality during the year 1907 was twenty-two, which corresponds to a death rate of 16.2 per 1000. The average annual death rate of the Association since its organization in 1879 is 16.2 per 1000; excluding killed in action it is 14.9 per 1000. The average rate for the Navy Mutual Aid during the same period is 14.8 per 1000. In the past decade 304 members have died or were killed in action ; 145 were on the active list, and 159 on the retired list. The average age of insured at death for the past three years was 60.4 ; average duration of membership 22.3 years.

"*Payments to Beneficiaries.*—The payments to beneficiaries during the year was $75,000.00. Of this amount $66,000.00 pertained to the fiscal year 1907–1908, and $9,000.00 to last year. The total payments to beneficiaries now aggregate $1,544,806.87. All death claims are promptly paid immediately upon official notification of death. In one instance part of the benefit was placed at the disposal of the beneficiary by telegraph. In the prompt payment of its insurance obligations the society performs a necessary and indispensable service unequaled by any other insurance company.

"*Reserve.*—The total value of your reserve on February 29, 1908, taking the market quotations of bonds of that day, amounted to $278,409.28, an increase of $50,552.53 during the year. It is estimated that as long as present rates are collected this gratifying growth will continue at an average rate of about twenty-five or thirty thousand dollars per year.

"The reserve will soon exceed the limit authorized in our constitution, and the question will come up of either distributing this excess or increasing the limit, say to $50,000 for every hundred members. You can all see the benefit of an adequate reserve. Not only does it give the Association safety in case of any emergency, but with our bonds invested to yield 4½ per cent., the interest earnings every year will pay a certain number of the death claims. The interest on the present reserve now pays four or five benefits, and if we double it the interest should pay ten benefits. I think this would be a good matter to take up this year, and it certainly will not hurt the Association in any way merely to know that we are increasing our reserve. Present rates are apparently ample to increase this fund, and in the course of ten years it will probably be doubled.

"*Management.*—The earnings of the society during the year from interest on investments and deposits amounted to $11,398.73, an increase from last year of $5,179.05. The rate of interest realized on securities owned now averages about

4.5 per cent. on their cost. The expense of conducting the business for the year was $1.97 per member, a decrease from last year of $1.06 per member. The charge for expenses last year by the Army Mutual Aid was only 66 cents per $1000 for all ages."

GATEWOOD.

The man who deserved the greatest credit for securing Geronimo and his band, and bringing them where they could be placed on cars and taken to Florida as prisoners of war, was Lieutenant Gatewood. Had it not been for his heroic work, Geronimo would probably have been out for some time, and many more people would probably have lost their lives at the hands of his warriors. Gatewood knew Geronimo, and spoke a certain amount of his language. Geronimo knew that Gatewood's tongue was not "forked," and he followed his advice.

But Gatewood certainly put his life in chancery when he went alone into Geronimo's camp, down in Old Mexico, and talked the last of the Apache war chiefs into surrendering himself and his bloodthirsty warriors to an officer of the United States army.

Lieutenant Gatewood is now at rest, and words of praise for the heroic work he so modestly performed cannot reach him; but when the history of the last of our Indian wars is written, I most sincerely hope that full credit will be given him for the service he rendered during the Geronimo campaign.

JAMES H. COOK,
Agate, Nebraska.

* * *

BEDFORD SPRINGS, PA., August 14, 1905.

Dear "Captain Jim":

Until I met and knew you during the Geronimo campaign of 1885 and 1886, in New Mexico and Arizona, I had always considered Kit Carson's remark that "an Indian did not know as much as a white man, but what he did know he knew better than a white man," to be without question or doubt.

After seeing you compete with the noble red man at his own games, whether it was hide or seek, I became convinced that Kit was wrong; that in fact the white man could master the Indian in the latter's line of thought or action. At any rate, the white man, J. H. Cook, did.

In those trying days I saw the Navajo scouts, "Simon" and "Benow," lose the hostile trail; but once your eye or nose, I never knew which, got the trail, it was never lost. With you it seemed to me the intelligence and the training of the white man united with the instinct of the Indian, and mastered him in his pursuits.

Your services to us in those days were invaluable. I should be very glad if your friends in Congress see fit to give you some testimonial for duty well done.

Yours cordially,

S. W. FOUNTAIN,
Brigadier General U. S. Army, Ret.

NOTE.—The above was found among the papers on hand when the present editor assumed his duties. It is of interest at this time in connection with the article on the Geronimo campaign, which appears in this number of the JOURNAL.—EDITOR.

OFFICERS' ARMY SERVICE CUP.

We have received, through the kindness of Captain F. B. Hennessy, Third Field Artillery, photographs of several of the horses that ran in the race at Benning, D. C., on April 11, 1908, for the officers' army service cup, which are here reproduced.

This race was for a gold cup, of the value of $500.00, to

VIELLE.

go to the regiment, corps or staff department to which the winner belonged, and to be retained at the headquarters of such regiment, corps or staff department for one year, and then to be returned to be again competed for. Whenever the cup is won twice by a representative of any regiment, etc., it shall become the property of the organization or department to which he belongs.

In addition, there were three silver cups that went to the owner of the winning horse and the owners of the horses that came in second and third, these cups being valued at $250, $150 and $75, respectively.

The race was for one mile flat and under the following conditions: That the horses must be the absolute property of the owner from January first to the date of the race; to

DAN.

be four years old or upwards; the horses to be ridden by an officer, in drab service uniform of the regiment, corps or staff department from which the entry is made; and the weight to be carried 150 pounds for halfbreds and fourteen pounds extra for thoroughbreds.

First place was won by "Vielle," owned and ridden by Lieutenant B. T. Merchant, Thirteenth Cavalry, who there-

fore won the first silver cup, and by whose regiment the gold cup will be held for one year.

The horse "Dan," owned and ridden by Captain E. L. Phillips, Thirteenth Cavalry, took second place. This horse is a six-year old halfbred.

Third place was taken by "Picket," a four-year old

PICKET.

thoroughbred, owned by Captain E. B. Cassat, Thirteenth Cavalry, and ridden by Captain B. B. Hyer, Thirteenth Cavalry.

The next illustration is of the horse "General Campagna," owned and ridden in this race by Captain F. B. Hennessy, Third Field Artillery. This is a five-year-old

halfbred, and was trained at the Mounted Service School at Fort Riley.

A cut of the horse "Datto," a halfbred horse owned by Lieutenant Gordon Johnston, Third Cavalry, that also

GENERAL CAMPAGNA.

ran in this race, appeared in the last number of the JOURNAL.

THE SERVICE JOURNALS.

The following on the question of the armament of officers is from the *Broad Arrow:*

"The spasmodic and ill considered nature of many of our army 'reforms' is well exemplified by the new order announcing that in future the weapons of the dismounted officer is to be the sword and pistol in war, and the sword in peace, both in training and maneuvers. That is, we return to the *status quo ante bellum*, when, owing to the losses among officers caused by the Boer rifle fire, the War Office in a brilliant inspiration 'deprived the officer of his sword' and 'reduced him to the ranks,' by giving him a carbine to carry on all dismounted duties. The absurdity of this in peace time very soon became apparent. An officer constantly requires the use of both his hands, for writing, field-glass and a hundred other things, and the carbine, which, as a rule, had no sling, became a nuisance and a useless impediment on parade and everywhere else. After a little it was ordered to be carried only on maneuvers, where it was more a nuisance than ever, and gradually its appearances in public became fewer and fewer, till they finally ceased altogether. Not only was the carbine a useless incumbrance, but it was regarded in peace time by many officers, more especially the seniors, as something of a humiliation, since it reduced them in appearance to the level of their men, and did away with the time-honored badge of office which the sword has been in every army for centuries.

"It may be that under modern conditions of warfare, the occasions for the use of the sword by foot officers will be less frequent than formerly, but positions will still have to be carried by assault, and other occasions will arise where it will be a suitable if not indispensable instrument, so that in spite of the fact that it is sometimes in the way, it must still be retained for practical reasons as well as sentimental associations.

"For real man killing purposes the pistol is of course the officer's best weapon, yet it cannot be said that he has ever received proper practical training in its use. It should be carried not in war only, as the present order directs, but both in peace and in war, so that officers should be as accustomed to it as to the sword. The skillful handling of a pistol or revolver does not come by nature, and the hurried and haphazard purchase of some pattern or another, such as is usually resorted to by the average officer on the outbreak of a war, in which he expects to take part, is not conducive to acquiring a mastery over its capabilites. There may be objections to a sealed pattern, yet it is the only way by which a certain supply of ammunition can be assured in the field. In any event, the equipment of an officer should be sword and pistol at all times, and from the latter being thus constantly in evidence, he may be encouraged to arrive at that efficiency in its use which he should certainly possess, and which so few at present really do possess, though some progress has been made in recent years."

* * *

In a recent number of *Arms and the Man*, under the heading, "Some Notes on the New Springfield," Dr. W. G. Hudson discusses the service rifle and the 1906 ammunition, and compares it with the Krag. He says that "the shortening of the barrel to twenty-four inches does not find much favor in the ranks of riflemen," but this disadvantage has been partly overcome by placing the rear sight farther back, and the sights themselves are very good.

He does not favor the change from W. A. to pyrocellulose powder. He says "its one advantage is that it produces less heat and consequently less erosion. Its disadvantages are that it is much more expensive, and that its shooting qualities are greatly affected by the varying degrees of moisture in the air, so that cartridges loaded on one day are liable to shoot altogether differently from those loaded on another day out of the same can of powder." He says its worst fault is the deposit of a sticky residue in the barrel which causes the shots to strike lower and lower till a bullet chances to carry it out when the next shot goes high.

The Ordnance Department, however, does not believe that the sticky residue mentioned by Dr. Hudson exists, and

believes that the variations in elevation are due to variations in powder charges, diameter of bullets, light, wind and variation in amount of metallic fouling. Another cause is the heating of the barrel, thus increasing the diameter of the bore, or if the upper band is too tight the barrel, being lengthened by the heat of firing, bends slightly, causing the rifle to shoot low. As the heating continues the barrel expands sufficiently to overcome the friction of the band and resumes its normal position, causing the next shot to go high.

The same periodical, in its number for May 7, 1908, contains an illustration and description of the White-Merrill automatic pistol which was tested by the board last year. Its notable features are a visible hammer easily operated by the thumb, and a loading lever in the form of a spur on the trigger guard which is used in case of a misfire to throw out the cartridge and insert another in the chamber. The weapon is neat in appearance, and with a six-inch barrel is only eight and one-half inches long. It is loaded with either a clip or a magazine.

In their number of May 28, 1908, appears an illustration and description of the new telescopic sight adopted by the Ordnance Department for issue to expert riflemen. The instrument measures approximately six inches in length and is attached to the rifle by means of a dovetail shape slot. Adjustments for elevation and windage are made by means of two micrometer screws projecting from one side. Two aluminum plates on the side contain table of elevations and windage.

* * *

The following extracts are from the *United Service Gazette:*

"WHATS THE MATTER WITH THE ARMY?

"Everybody is exercised at times as to why the army is not more popular with the masses, and why military service is not more readily embraced than it is. At one time it was believed to rest on the question of remuneration, and the cry of more pay resounded from one end of the army to the other. But that is not, and never was the trouble, for the difficulty lies much deeper. At one time the army was the soldier's home and he enlisted for what was practically a life time, voluntarily and deliberately, choosing soldiering as his career. But the introduction of short service completely destroyed this spirit, and the recruit of to-day joins—to fight primarily—to see how soldiering feels—to get out of the life of drudgery which encompasses him in civil life—or to gratify his craving for a change. The long-service soldier chose his life and was content with it, endeavoring, as best he could, to make the most of it, and being satisfied with his lot his wants were few. To-day we find that the men in the ranks enjoy much higher pay and far greater privileges, but coming from a class better educated than were their forbears, their wants are greater and their demands practically unlimited. The army is virtually full of boys, and as boys are not men, they lack the latter's sense of responsibility. These are some of the things in the army it is difficult to see how we are to get rid of, for we can never hope to get back again to the old order of things, when it was hard to find in the barrack-room the type of soldier who was 'too big for his boots,' or whose head was 'too big for his hat.'"

"OFFICERS' CHARGERS.

"For some time past the Army Council have devoted much time and careful thought to lessening the officer's expenses, and among other things they came to the conclusion that the fact that officers had to provide their own chargers, pressed unduly heavily on the man of limited means. To relieve the officer of such expense a system was introduced under which officers were supplied with government horses on hire. But it is apparent that this arrangement does not prove a satisfactory one to those whom it affects, and the Army Council are now making another effort to come to the rescue of the officer. With this object they have addressed a series of questions to commanding officers of regular units, in order to ascertain what weight of opinion may be in favor of the arrangement, and what against it. Those who look on it with disfavor are officers of moderate means who, under

the old conditions, found themselves able to afford to keep a private hunter which they could also use for the purpose of their military duties. This it is impossible for them to do now because of the increased expense for stabling, forage, etc., and they do not feel that they are sufficiently compensated for the loss of their proprietorship by being allowed to hire an animal from government. The Army Council desire to gauge the feeling of the officer in this respect, having it in view, if it will meet the case, to allow him to purchase his own horse, for use in private as well as military purposes, in which case, if the animal is passed fit for service, they will refund him the regulation purchase money and merely charge him the hire, as is done now for horses purchased by the government. We believe that this will prove a satisfactory solution of the difficulty."

"INSULTING THE KING'S UNIFORM.

"All right-thinking men will heartily approve of the action of the magistrate who recently convicted and punished a man for bringing the King's uniform into contempt at a carnival held in connection with the Hornsey Cottage Hospital. The individual in question, not perhaps with the intention of drawing ridicule on the soldier's profession, appeared at the carnival wearing a military tunic, trousers and cap. In the cap were some black feathers and artificial roses. His cheeks, eyebrows and nose were daubed with red paint or ochre in a very suggestive manner, while his breast was adorned with two caricatures of medals in the shape of two lids of blacking tins. To complete the mockery, he carried on his shoulder a toy rifle reversed. Fortunately the police showed but little sympathy with his conduct, and although his plea of ignorance of the act was on a par with his appearance in the carnival, the magistrate, we are glad to say, upheld the dignity of the King's uniform, and convicted the defendant. The police are to be commended for the public spirit they showed in the matter, and we have no doubt that the fact that they wear a uniform themselves awakened their sympathies and incited them to act as promptly and effectually as they did. We heartily wish that

the whole force were animated by the same spirit, and then perhaps we should hear less of the King's uniform being insulted not only at carnivals, but also at theaters and restaurants. It is in the power of the police force to inculcate a wholesome respect for His Majesty's livery, and with the example of the Hornsey police to stimulate them, we hope they will not be found wanting in this respect in future."

From the above extracts it will be seen that our friends across the water have troubles and complaints similar to those in our service, but as regards one at least, they have a remedy which their magistrates evidently do not hesitate to apply. Other articles show that they have also a shortage of officers, which they claim is largely due to the fact that the pay allowed is not sufficient to attract the proper class, as they can succeed better in commercial pursuits.

* * *

The Journal of the United Service Institution of India for April is fully up to the usual high standard set by them. The leading article is a continuation of that in the January number on "Mischenko's Raid on Yinkow," which gives a critical and detailed account of that raid. Other articles of interest are "Military Ballooning," and "The Strategy of the Waterloo Campaign." A description is given of a "Raft of Rushes," which is an ingenious method of constructing a raft when rushes or other suitable material is handy.

* * *

The *British Cavalry Journal* for April has as a frontispiece a fine portrait of Field Marshal Lord Roberts. The contents of this number are interesting and valuable as usual. The principal articles of interest to cavalrymen are: "Cavalry on the Battlefield," "Cavalry in the Waterloo Campaign," "Cavalry Spirit and Action,"—short but full of meat—and "The Cavalry of Roumania." It has also a description of their new cavalry sword. This is one having a straight and rapier-like blade, thirty-five inches long, and which weighs two and one-half pounds. They evidently consider the thrust of more value than the cut, as it is evident

from the shape that it is not a cutting weapon. There are several illustrations, showing the style of riding of the officers of the Italian cavalry, at the Cavalry School at Tor di Quinto, near Rome. They ride good looking horses, that are high jumpers.

* * *

The *Journals of the Royal United Service Institution* for March and April have many articles of general interest, but those especially so to our branch of the service are: "The Use of the Horse Soldier in the Twentieth Century," "Studies in Applied Tactics—Cavalry in Battle," and "The National Horse Supply." From the first mentioned article we quote as follows: "Continuing the same line of argument, I would direct attention to the battle of Gettysburg, which I have called 'The Crisis of the Confederacy.' There the Southern States failed to win a victory upon which their existence depended, because their cavalry, under Stuart, was raiding in rear of the Federal army, cutting communications, instead of combining on the battlefield for a decisive blow against the Federal forces." The most valuable adjunct to this periodical are the lists of "Recent Military Publications."

* * *

A new cavalry journal, the *Russian Cavalry Messenger*, has appeared, which has been established by order of the Russian inspector general of cavalry at the Russian Cavalry School for officers at St. Petersburg. It is devoted to the dissemination of knowledge of subjects pertaining to the cavalry particularly, and also of general military training. As it is seldom that an officer in our army can read Russian, it is probable that we will derive little benefit from this new cavalry journal. However, we extend to it our best wishes for success and prosperity. There are now four of us in the field, the British, the Austrian, the Russian, and our own CAVALRY JOURNAL.

WHAT OUR MEMBERS THINK.

A distinguished ex-cavalry officer, now a retired brigadier general, writes us as follows: "No. 68, just received, is so creditable and satisfactory that I must drop you a line of congratulation. It is highly instructive throughout, and we whom you serve, to my mind, owe you and the publication committee the duty of saying "Well done good and faithful servants" in your important task of providing an inspiring and instructive service journal. Johnston's, Bigelow's, Morgan's, Dickman's and Short's articles all show careful good thinking, and Gilpin's racy story is easily among the foremost of the war accounts I have read. Your own exposition of the Association's condition and our membership duties touches my conscience and makes me fear I am a delinquent. If I am, please tell me and I will change my status."

Another, an associate member from the infantry, advances the following opinions:

"I have been looking over the last number of the CAVALRY JOURNAL and comparing its clear type and satisfactory paper with some other military publications, particularly some military books. Some of the latter are probably the worst examples of book making in paper, type, proofreading and binding that I have ever seen.

"I would much like to see the *Military Service Institute Journal* amalgamated with the CAVALRY JOURNAL, the *Infantry Journal* and the *Field Artillery Journal*, and have the new consolidated journal published at Fort Leavenworth, away from the influence of the General Staff and of some others who write of their recollections of the palaezoic period of the world's history.

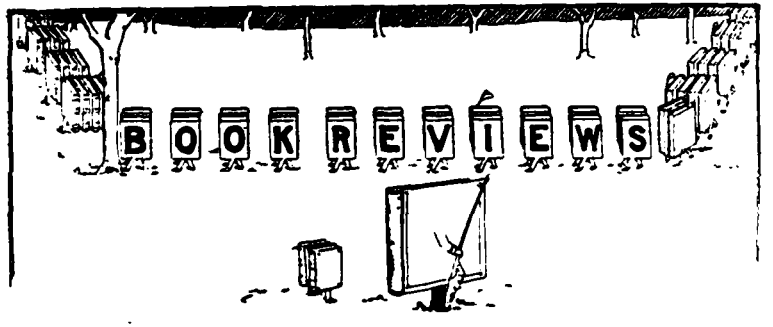
"This consolidation would give a larger subscription list to the new magazine and bring together the different combatant branches of the service, and enable the editor to give a much better magazine, for now a large part of these journals are mere padding. However, I am writing you for another purpose. You probably know the *Naval Institute Journal*, which is the only naval publication and which speaks

for that branch of the service with much more authority than any of our journals do You may not know that it arranges for the publication of the text books of the Naval Academy and other professional books used in the navy. The ownership of such books pass to the Institute and all the profits pass to it after the agreed royalties have been paid the authors.

"The advantage of this is obvious, as it guarantees good paper, good type, good binding and good proofreading and, furthermore, it guarantees that a work which it has published has passed the examination of their publishing board, and therefore a work of some value upon the subject of which it treats. You are in a position to take over such publications for the Leavenworth and Riley schools, and I think you will find it well worth looking into. I imagine that now when an instructor writes a text book for the Leavenworth school and it is adopted, he makes his arrangement with a publisher and gets as large a royalty as he can persuade the publisher to pay. His royalty may be somewhat less than the CAVALRY JOURNAL could afford to pay, yet every one has a certain pride in authorship and wants his work issued in such shape that it can be read intelligently, and that it will not go to pieces the first time it gets damp."

Regarding the above, it will be remembered that the Cavalry Association has organized a book department for the purpose of publishing and selling military works exclusively. This was done with a view of carrying into effect the very ideas advanced by the writer quoted above, that is, to supply books that are known to be of worth to the military student, and, in case of those we publish, such as are not only valuable but at the same time well printed and well bound. We will not put out a cheap book as regards the paper, printing or binding, and we will not publish a book that has not been judged worthy by our Executive Council. Our object is not to make money so much as to furnish our members with good, up-to-date military books and at as reasonable cost as is consistent with good work.

We have received a couple of communications on the subject of the pay of mounted and dismounted officers which our publication committee has decided not to print. This decision is made because the pay question has been settled, for the present at least, and it is believed that no good can come from a further agitation of the question, although these papers have good, sound arguments why there should still be a difference in pay between the mounted and dismounted branches of the service.



Law and Customs of Riot Duty.*

The Editor, United States Cavalry Journal, Fort Leavenworth, Kansas.

SIR:—Some months ago Colonel Bargar, the author of "The Law and Customs of Riot Duty," asked me to go over his book and give it a review. I promised to do so, and stated that I would be unable to give him a complete review until the Staff Class at the Staff College had completed their course in law. As the course in law at this institution includes among other works, "Birkhimer on Martial Law and Military Government," I directed the instructor in those subjects, Captain E. A. Kreger, acting judge advocate, to follow the work of Colonel Bargar along with his subject, and give me his opinion on the merits of the latter work. He expressed himself so well pleased with Bargar's work that I took up the study of the book, and have come to the following conclusions about the same. And I consider the book so unusual in its worth to the service, not only for the National Guard but for the regulars as well, I believe it would be well to put this review in your JOURNAL at your earliest opportunity.

Very respectfully,

HERBERT A. WHITE,
Captain Eleventh Cavalry,
Senior Instructor, Department of Law,
Army Staff College.

* * *

To show the object of the author in writing this book, I quote from his preface. Then I will give my ideas as to how well he has accomplished the object he set out to do.

* "THE LAW AND CUSTOMS OF RIOT DUTY." A Guide for National Guard Officers and Civil Authorities, with Commentaries on Federal Aid. By Byron L. Bargar, of the Columbus, Ohio, Bar, and Lieutenant Colonel Ohio National Guard, Retired. Published by the Author, Columbus, Ohio., Price, $3.00.

PREFACE TO THE WORK.

"The term riot duty, used generically, does not specifically include all forms of domestic disturbances and rebellion in which the aid of troops may be required; but this term is chosen as a title for bibliographical reasons, although the scope of the following pages might permit of a more comprehensive title.

"It is probably true that riot service is the most distasteful duty which soldiers are called upon to perform. Furthermore, it is unfortunate that the first military force called on for this duty is composed of what may be termed amateur soldiers. They have neither the *sang froid* of the regular, which comes with familiarity of service, nor the independence of action, which comes from the fact that regulars do not take orders from civil officers. These cumulative disabilities have given citizens a dread of riot duty; and this fact is responsible for a part of the difficulty found in keeping the ranks of the National Guard filled with good men.

"The militiamen feel the responsibility of their position as a reserve power of the state. But they are not always taught how to discharge this responsibility. They acquire a distaste for riot duty because they become confused as to the legal requirements of that duty. They have not the slightest fear of a mob. They dread the *law*. They fear the law because they are uncertain of its protection; because to them it is vague, illy defined and, gathered hastily from many sources, is inconsistent and contradictory.

"An attempt is made in the following pages to give to the Guardsmen and civil authorities a convenient guide to the rules of law which govern riot duty. Recommendations are freely made as to administrative details necessary to keep organized militia in a proper state of preparedness; as to forms of orders, proclamations and reports; with suggestions as to tactical employment of troops.

"The various details of riot duty are treated, where possible, in the order in which the work is performed, and the legal phase of each situation is stated in connection

therewith, so that the student can readily determine his status at each stage of the service. Military terms are used where the context admits.

"The principal danger in the application of legal rules to the duties required in riot and insurrection is that these rules may be applied, either by a civil or military officer, to the wrong conditions. Illustrations of this are occasionally furnished in the text. Bearing this in mind, and in order that the rules could be concisely stated, this work is so arranged that each legal rule applies to the situation indicated by the chapter and section titles. In reading any rule, a glance at the chapter and section headings enables the reader to grasp an outline of the situation under which the rule applies."

Such is the preface to Colonel Bargar's work. I certainly do not hold with George Barnard Shaw that a wise man will first read a book and afterwards the preface. Even though we can in many instances, as in this, determine from the title of a book what field that book is intended to cover, yet from the preface we can more readily determine how important the author considers his subject and the several parts thereof, and so form some idea of what the book should contain before we start on its reading. Moreover, in picking up a law book one is really more concerned with the preface than he would be with any other kind of book.

When we read a novel, or a history, a book of travels, or even a military treatise, we unconsciously gain a more or less definite idea of the personality of the author. There are few of us that have not formed a definite conclusion, usually right, when we lay down a new book just finished, as to whether the author was man or woman, no matter what the name was on the title page. So, too, in books in general; we grasp the author's age, temperament, religious, social and political convictions. As one ably stated, that reader would be lacking in perspicuity who could lay down Tom Watson's "Life of Napoleon" without the conviction that the author, in spite of his laudations of Napoleon the Emperor, is a man of ultra-democratic ideas. Now all this is different with law

books. The writer is so hedged about on every side there is little chance for his personality to find expression in his work. His course is marked out by precedent. His reasoning must be the reasoning of the law. His language must be the language of the law. The result is that the typical law book is severe, unimpassioned reasoning, and it lacks that personal interest which should be possessed by most other books."

It is only in the preface of a law book that a writer may be himself. It is in the preface of a law book that the personality of the author may be revealed.

And so it is that I have given above the entire preface of Colonel Bargar's work. All that I have said above from a careful thinker on law books does not apply in full to Colonel Bargar's book. For he has handled his subject in such a way that personality is marked all over it, and he has also handled this heretofore seldom touched on subject as a new subject. Moreover, he uses little legal phraseology, but makes simple, plainforward statements that are not susceptible of more than one meaning. Consequently there is much more of the author in his work than in the usual law book. But nevertheless it is well to carefully go over his preface, and so I call attention to it before proceeding with my opinion as to how well he has accomplished what he set out to do.

Colonel Barger has a book of 263 pages, divided into twenty-three chapters, and the chapters well divided into numbered sections. This gives ease to the eye and mind in studying the work. Its typographical arrangement has much to recommend it, as I will mention later. I will now take up these chapters seriatim, merely mentioning some and dwelling at longer length on those that are of peculiar interest to the regular army.

CHAPTER ONE.

The National Guard is organized militia. Of course since the Dick Act there could be no question as to this matter, but a clear, concise statement, such as Colonel Bargar gives us, is good to see in print.

The author describes military law, martial law and military government, giving the usual distinctions. Colonel Barger makes martial law all powerful, as it needs must be if it is to accomplish its purpose. That purpose I take to be as speedy a restoration of the civil authority as possible. A further discussion of this subject will be found in the remarks on Chapters 17–21.

The distinction the author gives between martial law and military government is the time honored one that has existed since the days of the minority report of *ex parte* Milligan. But as he points out the really main difference in the liability of officers acting under disturbed conditions, he makes the duties of officers plain, where it might not be so plain should they only remember the territorial difference so commonly given.

A very short discussion is given of the Dick law, and we wish more time had been given to that subject. More concern is felt by our military leaders upon this subject of the second line than upon most all other subjects combined. But as far as the Dick law is concerned, what has our militia, our State citizen soldiery, done as to meeting the requirements of that law? Of course I fully realize the struggles of the militiaman. No one can more readily understand the situation of the militia, and no one is more ready to give it credit for meeting the situation than is the regular army. And the regular who does not stand ready with the helping hand at every turn is a poor soldier and a poor citizen. Like the more experienced brother, we should always be ready with help and counsel when needed, and let us render, then, help and counsel in a gentlemanly manner and not with sarcastic jibes, that lingering long in a smarting memory produce internecine troubles when united action is the sole hope of the nation. I look with pleasure upon the growing familiarity between the regulars and militia. The gulf between the professional and the amateur is lessening, with the result that the expenditure of the nation's money in joint maneuvers will be utilized to the utmost, and none of it whatever frittered away in lost opportunity.

With this growing sentiment we may hope soon to see the hopes impliedly expressed in the Dick law become accomplished fact. And when this is accomplished we shall find ourselves in a better state of preparedness for trouble than at any time in the history of the Republic.

CHAPTER TWO,

on preparation, is full of sound common sense. This of course means preparing for riot duty. The author shows how militiamen can be quickly assembled. The remarks about drill and training are particularly apropos, and a little hint is given that would be well for our regulars to take to heart, that of training horses to such a degree as not to be stampeded by fireworks.

CHAPTER THREE

deals with the constitutional use of troops in time of insurrection, rebellion, and riot. Definitions of these three words are given, and these definitions are followed by discussion. The discussion falls into two parts—first, the State call for troops; second, the power of the Federal government. The latter is simply stated by quoting Sections 5297–5300 Revised Statutes. This chapter is replete with foot notes referring to cases that are old acquaintances of the martial law student. The whole chapter shows that a legal knowledge has directed the pen of the author. And a foot note at the end of the chapter calls attention to the publication by the War Department, "Federal Aid in Domestic Disturbances," which gives a history of the exercise of martial law powers, a history with which all regular officers and all higher officers of the National Guard should be well acquainted.

CHAPTER FOUR

deals with the expediency and desirability of assembling before receipt of orders. It seems sufficient cautionary remarks are introduced into this chapter to cause any officer of ordinary intelligence to act in such a manner that he will

not only assure himself against heavy worry, but will not be beset with little worries, like the cost of meals, and whether the State stands for these or whether he does or the individual men, things little in themselves in time of stress, but yet it is frequently these little worries over administration that encumber an organization and make officers disgruntled and consequently not up to their highest standard.

CHAPTER FIVE

treats of the constitutional question of who may call out the troops. While in general this is not so important as the methods to be used after once being called out, yet a thorough knowledge of this subject is of importance to the supreme commander of the unit called out, and inasmuch as in some States the power of calling out troops is vested in minor civil officials, this knowledge becomes of more importance to the smaller commanders than with us in the regular army. This chapter, with the one following which treats of orders and reports and the methods to be used in giving orders, is of much importance, and should be carefully studied by all who may ever have any of the disagreeable work of riot duty. Practical common sense is the main features of these two chapters, and were it not for the fact that the advice is so seldom followed it would almost seem that such cautionary directions as to the little memorandum book, which will serve many a time for protection, were unnecessary.

CHAPTER SEVEN,

on the conduct of officers, should be read and taken to heart by all officers, regular and militia alike. It is so strong in its simple straightforward way of putting matters before the reader that I believe I will be pardoned if I take enough space even in a simple review for the following:

"*Personal Conduct.*—As heretofore stated no officer on duty during riot, especially during the first stage, should either take a drink or enter a saloon. The weather may be such as to render a stimulant beneficial, the exhausted condition of the officer may demand a quick recuperative, but the consequences of taking 'one little drink' or even entering a saloon have been, under such circumstances, extremely grave. Once upon a time a colonel of the National Guard walked quietly into a saloon and took a drink. He really needed it, as he had been on his feet for practically twenty-four hours. Unfortunately, within two hours a mob charged the court house which was being guarded by this officer's regiment. After repeated warnings he gave the command to fire, and several of the mob were killed and wounded. This commanding officer was afterwards indicted by the grand jury, which next sat in that court house, for manslaughter. The defendant, thus indicted, was compelled to employ the best legal talent available, secure a change of venue to an adjoining county, and sit six weeks as a defendant in the trial of a murder case. During the production of the testimony it developed that the friends of those who had been killed and wounded in the court house fight had persistently circulated the story that the officer who gave the command to fire was drunk at the time. The defense of this case was so expensive as to nearly ruin the officer, in spite of the fact that the State afterwards reimbursed him in the sum of about twenty-five hundred dollars. Meanwhile damage suits, with claims aggregating seventy or eighty thousand dollars, were prepared by the friends of those killed and injured in the riot. In all of these suits the same commanding officer would have been defendant had he not gone to considerable trouble to escape service and otherwise avoid having the cases tried in the county where the troops had operated. Thus the fact that this officer was seen to publicly take one drink in a saloon was seized upon by a score or more of malicious persons, and, as the story was bruited about, the one drink increased in number like the three black cats. An infinite amount of trouble was caused an unfortunate commander, who had in fact, conducted himself throughout the riot with perfect propriety and bravery. This is not a fable. The story is true in every detail."

CHAPTER EIGHT

contains tactical and administrative advice as to the movement of troops, matters of every day knowledge of the regular, or should be at least, but of much good counsel to the militiaman. This chapter is mainly concerned in the movements that place the troops in the theater of disturbed conditions.

Chapters Nine, Ten and Eleven will be considered later in connection with Chapters Seventeen to Twenty-one.

CHAPTER TWELVE

is devoted to the subjects of proclamations. Examples of both Federal and State proclamations are given, and one State proclamation is given in outline. Attention is called to R. S. 5300, which requires the President to issue a proclamation. Many States require much the same procedure, but the author goes into this matter quite fully, and shows that a State may proceed, under necessity, in such manner as is required. These examples of proclamations make this work exceedingly valuable. The reader might know theoretically a great deal about this subject, and yet not be able always to do the very best thing. With such excellent examples before him as have been placed in print by the author, and thus made of easy access, the very ignorant will not go far amiss if they follow the examples. Colonel Bargar also describes the old reading of the "Riot Act" in England, and thus keeps the interest of the reader, and also describes how we really come to much the same end as did the old English law as to the forfeiture of estate.

CHAPTER THIRTEEN,

relating to the closing of saloons and other such matter, is handled in an exceedingly clever manner. Here, as elsewhere, the downright common sense of the author appeals to the reader, and the book were well worth while did it do nothing more than give hints as to general procedure in times of stress. But the great value, to my mind, of this book is the legal correctness of the points raised and the fact that

one acting in conformity to the propositions of Colonel Bargar will be very well armed for the legal aspects of his action that later are quite sure to arise.

CHAPTER FOURTEEN,

on the disposition of troops, is largely tactical and of course does not set out to give exactly what shall be done, but lays down some situations that have been successfully met. We quote the following from this paragraph to show the author's idea of being lenient: "Temporizing with a mob is usually an exhibition of weakness. It not only indicates weakness, but is injurious to the discipline of the troops. A vacillating commander cannot command obedience from his own force. How can he expect to control a mob?"

CHAPTER FIFTEEN,

on the subsistence of troops, is of value to the militiaman, and also in certain conditions to the regular. And a perusal of this chapter will make any officer wish to know his business. We may be quite sure of one thing, the officer who does not know his business will sooner or later come to grief, probably sooner. And this is as it should be, for it requires but little study, though much thought, to put one into condition to meet most of these ticklish situations with much credit. A careful and thoughtful reading of Colonel Bargar's book should keep officers well within the protection of the law, and at the same time, not only not decrease their initiative and efficiency, but greatly add thereto.

CHAPTER SIXTEEN.

This chapter treats of the tactical use of troops—a question that has always been more or less imperfectly understood and with less reason for such misunderstanding than many of the other question arising under this perplexing duty. Tactics, as the author points out, is the art of handling troops in the presence of the enemy. Being in the presence of the enemy means that the officer in command must be the judge of what tactics shall be employed. Certainly no one

else can be. If an order is received, such as, for instance, to clear a street, that street must be cleared. Just how the officer shall set about to clear that street rest, as to his tactical disposition, in his own judgment. The only question the law will ask in any event, will be, Were the means employed unnecessarily harsh? If the means employed were necessary there can be no more question. If it is necessary to kill, it makes little difference whether one kills with the saber, bayonet or bullet. The great question is, Is it necessary to kill? Anyone in this world may be sure, at least in our American world, that he cannot kill without justification or excuse, and there are few situations in which any man can be placed where he will not have to account for taking life to some court of his country, except in war in taking the life of an enemy in battle or skirmish engagements.

So really the tactics to be employed in mob work is a question of understanding the order, and then one of professional ability in accomplishing that order with the least destruction. This is a question largely of experience. And as experience in mob duty is not to be expected in America it is well to replace the lack of experience by careful study. And a study of this chapter is as likely to give one good and proper ideas as the study of many a more elaborate treatise, if we had the said treatises, which we have not.

We quote the following which we are glad to see in print:

"Section 188. Use of blank cartridges seems to be generally condemned. Some State statutes expressly forbid their use in riot duty. It is plain that if mobs are taught to expect the fire to be harmless, the moral effect is not only lost, but, when ball cartridges are finally used, the rioters nurse an additional hate, reasoning that they have been betrayed."

And to my mind the use of the bayonet is exceptional. I quote the following from a lecture delivered before the Army Service Schools by the commandant, Major General Charles B. Hall:

"Troops should never be brought into a hand to hand conflict with a mob if it can be possibly avoided. I do not believe in using the bayonet unless the troops very largely outnumber the rioters. In almost all cases the mob will outnumber the troops ten to one, and if allowed to come so close as to admit of the bayonet being used, in the 'mix-up' to use an expressive sporting term, the chances are that the troops may be crushed and disarmed by the weight of numbers. Yet paragraph 488 Army Regulations says, 'as a general rule the bayonet alone should be used against mixed crowds in the first stages of revolt.'"

Chapter Seventeen on martial law, Chapter Eighteen on *habeas corpus*, Chapter Nineteen on taking private property, Chapter Twenty on liability of officers under civil law, and Chapter Twenty-one on liability of enlisted men under civil law, are all more or less connected and deal largely with the legal phases of the entire subject.

The author's definition of martial law is given in Chapter One as follows: "Martial law is the law enforced by a military commander over the civilians in his district, whenever the civil authorities are unable to maintain peace and order or enforce the laws."

In Chapter Seventeen he goes into this subject quite extensively, and has as clear an exposition of the subject of martial law as I have ever seen. He works on the definition above given, and then discusses martial law from the standpoints where the civil authorities are absolutely powerless, and where the military force are but helpers in restoring the peace. One of these he calls absolute martial law, the other coöperative martial law. He also introduces another term, "qualified martial law." As to these in their order.

Of course little need be said about absolute martial law. As pointed out by the author, shortly and tersely, "Absolute martial law exists when it is the only law prevalent in a certain district, and the will of the commander is well nigh absolute. His military commissions are the only courts which can be found where the rights of civilians may be enforced and their wrongs redressed. All civil courts have

absolutely ceased to exercise their functions. The military commander must organize a provisional government for the civilians in the district. He must detail officers or civilians to perform the various governmental functions. A military district commander is necessarily, under these circumstances, a dictator. But he may be subjected to punishment as soon as his reign is over. During his incumbency, however, he is responsible for the good government of his district. Governing the district is a duty which he cannot shirk."

Coöperative Martial Law.—The author gives this two standpoints. First: Where the Federal troops are exercising martial law less than absolute. He calls this coöperative and not qualified martial law, for the Federal officers take no orders from the civil authorities, whereby they differ from officers of State troops, at least in some States. This is a good term, coöperative martial law, and the author is to be congratulated in setting it out on what will unquestionably be a career of usefulness. Heretofore writers discussing this subject have headed their discussion, "In Aid of the Civil." This was a term I used in preparing a chapter on this subject of riot duty for Captain Moss's Manual. Of course what Colonel Bargar says is true, that regulars do not take orders from the civil, and yet we know from the myriad of instances that can range from absolute martial law down to where there is nothing more than the mere presence of troops, as recently at Goldfields, that in the greater number of instances the regulars merely act as an aid to the civil authorities, leaving most and if possible, all civil officials to perform their wonted duties, merely removing obstruction where said obstruction can be removed in no other way than by the Federal troops. I think the duty, under these conditions, of the regular, is to act on the *advice* of the civil authorities, but act in our own tactical way. In most all instances where this duty arises with the regular troops, the soldier will not find it necessary to take full charge. So there will be infinite numbers of conditions where there may be clashing of the military and civil if good sense and judgment are not shown.

Now as far as the regular is concerned, he is interested in these two phases alone, where there is absolute rule, and where he acts only in aid of the civil. The distinction can easily be grasped by merely remembering that in absolute rule the commanding officer of the military is also the governor. He alone must govern. He cannot shirk the responsibility. He has his two fold duty, Soldier and Governor. When acting merely in aid of the civil he is no governor, but is merely a person acting discretionally in the performance of a ministerial duty, if such a paradox can be grasped. As Napier puts it, "the soldier is simply the nurse, giving the dose prescribed by the physician, the civil. When the soldier turns physician and prescribes the dose he becomes the governor, and is then exercising absolute martial law. He may have all sorts of consulting physicians at this stage if he wishes, but they are advisers merely. He, himself, is *it*.

Now this matter is easily understood; but for the unfortunate militiaman there is another phase. In many States, not only may the Chief Executive of the State call for the militia, but also subordinate officials may do so, such as the sheriff of the county, or the mayor of a municipality. And when so called out the militia practically take orders from these civil officials. As I understand Colonel Bargar, the exercise of military force under these conditions is called qualified martial law, though this is not the only instance of this phase. But to make the idea of the author clear, and also to give others their own construction of his work, I quote in full sections 193 and 194:

"193. Coöperative martial law is exercised by Federal military officers, under orders therefor. The degree of martial law, less than absolute, which Federal military officers may exercise, can hardly be called qualified martial law, because civil officers cannot interfere with or give orders to Federal military officers.

"Coöperative martial law may also be applied by State troops in State service wherever certain civil authorities can be induced to properly perform their duties in a military

district. On these occasions the military commander will supplement whatever civil law is being enforced with that degree of martial law which is necessary to completely round out the governmental functions.

"Under these circumstances the laws are applied by the military commander in the same order as in absolute martial law. But written orders and proclamations of the commander will be so framed as to permit of certain civil officers performing their functions.

"194. Qualified martial law is commonly exercised, by order of the governor, where troops are quelling a riot or mob, when the civil authorities are powerless, indifferent or secretly in sympathy with the mob. These troops may be nominally under orders of the local civil authorities or may be acting directly under orders of the governor in preventing a threatened violation of law on an occasion similar to that indicated in section thirty-six.

"This degree of martial law also arises where troops have been ordered to aid the civil authorities and have later, by proper order, been compelled to act in opposition to the order of certain authorities. The martial law here exercised may be increased in degree, but is ordinarily confined to one or two acts of arbitrary authority.

"Qualified martial law may also be exercised by the military commander in carrying out specific orders of the civil authorities."

I am not sure that dividing the phases of martial law into these three divisions had added to the clearness of the subject, certainly not as far as the regular is concerned. But owing to State statutes, with which the regular must be more or less unfamiliar, it is probable that the division accomplishes its purpose better than could be done in any other manner of division. Certainly whether we fully agree with the Colonel in this or not, he has made the matter plainer than any other writer, and there can be no excuse now for officers not having a clear conception of the duties arising under these exceptional circumstances.

The subject of *habeas corpus* is clearly set forth, as well as the chapters on the liability of officers and enlisted men. In this latter subject about all that is necessary to do in this review is to mention some of the cases in his foot notes to see that the author has exhausted the study of the cases. We find among others, such as the following: Appeal of Hartranft; State of La. ex rel Warmouth, Governor; Luther v. Borden; Commonwealth v. Shortall; Mitchell v. Harmony; Drury v. Lewis, Jail Warden. This last is the case of Lieutenant Drury which will be found in 200 U. S. 1. These are of course simply referred to by the author, but the reference, as stated above, shows a legal knowledge of his subject.

CHAPTER TWENTY-TWO

deals with the subject of "Militia in United States Service." Of course when called into service of the Federal government State troops come under Federal law and are part of the army of the United States. In this connection it is well to remember the new law that has just been passed by Congress. This was the Dick-Steenerson Bill. It provides, in short, that the National Guard shall respond to the call of the President of the United States for service wherever and whenever needed for the term of the men's enlistment; shall be called without reorganization; shall receive half the allowance of ammunition issued to the regular army, and provides for a board of five active militia officers as an advisory board to the Secretary of War. These five have been appointed and are, Brigadier General James A. Drain; Adjutant General Oran Perry, Indiana; Adjutant General N. H. Henry, New York; Adjutant General C. R. Boardman, Wisconsin; and Adjutant General B. Graves, Alabama.

CHAPTER TWENTY-THREE

deals with the reports that should be made at the close of the duty.

All in all, Colonel Bargar has given us a book that is needed. And it is an excellent book. Not technical, but plain straightforward writing, meeting questions in such a

manner that even the most inexperienced can take the work and regulate his conduct by it without trouble. This book should be familiar to every regular officer, and we consider the action of the Indiana Guard as the correct one. I quote the following order:

STATE OF INDIANA,
ADJUTANT-GENERAL'S OFFICE,
INDIANAPOLIS, April 23, 1908.

GENERAL ORDERS
No 4.

I. There has been issued to the officers of the Indiana National Guard a book entitled "The Laws and Customs of Riot Duty," by Byron L. Bargar, Lieutenant Colonel, Ohio National Guard, which contains everything that one commanding or serving with troops need to know concerning local warfare to perform the duties required of him creditably and successfully.

II. Immediately on receipt of this order officers of the Indiana National Guard are directed to begin and complete a thorough study of this book, and examining boards are directed to require of the officers who present themselves for examination a high percentage in the knowledge of the matters of which it treats.

III. Company commanders are directed to hold schools of instruction, all enlisted men participating, at which special attention will be given Chapters 2, 4, 7, 8, 13, 14, 16 and 21. A practical demonstration of Chapter 14 should be made on the streets as many as six times a year, or as many more as will be necessary to thoroughly familiarize the enlisted men with the tactical work that is expected of them.

By order of the Governor,

ORAN PERRY,
Adjutant-General.

This work is a great addition to the subject of martial law. While not intended to be such a treatise as Birkhimer's, yet it may possibly accomplish as much good. The thoughtful reader can not go through Birkhimer without being struck with the mass of information that has been collected by that author And thoughtful men will always be ready to pay Birkhimer the compliment that he has accomplished more along his line than has any other writer. But Birkhimer's style is not such as to render it attractive to the average reader. It is not easy to read. Neither is the present edition a success from a typographical standpoint. There is little rest in Birkhimer's chapters. There are no subdivisions that make for easy reading. All this has been obviated in Colonel Bargar's work. It is easily read. It is interesting. And it is instructive in the most important

factor, What shall I do, *actually do*, when confronted with such situations? And in closing I wish to call attention to his greatest advice of all:

"The surest method to avoid liability by officers commanding troops in home service, is to provide, before issuing any order that may be questioned in the future, two things:

"*First.* That proof exists which shows the officer to be justified in giving the order.

"*Second.* That this proof will be available if it is ever needed."

If an officer will keep cool, keep his head, so that he knows not only what he is doing but knows all the surroundings, so that he can at subsequent time recall them to the extent that he may produce evidence thereto, if necessary taking the antecedent precautions to have men with him who can testify truthfully as to conditions, that officer will have little to fear in the aftermath. And I am sure no officer will lay down Bargar's book after reading it without being mighty well prepared on his legal rights and duties, and also be equipped with a valuable adjunct in always being ready with material facts to support his contentions.

Studies in Minor Tactics.*

The various studies in minor tactics contained in this volume were written by instructors in the Department of Military Art, Army Service Schools, Fort Leavenworth, Kansas. In mimeographed form these studies have been used in the School of the Line for the past year, but it is only now, however, that they have been put in such form as to be available for the use of officers in general.

*"STUDIES IN MINOR TACTICS." Prepared by the Department of Military Art at the Army Staff College and Army School of the Line. Price, fifty cents. The Fort Leavenworth maps (scale 3 inches and 4 inches to the mile) used with these studies, cost twenty-five and ten cents respectively. Officers of the regular service and National Guard can procure the book and maps from the Secretary of the Schools.

These studies were carefully revised before publication in book form. The book itself contains 237 pages, printed in good clear type, contains several lithographs explanatory of the text, is neatly bound in blue cloth and bears the official seal of the Service Schools.

The preface states that these studies were prepared "to assist officers in the study of minor tactics and in the solution of problems involving only small forces." It is also stated that in these studies "an endeavor has been made not only to set forth certain principles of minor tactics, but also to enable the reader to form for himself a mental picture of the manner in which troops might well be handled in case the conditions assumed in the various studies actually existed in the field."

The studies deal with subjects varying from the conduct of small infantry and cavalry patrols up to the tactical handling of commands as large as a regiment of cavalry or a battalion of infantry (with or without cavalry attached). The complete list of the contents is as follows: "An Infantry Patrol;" "A Cavalry Patrol;" "Outpost—Infantry;" "Outpost—Infantry and Cavalry;" "An Advance Guard—Infantry;" "An Advance Guard—Infantry and Cavalry;" "A Rear Guard—Infantry;" "A Rear Guard—Infantry and Cavalry;" "Attack Over Open Ground by Infantry;" "Forcing a Defile;" "Defense of a Position;" "Independent Cavalry;" "Cavalry Against Cavalry;" "Cavalry Against Infantry;" "March and Defense of a Convoy;" "Attack of a Convoy;" "Artillery With Small Commands."

Although most of these studies follow the general style of other tactical studies, nevertheless the idea of presenting a mental picture of the troops on the ground and their tactical handling is in them more fully carried out than in Griepenkerl's "Applied Tactics" and other similar works. A "situation" is assumed as the introduction to each study; the task of the commander is then outlined and the conduct of the force concerned (whether it be a battalion acting as rear guard to a larger force, a cavalry command operating independently, a small patrol, etc.) is then followed out in detail. For instance, the "situation" may state that a battalion of

infantry is on the march from one point to another, when certain information is received regarding the enemy that influences the commander's plans. The commander may decide to camp and establish outposts, to retreat, advance or fight. In any case, whatever he does is followed out in detail, the orders issued by him are quoted verbatim, the dispositions of his troops are shown and reasons therefor are given. The text and maps supply the place of the troops and ground, and every event of tactical importance is described in detail and in natural sequence.

The value of these studies to regular officers has been shown in the School of the Line, and it is believed that they will be of great value to officers of the National Guard, affording as they do numerous examples of the modern methods of issuing field orders—both written and verbal, besides illustrating the tactical handling of troops in the field. These studies fill in the gap between Wagner's "Security and Information" and Griepenkerl's "Applied Tactics," and have been carefully revised and brought up to date.

A. B. C.

Landscape Sketching for Military Purposes.* This book treats briefly of the following subjects: The equipment required for sketching; the conventional signs used; the essential points necessary in producing a panoramic sketch; the advisability and methods of shading; perspective as applied to panoramic sketching with the means used to represent slopes and topographic features; the character of practice necessary for more ambitious students, and the methods of drawing the landscape sketches from maps and the reverse.

The style of the writer is clear and popular. He handles his subject in such manner as to be readily understood, and his book will be useful to any one desiring to acquire a knowledge of landscape sketching.

A. B. C.

* "Landscape Sketching for Military Purposes." By Captain A. F. U. Green, R. G. A. Hugh Rees, Ltd., London, 1908. Price 4s. 6d., net.

Notes on Magnetism and Electricity.*

The author of this book makes no claim to entering the realm of electrical science beyond the elementary stage. He introduces the reader in a simple, concise and sequential manner to the elementary principles and practice of magnetism and electricity.

To one not familiar with the subject, the small volume of 110 pages is readable, interesting and instructive.

To one familiar with the science of electricity, this work furnishes a useful and condensed reference book, from which the various sub-subjects contained therein may be amplified at pleasure. X. Y. Z.

Catechism of Outpost Duty.†

Our officers are so familiar with Wagner's works that it is only necessary to state that there is nothing new in this, the latest edition of his catechism. We quote from the reviser's preface, and inasmuch as there is no departure from the style of the previous edition of this work, nothing further need be said as to this recent production.

"In this revision every attempt has been made to preserve as far as possible the thought and language of the author, the late Colonel Arthur L. Wagner, General Staff United States army, and only such changes have been introduced as have been found necessary to make the text conform to the Field Service Regulations, United States army, 1904, and to other authorized publications treating of the subject of security and information. From the Field Service Regulations copious extracts have been made, in many instances verbatim. The sole idea in the revision has been to bring the text up to date, so that it might be used by officers of the army and of the militia as a brief synopsis of

*"NOTES ON MAGNETISM AND ELECTRICITY, WITH AN INTRODUCTION TO TELEPHONY AND TELEGRAPHY." By J. S. Iredill, Army Service Corps. Gale & Polden, No. 2 Amen Corner, Paternoster Row, London. Price 3s. 6d., net.

†"CATECHISM OF OUTPOST DUTY." Wagner. Franklin Hudson Co., Kansas City, Mo. Price 50 cents.

the principles of security and information. A change in the order in which the subjects are treated has also been made to conform to that followed in the service schools of the United States army. It is believed that the present arrangement will admit of progressive study, from the elements of reconnaissance to the more complex work of providing for the security of large commands in the field." X. Y. Z.

Active Service Pocket Book.*

Lieutenant Stewart has largely extended his original work in this last edition of the "Service Pocket Book." In our issue of October, 1906, we gave a short review of the "Service Pocket Book," and we are very much chagrined at the seeming lack of attention paid to our remarks. We then stated that few military books dealt with such a range of subjects, and we stated that the author was to be congratulated on doing as well as he did. This was not intended as such a compliment that it would conduce to other efforts in the same direction. Yet we find Lieutenant Stewart, in his third edition, adding several hundred pages to the "Pocket Book," making it a volume of 940 pages. (The original contained 425 pages.) Still, due to thin paper, it is not a bulky volume. We feel quite assured, however, that the Lieutenant never read our well intended remarks, or if he did, he took it for granted we did not know what we were talking about. And in one sense, the latter idea is on the right track, for it is hard for an American reviewer to take an English professional army work and say that it is or is not a good thing, for we know so little in general about the English service conditions. But of course our remarks are always intended eventually to say what a similar book would mean to us. With our field service regulations we believe we have a sufficient pocket book for the American army.

*"ACTIVE SERVICE POCKET BOOK." By Bertrand Stewart, Second Lieutenant West Kent (Queen's Own) Imperial Yoemanry. Printed by William Clowes & Sons, Ltd., 23 Cockspur St. S. W., London. Third edition. Price, 4s. 6d.

Still there is much practical knowledge in the "Service Pocket Book." Many of the added chapters are really better than any of the old ones. The chapter on orders is most excellent, being a number of model orders for field work. We are glad that this subject of orders has now received attention in our service. Another chapter on supplying ammunition is good, though it is not as complete as it might be. This is a subject that should receive immediate attention from the General Staff, if not already at work on the subject. And this subject should be incorporated into the Field Service Regulations, for there is no subject of more importance and few of as much.

American officers can receive much valuable information from the English Active Service Pocket Book; and its extension, our previous ideas about its large field to the contrary, has made it of enough moment to us to warrant the price.

Report of the Santiago Campaign.*

This book was received just as the last of this number of the JOURNAL was going to press, and therefore it is impossible to give an extended notice of it at this time. A complete and critical review of the work by Captain Rhodes will appear in our next number.

The following is an extract from the preface of the book:

"No introduction of Colonel Wagner is necessary. As an author of known reputation on military subjects, and as one of the pioneers in promoting professional study in the army, his name is not only well known in military circles, but to the general public as well. The report herein printed was sent us, with other papers, by his widow for publication, and, though ten years have elapsed since the stirring events described in the report transpired, we take great pleasure in publishing it, not only because of our high regard and friendship for Colonel Wagner, but because it seems to us that the publication will be of great benefit to the army.

*"REPORT OF THE SANTIAGO CAMPAIGN." By Arthur L. Wagner, Lieutenant Colonel U. S. army, Assistant Adjutant General. Franklin Hudson Publishing Co., Kansas City, Mo. Price, $1.00.

"The account begins with the mobilization of the troops at Tampa, follows the naval expedition over the seas to Cuba, describes the landing, the theater of operations, the battles of Las Guasimas, El Caney, and San Juan, and the subsequent siege and surrender of the city.

"Throughout the report Colonel Wagner comments freely upon the situation from the standpoint of a military critic, and in conclusion gives his views upon various features of the campaign." EDITOR.

The Truth About Port Arthur.*

"The Truth About Port Arthur" was published in Russia last year. M. Nojine, the author, by whose permission this abridged translation has been made, was the accredited Russian war correspondent in Port Arthur and as such went through the greater part of the siege The book is one long indictment of the then *régime* in Russia, and of some of the officials connected with the defense of Port Arthur. It is stated in the preface that by the time that the English translation was completed, in the autumn of 1907, it was announced that some of the senior officers who conducted the defense were to be tried by court martial. In fact, from the copy of the official indictment then published, it seemed as if it might almost have been framed upon materials furnished by M. Nojine's book. It was, therefore, decided to delay publication whilst matters were *sub judice*. Amongst much in the work which gives food for thought there are two or three matters described by the author which are truly extraordinary. For instance it is difficult to believe that when, after so much threatening, the storm eventually burst and war broke out, Port Arthur was so far from being ready that on the 14th of January, 1904, only eight guns of the allotted armament were mounted on the land defenses. It is also remarkable that even before the place was finally cut off by complete investment in July,

*"THE TRUTH ABOUT PORT ARTHUR." By E. K. Nojine. Translated and edited by Captain A. B. Lindsay, Indian Army, and Major E. D. Swinton, D. S. O., R. E. John Murray, London, 1908. Price, 15s.

1904, the troops had to be put on short rations. The author remarks on the extraordinary calmness and endurance of the Russian gunners during their first artillery battle. There was no exhibition of fear for their lives at all visible. It was not that they did not realize the danger and had not yet seen any wounded. And so they behaved up to the end of the siege—like men. During the month of October, 1904, the conditions in the besieged fortress—the wearing, trying uncertainty, the want of confidence, and the constant, unavoidable danger began to tell. The younger men lost their nerve and suicides commenced. On the 15th December, 1904, Major General Kondratenko was killed. The night was unusually wild. He and other officers were in the casemate of Chi-kuan-shan Fort, when near 9 o'clock the noise of an approaching shell was heard. Then an 11-inch shell burst in the officers' compartment. "All was confusion, dust, smoke, noise of falling concrete, stones and splinters of steel, cracking of bursting grenades, cries, the stench of blood, the suffocating gas of high explosives. * * * In the corner where Kondratenko, Raschevsky, Senkevitch, Zedgenidsey and Naumenko had just been sitting at the table pouring over the map, a bluish flame flickered for a moment over a heap of bodies half buried in *débris*. All was still, save for the groans of Lieutenant Kraiko (one of whose legs was torn off) and of Potapoff—buried under the ruins. Under this heap of rubbish the others lay dead, killed while in the execution of their duty. Kondratenko had perished, but wherever Russian is spoken his name will ever be synonymous with duty, unselfishness, bravery and honor." Zedgenidsey was one of the most distinguished engineer officers in Port Arthur. The author is not sparing of censure and is distinctly outspoken. His intention is to show that the surrender of the fortress before its defensive resources were exhausted was brought about by cowardice, incapacity, favoritism, and the pusillanimity of the officers responsible for its defense.—*From Broad Arrow.*

Elements of Hippology.*

Captain Marshal's second edition is from the Hudson Press, Kansas City, Mo. We are sorry the paper used in the edition was not better. As a typographical success the book is not up to the first edition. Otherwise the edition is commendable.

The author has added much of interest and also much of importance. Of course one should never dismiss from the mind that this is a book for cadets, and not an extended treatise on the horse nor on horsemastership. It is intended to comprise the matter that can be absorbed by the cadets at the Military Academy in some ten or twelve lessons, and we must say we believe it fits its purpose admirably. Especially we are pleased at the extension of the first chapter. The first chapter in the first edition was full of general definitions. This has been so extended in the new edition by a discussion of different types and different breeds, and a description of the three important strains of American horses, the American standard trotter, the Kentucky saddle horse, and the Morgan, that a young man will find himself intensely interested in the first ten pages of the book, and will determine to learn more about this great subject.

Captain Marshal was thoughtful enough to incorporate into his text the rules governing the pedigrees of standard-bred horses, and also the rules for entry in the American Saddle-horse Register. These matters are of such interest to young officers that it is well to have these rules where the young men can refer to them. These rules are followed by a talk on the Morgan horse, the wonder of horse history, we might easily say.

The author has followed the style of his first edition, treating of sections or parts of the horse in entirety before going on to another section or part. We do not know that we are fully in approval of this method, though we see little to condemn in such treatment. It possibly is not worth the while to depart from the established mode of procedure, but the trial shows originality and thought.

*"Elements of Hippology." By Captain F. C. Marshal, Fifteenth Cavalry. Second edition. Price, $1.25. The Hudson Press, Kansas City, Mo.

Chapter Two, "Age as Determined by Teeth," remains almost as in the first edition, but here is where we object to the poor paper used by the publisher. The half-tones have not taken hold as they would on better paper, and so the cuts are not so clear and plain as in the edition from the West Point Press. Still we must admit that many of the cuts in this chapter would at best be poor, as they are reproductions of actual photographs of a horse's mouth, and it is mighty hard business to get photographs of a horse, let alone those portions of the mouth that are necessary to illustrate the tables of the teeth.

The chapter on "Bits" has been somewhat extended by the incorporation of a few pages from Fillis. We know of no better method of awakening interest in this subject, the great subject of importance to horsemen. Every officer in the mounted service should be required to own a copy of Fillis' book and be compelled to read it about twice a month.

The plates are well chosen to illustrate the different parts of the horse, and the portions taken from the Department of Agriculture's work on "Diseases of the Horse" are well selected. The "Foot and its Diseases" are well handled, and while the work is of course not a treatise on horseshoeing, such as the little work from the Riley School, yet it well fulfills its mission.

We are glad to see this subject given some attention at the Point. When we pick up any foreign Field Service Regulations and see the amount of attention paid to horsemanship, every time we come to any work by a staff, we see the need of a knowledge of horses and horsemanship among officers of every branch of our service. And it would be money well spent by our government should it give to every dismounted officer the forage necessary to support two horses, if he is willing and energetic enough to buy them.

X. Y. Z.

Weapons.* This is a small book of fifty-four pages, gotten up in an attractive form, which is of historical interest. It has eleven fine plates illustrating over two hundred hand weapons, and each is fully described and its history given in the text. The book is divided into four chapters, the first three of which are devoted to weapons for stunning, for cutting and for thrusting, respectively; the fourth chapter includes a description of miscellaneous arms not capable of classification.

The illustrations are made mainly from the fine collection of this class of weapons, gathered from all over the world, to be found in the Royal Service Museum at Whitehall.

E. B. F.

Reconnaissance in the Russo-Japanese War.† This is a book of 147 pages on the important subject of reconnaissance, the author exemplifying his ideas on that subject by descriptions of how this work was done in the Russo-Japanese War.

The book contains twelve chapters, including an introduction, and is of value to all officers, commanders as well as subordinates, as it calls attention to the difficulties of modern reconnaissance.

In the introduction a brief statement is given of the use of independent cavalry on reconnaissance and of the cavalry (divisional) attached to infantry units. At the beginning of a compaign the chief duty of independent cavalry is to find the *enemy's main body*. This is called by the writer "strategical reconnaissance." For this work cavalry must be strong. If insufficient in numbers (the case with the Japanese) a greater reliance must be placed on spies and other means of information, the cavalry being tied, as it were, to the infantry, reconnoitering only short distances in advance, the infantry

*"Weapons." A brief discourse on hand-weapons, other than fire-arms. By B. E. Sargeaunt. Hugh Rees, Ltd., 119 Pall Mall S. W., London, 1908. Price 2s. 6d., net.

†"Reconnaissance in the Russo-Japanese War" By Asiaticus. Translated from the German, by Lieutenant J. Montgomery, Third Hussars. Rees, London; 4 shillings.

acting as support. The results obtained by the Japanese indicate that when the cavalry is weak or the country rough and broken, the best results may be obtained by using reconnoitering detachments composed of both infantry and cavalry. But much depends upon the ability of the cavalry to change from mounted to dismounted action and the reverse, and whether it is strengthened by machine guns. Cavalry on raids must be absolutely independent, and have enough artillery to overcome ordinary obstacles.

In the second chapter the author pays a tribute to the Japanese soldier, whose patriotism, respect for authority, and intelligence, enable him to become a soldier of the highest type.

The third chapter deals with information obtained by *espionage.*

Chapters IV, V, VI, VII and VIII are descriptions of how the Russians used their cavalry on reconnaissance.

Chapter IX describes the three weeks' work of the First Japanese Cavalry Brigade under General Akiyama. The author here draws a strong contrast between the lack of energy on the part of the Russians and the activity and enterprise of the Japanese.

Chapter X is a description of Mischtschenko's raid to Yingou.

Chapter XI is a summary in which the author briefly discusses cavalry in strategical and tactical reconnaissance, measures for protection and keeping touch with the enemy, dismounted and shock action, cavalry during battle, and raids.

The necessity for having good cavalry leaders is shown by quoting from Kuropatkin's instruction of August 14, 1904: "If our cavalry is under the command of a clever leader, then it will render good service. Up till now it has not obtained all the information which we expected.'

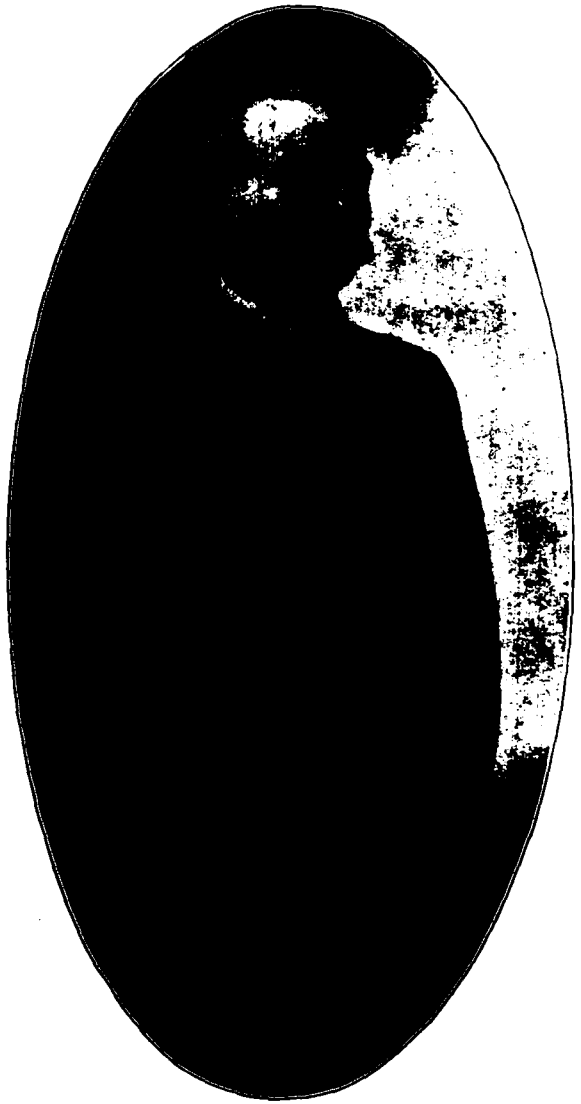
It is probable that the General would like to have said more, but policy forbade.

Chapter XII treats of new features applicable to a European war.

There are twelve good sketches explanatory of the operations, though the names of places are somewhat difficult to find.

The book is well printed, but the text is not always clear and the sketches are not properly placed to assist the reader. Throughout the author comments freely upon the work of both the Japanese and Russians, generally to the discredit of the latter.

Skill in reconnaissance can be acquired only by practice, and as the opportunities for practice are few, reconnaissance, so far as possible, should be made a part of all field exercises, giving the troops an opportunity to acquire some facility in this difficult work. D. H. BOUGHTON.



BRIGADIER GENERAL HENRY CARROLL,
UNITED STATES ARMY.
(Died February 12, 1908.)

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THE GERONIMO CAMPAIGN.

BY H. W. DALY, CHIEF PACKER, Q. M. DEPARTMENT, U. S. ARMY.

[*Concluded.*]

AFTER the General left, I felt that I should have spoken my mind to him regarding what I believed would be the outcome of his leaving at that time, and felt guilty for not having done so. But, as I have stated before, I knew that General Crook understood the Indian character as well as any man living and, although I foresaw the coming troubles with him away, I feared to suggest to him that it was not a proper time for him to leave this difficult job to his subordinates.

Had Captain Bourke told me, in the conference in his tent the night before the General left, what influences had been brought to bear on Geronimo to induce him to surrender, apart from those that had been offered Chihuahua, as I learned them afterwards, I could have told him and General Crook that he (Geronimo) would never reach Silver Springs with the command. There had been influences at work night and day among the Chiricahuas, and the real work had been done before the two conferences were held. Geronimo felt that the "hell" that he received from the General

should have been put on the shoulders of Chihuahua, while, to make matters worse, Chihuahua had received all the attention from the General down to the interpreters, and this caused him and Nachez to become jealous and envious. As a consequence, both took advantage of the opportunity offered by Tribolet's supply of whisky and mescal, and got gloriously drunk, and the Chiricahuas made the night hideous as before related.

There is no doubt but that Geronimo made up his mind that night to play a trick on General Crook that he would never forget, and to prove that Chihuahua was not the whole push.

Shortly after General Crook left for Fort Bowie, I received orders from Lieutenant Maus to break camp, and soon thereafter we pulled out on the trail for the line. Lieutenant Maus led with Chihuahua's band and I brought up the rear with the pack train and a few of our scouts.

When about four miles from the Cañon de los Embudos, one of the Chiricahuas came running up to me and said, "John Daisy Mantan (Mule Captain), Geronimo is very drunk; come and see him." I halted the train and followed the Chiricahua to where Geronimo lay on the ground in a drunken stupor. I shook him and tried to rouse him, and finally he rolled over and recognized me. He spoke to me in a mixture of Apache, Spanish and English, and said, "Natan, mescal heap no good; mucho sick; give me agua." I gave him a drink of water, and finally got him up and on his pony, and then he wanted a drink of whisky or mescal, which I, of course, refused to give him. I, however, promised him that I would give him a drink and a good supper when we got to camp, and told him he would feel all right then. His eyes were bloodshot and bulging, and generally he was a pitiable spectacle. I left him in care of the Chiricahua who had come for me, and told him to bring him on into camp where I would look him up.

As I had anticipated, the Chiricahuas refused to go any further that day when they reached our old camp at the cañon, and unsaddled there, thereby forcing Lieutenant Maus to encamp there also.

When the noon meal was ready, Lieutenant Maus, Geronimo, Nachez, Chihuahua and two or three others were invited to it, and I tried to make it pleasant for them, although I could see that there was trouble brewing. I had hustled around and gotten a drink of mescal for Geronimo as I had promised, and I had hopes that we would be able to get them on to Silver Springs the following day.

The next morning, March 30th, we broke camp bright and early with the Chiricahuas in the lead, and I bringing up the rear with the pack train as usual. About five miles out was Contrabandista Spring, where the man Tribolet had a small hut from which he supplied beef to the commands, and incidentally kept a supply of whisky, mescal and tobacco for any one, white or red, who had money. As the Chiricahuas seemed to have plenty of money, they never lacked for mescal from the day they first arrived at the Cañon de los Embudos, and as was to be expected, it was a continuous drunk from day to day.

About this time, Lieutenant J. B. Erwin, Fourth Cavalry,* who was attached to Captain Smith's troop and stationed at Silver Springs, took a detachment of his troop and proceeded to Tribolet's ranch and there seized all the mescal and other liquor that he could find and emptied it on the ground. Had this been done earlier, when the hostiles first came to the rendezvous, a world of trouble would have been saved.

As we were following the trail at a good gait, and having made such an early start, every one was in good spirits, and we had visions that we might finally get the renegades to Fort Bowie. However, we soon saw that the head of the column had halted, and one of the scouts came back and reported that the Chiricahuas were going into camp. This stop there, after we had traveled such a short distance, meant but one thing to me—that the Chiricahuas had gone as far towards Fort Bowie as they intended going.

I rode up to Lieutenant Maus, who told me that the Chiricahuas said they were tired and would go no further, and that they had gone into camp without any further ex-

*Now Major and Inspector General.

planation. He then ordered me to select a camp for the pack train.

Seeing that Geronimo had bivouacked his band on the rise of ground on the left of the trail, and that Chihuahua and his band had camped on the low ground at the foot of this incline and also on the left of the trail, I chose the ground on the open flat on the right of the trail and facing both of the hostile camps, thus being in a position where we could be free from annoyance and still be able to watch them.

Later, when discussing the situation with Lieutenant Maus, I expressed the opinion that Geronimo would leave camp before morning; but the Lieutenant seemed to think otherwise.

Soon after dark as the Lieutenant and several of us were sitting around the packer's camp-fire, a shot was fired over our heads by some one of the Chiricahuas in Geronimo's camp. Lieutenant Maus asked me what that meant, and I replied that I thought that it was an invitation for us to leave the camp-fire and go to bed. Soon afterwards a couple of Chiricahuas, one very drunk and the other seemingly sober, came by our fire and made wild gesticulations, at the same time cursing in a mixture of Spanish and Apache. I told our party not to notice them, and said that it was only another of their bluffs to get us to retire. I then motioned the packers to leave the fire and go to their beds about the cargo, where they usually slept, which they did, leaving the Lieutenant and myself at the camp-fire. A few minutes later another shot was fired from the same direction and probably by the same Chiricahua, who had, I thought, been detailed to drive us away from the fire and to bed.

I then told Lieutenant Maus that, in my opinion, the hostiles were at that time making their preparations to skip out, and that they did not want us prowling around to see what they were doing, and that they would not be certain that we would not until we turned in for the night. I also remarked that there would not be a Chiricahua in camp in the morning, and to prove this I will take the "bell horse" around the point in rear of Geronimo's camp and turn the mules

loose to graze there, so that when the hostiles leave their camp they will scare the "bell horse" as they pass by in the direction of Fronteras. I knew that the "bell horse," if frightened, would break for camp followed by the mules, and that this would awaken me and the packers.

The Lieutenant still did not think so, and went off to bed, and I soon followed him, but not to sleep. I had my rifle and ammunition by my side, as I rolled myself in my blanket and there waited patiently for what I felt sure was to follow. The night was perfectly clear, and I could see Chihuahua's band wrapped in their blankets, with not a sign of anything moving. At half past two, by my watch, I again took a look at Chihuahua's camp, but there was no sign of movement, and I began to think that I might be mistaken or that at least Chihuahua was not in the plot with Geronimo.

Some time after three o'clock I thought I heard the faint tinkle of the bell, and soon there was no doubt of it, as I could hear it coming closer and louder. I at once ran with gun in hand to Lieutenant Maus, and told him they were gone. He asked, "What is gone?" and when I said "The Chiricahuas—Geronimo has gone," he replied, "You are crazy; do you not see them over there?" I then said that Chihuahua and his band are there, but Geronimo has gone, and asked him if he did not hear the bell horse coming as fast as he could travel. He still did not believe me, and I asked him to go up on the hill with me and be convinced. By this time the packers were all up, and we went up the incline to where Geronimo's camp had been, only to find that they had skipped for the Sierra Madres.

Upon our return, the Lieutenant asked what was to be done then, and, upon my advice, went to Chihuahua's camp and asked him and Ky-e-ten-a their opinion as to Geronimo's movements. They having heard the stir and noise in our camp were getting up, and said they would look around and report later. Ky-e-ten-a saddled his horse and rode off and was gone nearly an hour.

In the meantime the Lieutenant had counted Chihuahua's band and found that about eighty, young and old, of his band had remained with him.

While he was doing this, I interviewed Chihuahua, I having known him well when he was a first sergeant of scouts under Lieutenant Maney, and got his opinion regarding the prospects of Geronimo's returning after getting over the effects of his spree. He said that he would never return of his own accord.

When Ky-e-ten-a returned, he reported that the trail led off towards the Sierra Madres, and that he had followed their trail for some distance in that direction.

After discussing what was the best thing then to be done, Lieutenant Maus decided to send what Chiricahuas there were left on in to Fort Bowie, under charge of Lieutenant Shipp, sending with him what pack mules we did not need, and that he with the scouts and the remainder of my pack train would follow Geronimo's trail. I had advised him that it would be absolutely necessary to make some such demonstration in order to satisfy General Crook that we had done all in our power to bring Geronimo and his party to Fort Bowie.

As soon as possible we pulled out on their trail and followed it in the direction of the hamlet of Fronteras, striking the Bavispe River about fifteen miles from our camp. On the other side of this river the trail split, one party, evidently the old men, women and children heading for the Sierra Madre Mountains and the other took up the river. This latter trail was evidently that of the warriors, and they were without doubt bent on a raiding expedition to replenish their stock and supplies, which we found out later was the case.

The scouts finding the trail divided, told Lieutenant Maus that there was no further use of following it, and he decided to return to Fort Bowie, which he did the next day.

While on the return march the next day, April 1st, our scouts saw some signals, which, upon investigation, proved to be made by two of the Chiricahuas, who, having been too drunk to keep up with the renegades, had laid down and gone to sleep and had been left behind. On seeing our party, they decided to join us, and did so. They said that if it had not been for the mescal that they and the others had gotten that none would have left, and all would have returned to Fort Bowie.

In my opinion, the primary cause of this outbreak of Geronimo from the camp was due to the unfortunate manner in which the two conferences were conducted, in which, in the first Geronimo was humiliated, and in the second Chihuahua was lauded and treated with all the courtesy possible. This aroused the jealousy of Geronimo and started the antagonism between the two bands. Geronimo felt that inasmuch as, up to that time, Chihuahua's band had committed all the depredations and murders, he was being unjustly discriminated against, and this, with the easily obtained mescal, started him off on his debauch, which ended by his leaving Lieutenant Maus's camp on the night of March 31st.

We arrived at Fort Bowie on April 3d, and Lieutenant Maus reported the unfortunate circumstances to General Crook. What passed between them I do not know, but on the following day we learned that the General was to be relieved by General Miles.

This astonished me greatly (I am writing from the notes made at that time in a diary that I kept), because I thought there was, or should be, no trouble in inducing Geronimo to come in after he had fully recovered from the effects of his drunks, provided that the proper man was sent after him.

There were several officers among those who had been in command of the scouts in whom the Indians had confidence, and to whom Geronimo would have listened and whose advice he would have followed, and who could have gone to his camp with perfect safety. I could have named half a dozen such officers, any one of whom Geronimo would have received and with whom he would have gladly returned to Bowie. With the exception of Geronimo, Nachez and Ky-e-ten-a, all had served from one to three enlistments as scouts, and these Indian companies had always been under the command of an officer, chosen usually from the cavalry, and whom they liked and who had their confidence

When Captain Crawford was killed, General Crook lost his right hand man, and the unfortunate trouble with Lieutenant Gatewood regarding the Holbrook postoffice incident deprived him of his next best man, although there were many other officers whose services were as valuable, except

that these two were in close touch with the Chiricahuas for from three to six years, and were much beloved by them.

A few days later, while engaged in a game of billiards with General Crook at the Officers' Club, he spoke of this escape of Geronimo, and said he had almost lost confidence in human nature. I then told him that I had been on the point of suggesting to him the morning he took breakfast with me at the Cañon de los Embudos, that he ought to remain and come in with the Chiricahuas, and that had he done so all this trouble would have been avoided. He replied that other duties put upon him by the War Department required his immediate presence at Fort Bowie.

A few evenings later this matter of Geronimo's escape and the best means of effecting his return was being discussed in the club room, and while all agreed that it would have been better to have had in some manner two or three troops of cavalry present at the time of the conference, or soon after, but all feared that the approach of cavalry would have alarmed the hostiles and have caused all of them to leave before the troops could arrive. They, of course, were watching every approach to the rendezvous. Upon being appealed to for my opinion, I stated that it was too late to express my ideas as to what should have been done, but the only possible way to have gotten troops there would have been to have sent word to Captain Smith at Silver Springs and have him send a courier to us with information that the Mexican troops were on the way to Geronimo's camp, and that he was coming with his troops to protect the hostiles from an attack by them. The fear of Mexican troops being in the vicinity would have induced them to accept the protection of the American soldiers. However, all this was an afterthought.

A few days later General Nelson A. Miles arrived at Fort Bowie and assumed command of the Department of Arizona on April 12, 1886, and soon thereafter active operations against Geronimo were resumed.

As in the preceding campaigns, the services of Indian scouts were employed, these being organized into companies commanded by selected officers from the cavalry service.

In these operations against Geronimo, General Miles used the heliograph, by establishing stations on prominent peaks in the zone of operations, these being under the supervision of Lieutenants Dravo and Fuller, of the Signal Corps. It was thought that this and the more general use of military forces, in conjunction with the Indian scouts, would bring the campaign to an early conclusion.

On May 1st my pack train and that of Willis Brown, who had been my cargador in the previous campaign under Captain Crawford, were selected to carry supplies for the command of Captain H. W. Lawton, Fourth Cavalry.

On May 2d I received orders to proceed with both pack trains to Fort Huachuca, and on arrival there to draw the necessary supplies from the Quartermaster's Department, rations, etc., and make all preparations for an early start upon the arrival of Captain Lawton.

These supplies were divided equally between the two trains, so that each mule had a load of about 250 pounds, and the cargo was made ready for moving at an instant's notice.

On the afternoon of the 4th, Captain Lawton and Assistant Surgeon Leonard Wood arrived. I had known Captain Lawton for many years, ever since 1866. He was of athletic build, tall and large of frame; his hair at that time was raven black, and when close cut, as he usually wore it, stood straight up like bristles; his eyes were jet black, and when he was excited they had a nervous twitch; his nose was rather large and inclined to aquiline; forehead low and narrow; he had a delicate mouth which hid a remarkably fine set of teeth; his ears were large and prominent and he always wore a mustache, of which he affected great pride. He was always physically aggressive towards enlisted men and civilian employees, sometimes harshly so, but in later years his disposition underwent a radical change in this respect, apparently to me as his hair changed from a coal black to perfect white, from a rough rudeness to the manners of a Chesterfield. He was always outspoken, even to superiors in rank; strong in his friendships and the reverse to those he disliked. As a quartermaster he had few, if any,

superiors in the art of handling field transportation, and he had rendered invaluable service to General McKenzie throughout his many Indian campaigns in the Southwest ever since the close of the Civil War. He was essentially a soldier, and delighted in his profession.

On May 5th Captain Lawton's command, consisting of thirty five men of Troop "B," Fourth Cavalry (Lawton's), twenty men of Company "D," Eighth Infantry, Lieutenants Terret and Johnson, twenty Indian scouts under Lieutenant L. Finley, Tenth Cavalry, and Tom Horn as chief of scouts (Horn had served under Captain Crawford and Lieutenant Maus in a similar capacity in the preceding campaign, and rendered valuable service), Assistant Surgeon Wood and the two pack trains of fifty pack mules and fourteen packers each, started from Fort Huachuca, Arizona, ostensibly for the Sierra Mountains, passing down by old Fort Crittenden, Calavasas and Nogales.

When Geronimo had split up his party by sending the women and children to some stronghold in the mountains, he and the others raided the neighboring hamlets and obtained what mounts they needed in addition to some beef cattle, and then joined the others, the entire band consisting of twenty bucks and sixteen women and children.

He naturally expected that General Crook would keep his promise and pursue him until the last one was either captured or killed, and in his stronghold in the mountains awaited developments. Finally, becoming restless and anxious to know what was going on, he made a flying raid to Fort Apache in the latter part of April. There he learned that the troops were on the move, and he again divided his band into two parties, leaving the women and children in some secure and secluded place, and headed for the Patagonia Mountains and the neighboring ranges. This was farther west and in a more thickly settled country than that in which Chihuahua had operated the year before, and he went there probably for two reasons: First, to let the citizens who had been anxious for his scalp, know that he remembered their wishes and was willing to give them the opportunity to take it; and, second, by confining his operations to

the Patagonia, Penito, Mariquilla and Canaea Mountains, he would be able to wear out any mounted troops that should attempt to follow him, particularly as this would secure the safety of the squaw camp in the mountains farther north. After leaving Fort Apache, Geronimo passed south through the San Catalina, Colorado, Whetstone, Mustang, Patagonia and Penito ranges. In this last range he was engaged in a fight with Captain Lebo's troop of the Tenth Cavalry, where a corporal was badly wounded, and who was rescued while under a galling fire by Lieutenant P. H. Clark. I had the pleasure of meeting this young and gallant officer before and afterwards.

Again they were engaged with, or rather surprised by, Captain Hatfield's Troop "D," Fourth Cavalry, on the 15th, near the Santa Cruz River, a few miles southeast of Santa Cruz, where they lost their ponies and all their camp outfit. However, they in turn pursued Captain Hatfield and recaptured their ponies and camp plunder, with the loss to the troop of one man killed. Many acts of bravery were displayed in this fight by Sergeants Adams, Craig and Packer Bowman in rescuing the wounded man before he died, he having used all the ammunition he had in his belt in defending himself.

After this fight, the Chiricahuas separated, one party going east and north in the direction of Apache, and the other to the northwest in the direction of San Carlos, taking advantage of the mountain ranges in each case. Captain Lawton also separated his command, he with Packmaster Brown going west, and my train going with the infantry under Lieutenants Johnson and Terret.

We reached Calavasas about the first of June, where we were joined by Captain Lawton and Dr. Wood. General Miles and his aid, Lieutenant Dapray, arrived about the same time.

The hostiles having reached the neighborhood of Apache and San Carlos, turned and headed for the San Catalina Mountains, where they were attacked by the Tucson Rangers under Dr. Samaniego. In making their escape, they left a small Mexican boy that they had captured in the

hands of the Rangers. From there they passed down through the Colorado, Whetstone, Mustang and Patagonia Mountains, and in the latter were again surprised by Lieutenant R. D. Walsh, Fourth Cavalry (now Captain Ninth Cavalry), who captured their ponies and camp outfit. Captain Lawton continued the pursuit with a detachment of cavalry and scouts—about twelve or fourteen of each—into the Azul Mountains, where they turned in a southeasterly direction, and headed for their squaw camp, which was located, either in the Opata, Backadehuache or Narcori Mountains. After the Chiricahuas left the Azul Mountains, the chase after Geronimo came to an end, and preparations were then made for a campaign into the Sierra Madres. New scouts were enlisted, a fresh detachment of infantry detailed, and a permanent supply camp was established at Oposura in the State of Sonora, with Lieutenant Benson in command, the supplies being hauled to this camp by wagon transportation.

As the Geronimo campaign practically ended with their leaving the Azul Mountains, it may be well to give a brief summary of the events up to this time.

When Geronimo and Nachez broke out from their camp at Fort Apache on May 16, 1885, they took with them 132 Chiricahuas, men, women and children, of whom forty were bucks, and these forty led the troops on many a long and weary chase during the years '85 and '86. Nachez, the head chief, divided his following into three bands under the subchiefs Geronimo, Mangus and Chihuahua, and they headed for the Sierra Madre Mountains in Old Mexico.

There they selected a suitable camp for the women and children, and then proceeded to divert the attention of the troops so as to prevent their discovering the whereabouts of this camp. This they did by leading them, as before related, over the highest mountain ranges in their efforts to wear out the horses and men of the pursuing troops.

Mangus operated in the State of Chihuahua and New Mexico, Chihuahua in the State of Sonora and Arizona, while Nachez and Geronimo guarded the squaw camp. The latter

were kept informed of the movements of the troops from time to time.

When the two commands of Major Wirt Davis, operating on the north of the Sierra Madres, and Captain Crawford, on the south, had Geronimo between them, as before stated, Lieutenant Britton Davis captured fifteen of the women and children and old Nana, and about the same time Lieutenant M. W. Day, Ninth Cavalry, captured about the same number of women and children, a squaw and two children being killed by the scouts under his command. This was the first time the squaw camp had been located, and Geronimo found it necessary to divert the troops from that vicinity. This was done by sending raiding parties under Chihuahua, Josanna and Mangus by different routes in the direction of Apache and San Carlos. As they had the scouts in their rear, these raiding parties led them from one range to another, over the highest summits, and occasionally stealing what stock they needed, and killing a few miners and taking their supplies of food and ammunition.

At no time during this campaign were the hostiles without communication between their camps and Fort Apache or San Carlos, and were well posted as to the movements of all commands, and they relied on their friends there to warn them of approaching danger. It was almost impossible to surprise them, although this was done on a few occasions and their ponies captured, but it was easy for them to travel on foot over the highest mountains, their endurance in this respect being simply marvelous. It was also easy for them to obtain remounts by making a raid on the ranches on either side of the line.

To return to the campaign under General Miles: Soon after the supply camp was established, Captain Lawton, learning of some depredations committed by the hostiles in the vicinity of Tonababa, left Oposura the first week in July with a command consisting of a detachment of scouts and some infantry, the former under Lieutenant Brown and the latter under Dr. Wood, the latter taking the trail on foot with the scouts and infantry, and at the same time caring for the sick.

I was compelled to return from Oposura to Fort Huachuca for treatment in the hospital for sciatic rheumatism, and where I remained for four or five weeks. I returned to Captain Lawton's camp in company with Lieutenant A. L. Smith, Fourth Cavalry (now colonel in the Subsistence Department), and Billy Long, a dispatch carrier, his camp then being located about fifteen miles south of Narcori, Captain Crawford's old camp.

Soon after I returned the Captain sent for Tom Horn, chief of scouts, and myself to come to his tent. We found him with a map spread out on his bed on the ground, and he pointed out to me his route since leaving Oposura, and then asked our views as to where the hostiles were then located. He and Horn agreed that they were somewhere within forty or fifty miles south of his camp; but I differed with them, and said there was nothing in that direction to take them there, as the people there were poor, with no cattle, stock or firearms, and there was no game whatever, not even a jack rabbit. I told him that he would probably next hear of them in the Cumpas Valley, or perhaps farther east in the vicinity of Granadas or Oputo.

However, Captain Lawton did not think so, and made preparations to cross the Jarros River, which was high, and a dangerous stream to cross.

As I was still suffering with sciatic rheumatism (I was being treated by Dr. Wood, who gave me morphine to ease the pain), Captain Lawton informed me that he was going to send me back to the supply camp, as it would be impossible for me to go on, and that he would send me in charge of the infantry that he intended sending back to Oposura. He said that in case I met General Miles, I was to tell him that he (Captain Lawton) did not want any more infantrymen, and told me to say to him that he might as well try to hunt Indians with a brass band.

On the way to Oposura I met Lieutenant Wilder, Fourth Cavalry, who enquired as to the whereabouts of Captain Lawton and the hostiles. I told him the direction Lawton had taken, and where I believed the Indians had gone; and while I had not cut any signs, that he had better keep a sharp

lookout for them. The following day I met a Mexican courier with dispatches for Captain Lawton, whom I directed where to find him.

On arriving at Benson's Camp, I learned that Geronimo had passed down the Cumpas range and had killed some miners, and that he was then at Fronteras trying to make terms with the Mexican officials. I did not think that Geronimo was seriously considering this, as it would mean their extermination, but that he was secretly endeavoring to procure supplies as well as mescal.

I learned later that Lieutenant Gatewood was then on his way, with two friendly Chiricahuas, to locate Geronimo with a view of inducing him to surrender. Gatewood knew full well his influence with these Indians, and did not underestimate his powers when he proposed to bring them in.

The two friendlies made their presence known to Geronimo by signal smokes, and on being answered, entered his camp. On telling them that Gatewood wanted to come in and talk with him, Geronimo went out and met him and asked him why he had not come in with the friendlies. Gatewood replied that he was not certain that Geronimo would receive him, upon which the latter replied that his friends were always welcome in his camp, and that it was always safe for them to come.

The Mexican courier that I had met on his way to Captain Lawton had a dispatch informing the Captain that Lieutenant Gatewood was in communication with Geronimo, and ordering him to proceed to Fronteras and join Gatewood as soon as possible. He (Lawton) immediately proceeded with a few scouts, and, riding night and day, joined Gatewood and there met Geronimo. The latter at once asked for supplies, to which request Captain Lawton replied that his pack train would be in soon, when the supplies would be forthcoming. Geronimo then told him that his pack train was lost back in the woods and would not be in for two or three days. Captain Lawton seemed surprised at this, and was more surprised when Geronimo told him every camp he had made and how he was dressed.

The result of the conference of Geronimo with Gate-

wood and Lawton was that he agreed to move with Lawton's command to Skeleton Cañon, inside our lines, where he would confer with General Miles.

While waiting for General Miles at Skeleton Cañon, Geronimo saw what he thought was an indication of an attempt to surround his camp. He at once notified Captain Lawton that it must stop or he would leave. No further attempt was made to surround him. I mention this fact to show the nervous fear that Geronimo had that some trick would be played on him, and were it not for the fact that Gatewood was present, he would not have remained during the prolonged delay that they waited there for the arrival of General Miles.

The General at last came on September 3d, in an ambulance, and after the conference with Geronimo and Nachez, they and a few others were requested to get in the ambulance and ride with the General to Fort Bowie. This they did, and they arrived at Fort Bowie on the evening of September 5th. Captain Lawton arrived with the remainder of the Chiricahuas three days later, when all were put on board the cars and sent to Florida.

BREAKING AND TRAINING AN AUSTRALIAN REMOUNT.

By First Lieutenant CLARENCE LININGER, First Cavalry.

IN the CAVALRY JOURNAL of July, 1907, there was published an article written by Major W. C. Brown, Third Cavalry, dealing with his observations of the Australian horses, their cost, breeding, type and fitness for the cavalry service. In the latter months of 1907 he was in Australia purchasing a number, so that at present four troops of the First Cavalry and a number of troops of other regiments have received them as mounts. On January 25, 1908, fifty-four of these animals, raw and untrained, were assigned to Troop "A," First Cavalry, and the following remarks are, with the permission of the regimental commander, copied almost verbatim from the report rendered at the close of the three months period allotted for their training.

Forty-two were geldings, the rest were mares; thirty-two were four-year-olds, the rest ranged from three to seven. Three were broken so that they could be saddled and mounted at once, the remainder were barely "halter-broke," varying in habits from the comparatively gentle ones to the two or three that would rear and strike upon the approach of a man. They had been in the corrals in Manila for about a month previous, where the work upon them had consisted in putting on halters and leading from one corral to another, morning and afternoon; during this time they had become accustomed to the army forage ration.

The work of breaking and training started in immediately; the system followed was in its general features that taught in the Mounted Service School at Fort Riley, with the idea of accomplishing results by gentleness, by the least

possible show of force, by as little opposition as possible on the part of the horse; also to inculcate in him a sense of confidence in his rider, and to eliminate bucking.

A most noticeable feature was their fear of man; in their life on the range they had come in contact with him little except for branding purposes, while after their purchase they naturally had some rough experiences in corrals, on railroads, and on shipboard. The first object to be obtained was the elimination of this fear. The troop was excused from all other duties for the time being, so that every man could be present at all formations, and to each man was assigned a horse which he alone must break, thereby accustoming the animal to all men through kind treatment from one.

The gentling process was accomplished through feeding, grooming, leading and handling. As soon as the horse would permit it the watering bridle was put on, then in order the surcingle, blanket and surcingle, saddle without stirrups, and last the complete saddle The last brought about the first and only bucking of a goodly number, caused by the rubbing of the hair cincha on the tender skins. All the while leading was being done, in which the man grasping the reins near the bit rings caused the horse to walk out with his nose slightly in advance of the shoulder and with head held up. Results followed almost immediately. Within a couple of days many of the gentler animals had been bridled and saddled. After that came the task of mounting the first time or more without bucking. A stock saddle was put on an old and quiet horse, the colt was brought alongside and a couple of turns taken with the halter strap around the horn, after which he was led around the pen a few times to quiet him down and teach him to lead in this manner. The pen, I might add, was about 15x25 yards in dimensions and with eight-foot sloping walls. The colt's nose was then drawn up to the horn, and the man placed himself on the near side, grasping the reins and check strap with the left hand. Then in order he put his foot in the stirrup, put some weight in it, stood in the stirrup, and finally settled himself in the saddle. This would take

from one to six lessons, depending on the temper of the animal. With his head securely held his most powerful efforts were futile, and he could be led around the hall at will. When his eye and actions indicated that he had become calm in his mind, he was given more strap, and finally released altogether, and allowed to wander around very much at will, being "snubbed up" again to permit the rider to dismount. The number of these lessons likewise depended on the temper of the horse. Up to this point it would be proper to call the work "breaking" and the subsequent handling "training."

At the end of one week twenty-four horses were being ridden, at the end of two weeks forty, and in a few days more all the remainder except two. Of these, one was constantly on sick report, while the other was a difficult case that finally succumbed, making one of the best. The work in training comprised starting and stopping, turning, circling, figure of eights, passing from walk to trot, and vice versa, turnings on forehand and haunches, first dismounted and then mounted, passaging, and at the end of two months the gallop, with the object in view of first making a riding horse before attempting to make a cavalry horse. During the third week the bit and bridoon bridles (a combination makeshift of the curb and watering bridles) were put on thirty of the quieter animals, and flexion lessons, direct and lateral, according to Fillis, were given. The bridle used was far from perfect; but even so fairly good results were obtained. The jaws were opened and made flexible, the necks arched, the heads elevated, and the faces brought to the proper position of almost vertical. Double bridles were put on the remaining horses as they became ready.

At about this time when the two halls became filled to overflowing, those farthest progressed were taken outside for their training. Each of the four squad leaders took the men and horses of his squad and was directly responsible that the work was carried on and followed out as directed. Daily one squad would be dismissed for an hour, with orders to ride about the post to accustom the horses to their surroundings and give them courage in going alone.

Instruction in jumping was given on the longe. A chute was built with an adjustable bar at the end. The horse was put on the lariat and sent into the chute; the man ran along on the outside, letting the rope slip along on the top of the fence. Another man stood by with a whip to touch the horse if he hesitated. Every horse did three feet eight inches, a number did four feet, while two did four feet seven inches. After they had learned to jump in this manner, the mounted instruction followed.

Working out on these lines from day to day for three hours in the morning and two in the afternoon, including grooming, at the end of seven weeks they could be put into good collection, with light jaws, good head carriages, and hind legs well under; would turn on forehand and haunches and pass to the right and left, many at the trot. As all had now become safely confirmed in the trot, the gallop was taken up, and on account of the necessity of completing the pistol firing within the next five weeks, the class of training was slightly altered.

Each day a new article of the full pack equipment was put on, saber and empty pistols were carried and used; tracks were laid out and each man required to ride and handle his horse sufficiently well to take him over at any of the prescribed gaits. Some firing of blanks was done at stables and more at drills; then while going over the track the rider would fire one blank, afterwards two, then three, and so on, or as many as the horse would allow without attempting to leave the track. It was noticed in general that it was not the first shot which frightened, but one of the following.

Pistol firing proper was conducted during the eleventh and twelfth weeks, and with the exception of a couple sick and a couple whose training could not be kept up to the others, every horse was used, and their work was at least as good as the average troop of horses.

Close and extended order drills were had from time to time, including "to fight on foot" and the handling of the led horses.

From April 19th to 27th, inclusive, the troop was on a practice march to Olongapo, the march being taken not with

any idea of testing the efficiency or endurance of the colts, but simply as another step in their training. Fifty-six miles were covered going and sixty-six returning, two days of each being over a very difficult mountain trail, while in the last two days forty four miles were traveled through boggy rice fields or on hot and dusty roads. After the second day their appetites returned, and they ate everything given them, the exigencies of the service, however, keeping them on half hay most of the time. From a training standpoint and as a test of training, the time on the march was well spent, and as they returned in as good shape as they left, the work could evidently have been no hardship, young and unused to it as they were.

The Australian horses are an experiment, and it would not be fair to them nor a logical move to attempt to discover their capabilities at this time, but by the end of the year when they shall have added another year to their ages and shall have had the opportunities for development which the year's work will afford them, they should be given a just and thorough endurance test to ascertain whether in the end, all things considered, they are the horses we want for this service, or the more expensive ones brought over from the States. Observation for the last three months leads to the belief that they can do all that can be expected or demanded. In their favor it can be said that they are better bred than the American cavalry horse, their average falling but little below that of the colts purchased for the Mounted Service School. It was this trait which rendered so practicable the outlined system of breaking, real viciousness being a factor hardly to be considered. While they are lighter in bone and muscle, their joints are good and they give the impression of having the strength to carry all that will be put upon them in this country.

Two features of training appear to be of considerable value, viz., leading and longeing. Not only does the former, as described above, serve to gentle the horse, but it teaches him to move out freely, to go up to the bit and to elevate his head, which in turn tends to a certain extent to bring his hind legs under. Further than that, good leading is essential

for the flexion lessons, and its value is again seen when the led horses of the dismounted troop are first maneuvered. The efficacy of longeing became more apparent as the breaking and training progressed. A horse which was slow to move forward did not understand the meaning of the whip, was loggy or awkward, inclined to play up and not permit his breaker to handle him, was immediately put on the longe and given a good working out, one day or many. In fact it seemed a panacea for all the minor evils. While it shows the animal that he must obey the will of his handler, it goes farther, and becomes a gymnastic exercise not to be underrated, developing suppleness, lightness and activity. The more its use is observed the more does its importance become apparent.

A useful adjunct to the stables was the "pinch bar," a narrow stall, one side of which swung like a gate, into which a horse could be led, tied and pinched in until he was held almost immovable. This was used for those which suddenly became obstreperous, after other means failed, or for medical treatment. For instance, the mallein test was given, properly and with perfect safety and ease shortly after arrival.

The interest and pride which the enlisted men took throughout, is worthy of mention, and it is no exaggeration to say that three months of this work made better horsemen than three years ordinary riding. The adoption of the plan whereby the work was done by squads, seemed not only the best but almost the only one feasible. It ensured the training of every horse on the prescribed lines and gave the squad leaders something very clear and definite to do. The results obtained showed that the confidence put in them was not misplaced.

Higher training is desired, but it is submitted that the period which terminated with the practice march saw the horses in that state of efficiency which will permit the troop to perform any duty for which it may be called.

A CAVALRY SADDLE.

By Captain ALONZO GRAY, Fourteenth Cavalry.

FIRST pointing out what I consider to be the defects for cavalry service of the different types of saddles generally used in the United States, I will then consider how these defects may be remedied.

The Stock or Cowboy Saddle.

This saddle finds favor with many for military purposes. For cavalry use, the horn is not necessary. Here a general principle may be stated, viz: Every ounce of extra weight should be discarded unless its adoption is of material advantage.

On this principle the skirt will probably have to be eliminated, although I think this point fairly debatable. A skirt which would cover the saddle blanket would distribute the load over a larger surface, and therefore produce less pressure in any one spot.

The saddle is too heavy. The cantle is much higher than necessary for military purposes.

The English Saddle.

This saddle is growing in favor in our service. It is adapted for polo and hurdle racing, but not adapted for field service, for the reason that there are no points of attachment for a pack.

The Whitman Saddle.

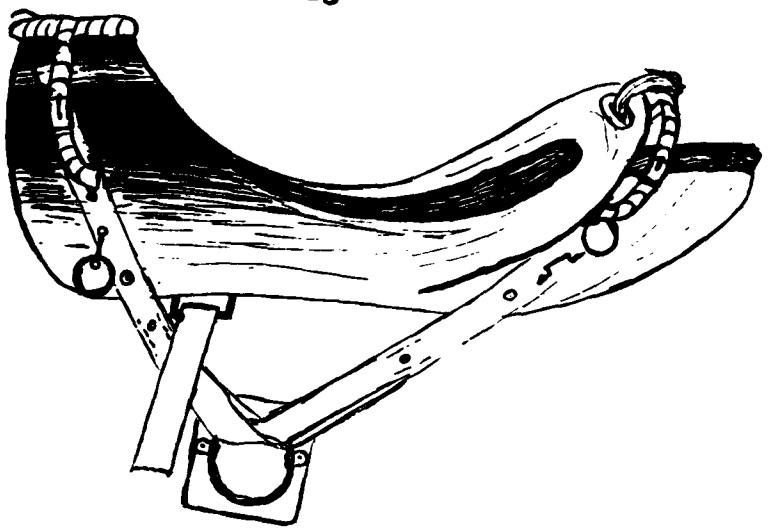
The Whitman seat is not so flat as the English, nor yet so straight as the McClellan. I believe it to be the best for the reason that it is nearest to the natural seat. By the

"natural seat," I mean the seat naturally assumed by a good rider when he mounts a bareback horse. The pommel of the Whitman saddle is, however, so low that even with due care, and when supplemented by use of a crupper, it will usually give sore withers. On this point I feel competent to speak with ample experience.

The McClellan Saddle.

This saddle has given general satisfaction in our service for many years, but that is no reason why the present model should be persistently adhered to when it can be improved.

Figure I.



The most common results of its defects are:

1st. Pommel sores caused by the pommel rubbing withers that are either high and fine or low and thick.

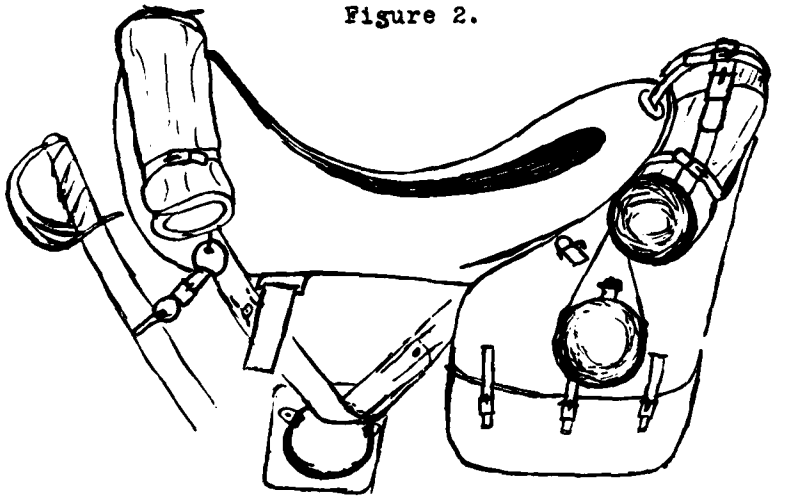
2d. Cantle sores, due either to the cantle roll resting on the loin or the rear points of the side bars boring into the horse's back.

3d. The constant slipping of the saddle blanket.

The sores render the horse unserviceable, and the slipping of the blanket renders the horse temporarily so. This slipping may occur at a very inconvenient moment, when it will be impossible to stop and adjust it. To neglect to do so will result in a sore back. I believe the pommel sores can be avoided by making the arch higher and broader, such as is now found in the stock saddle. The cantle sores can be avoided by extending the side bars to the rear, as is found in the English service saddles. The slipping of the blanket may be stopped by lining the bearing surface with fleece.

Other defects of the McClellan saddle are: The cantle is too high, causing the trooper to sit upright to the extent of not preserving the greatest equilibrium or affording the greatest comfort. The greater the equilibrium, the better

Figure 2.



can the trooper fight and ride; and the greater the comfort the more exertion he can endure.

I do not favor the twisted stirrup strap as now issued. While it causes the stirrup to hang to the rear, the edge of the buckle presses against the trooper's shin, causing much annoyance.

I am much in favor of the hooded stirrup as now issued. It protects the feet from brush, sun, wind, rain and snow. I once rode an open stirrup in a cold rain, which turned to

sleet and then snow. This one experience forever settled the question of the hooded stirrup in my mind.

As to the question of thongs vs. straps, I observe that thongs are quicker to use, being always ready. The strap looks neat when the rolls are on the saddle. They are not as a rule done up neatly when no pack is carried, and often look slovenly.

In the sketches accompanying these notes I have tried to illustrate my idea of what the cavalry saddle should be. I have borrowed freely from all the others. The pommel is the stock saddle pommel without the horn. The seat, cantle and position of stirrup are from the Whitman. The extended side bars are from the English. Other features are from the McClellan.

Fig. 1 shows the saddle stripped and Fig. 2 shows it packed.

ARMY REORGANIZATION; AN ARGUMENT FOR THE MOUNTED BRANCHES.

By A CAVALRY OFFICER.

WITH the growth of the nation, and its increasing responsibilities over seas, came the necessity of increasing, from time to time, its national defenses. The army, in the past ten years, has been enlarged and reorganized, and its schedule of pay has been materially increased. The increasingly important functions assigned the army to perform caused these betterments, and they, in turn, caused increased efficiency.

It must be admitted that the nature of the operations of the army during the past ten years has been such that the cavalry arm has had to perform much of its work dismounted, and that, in consequence, a heavier share of tropical service has fallen to the lot of the infantry. This disparity is not very great, however. Forty per cent. of the cavalry arm—six regiments—and forty-three per cent. of the infantry—thirteen regiments—are now stationed in the Islands. This is a fair ratio of the duty performed by the two arms during the period under consideration.

So much for present needs. The proportions of the various arms of the service—cavalry, field artillery, coast artillery, and infantry—are not, however, based on present needs. If they were, we would have no coast artillery at all, very little field artillery, and no more cavalry and infantry than we now have. The horizon never showed a less belligerent aspect. The nations of the earth are busy with peaceful pursuits.

An army, like any other sort of insurance, is for the unexpected emergency. Each nation of the world must either

maintain its own system of defense, or, in exchange for a portion of its sovereignty, depend upon the defensive strength of its stronger allies.

The United States acknowledges no ally. Its policy is to avoid alliances of all sorts with stronger nations, and to place its strength and resources at the service of its weaker brothers on the American continents when a stronger nation threatens their independence.

The Constitution of the nation and the overwhelming sentiment of its citizens is against maintaining a large standing army, consequently in our defensive scheme the use of volunteers, or militia, must be depended on for the main line of defense. At the outbreak of a war with a first class power, the Regular Army and the more thoroughly trained regiments of the National Guard will form only the first line of the defense. In holding back an invading army, or in establishing a foothold on his soil, this line would disappear, and would only have served to delay matters until the second and numerically much stronger line can be mobilized, equipped, and put in fighting condition.

The world has just been given an opportunity to study the influence a lack of cavalry has in a war between two powerful nations. Unfortunately the object lesson did not show us what the effect would have been if one nation, equal in all other respects, had possessed a preponderance of that arm. But the lesson, imperfect as it has been, must still convince any judicially minded student of grand tactics that a strong cavalry arm is necessary in the prosecution of an offensive campaign.

The second line, for the infantry, is going to come from the National Guard; it must come from there. The regular regiments will be stripped of their more knowing and more ambitious officers, who will seek and obtain volunteer commissions with increased rank. Their regiments will degenerate, as was the case in the Civil War, into mere battalions, under officered and manned with recruits.

The spirit now in the National Guard, if maintained, will furnish better material, and in larger numbers, for the second line than ever before. But where the second line

cavalry and field artillery are to come from is another question. There are, in the entire Guard, but two organized regiments of cavalry. Several of the States have squadrons organized, but the greater number are satisfied with a troop or two. In the United States there are one hundred and fifty-two regiments of National Guard infantry, seventy two troops (the equivalent of six regiments) of cavalry, and fifty-four light batteries. The ratio of infantry to cavalry is as twenty-five to one.

So the nation, in preparing its mobile defenses, finds a large force of citizen infantry, of greater or less efficiency, being trained. Neither the infantry or the cavalry or the field artillery of the National Guard will go into an extended war—one that threatens the integrity of the nation—with their present membership; that is a condition that must be confronted. But, nevertheless, a great many of the young men of the country are being trained, more or less imperfectly, to be infantry officers. They are being taught to shoot, to march; they are instructed in camp sanitation and camp discipline; they are practiced in the services of security and information. These young men, captains, lieutenants, sergeants, corporals and privates, in training now, and those to be trained during peace times in the future, must furnish the officers of the infantry regiments of the second line when the United States goes to war.

There is no such large school for officers of the mounted branches. Cavalry and field artillery organizations cost too much money for the rural assemblyman. Any village of two thousand inhabitants can muster sixty young men who might organize a company of infantry. It costs but little to maintain such an organization. But a troop of cavalry, or a battery of field artillery is a different matter, and it is only in the larger and wealthier communities that enough young men with sufficient means and leisure can be found to compose it. The very fact that the members of these organizations must be men of private means inspires the idea—an entirely erroneous one—that they are merely social clubs with military features, and so limits appropriations for their support.

The proportion of cavalry and field artillery to infantry in the army in its peace organization is entirely too large for a war time organization. But the relative sizes of the three arms in the army and its reserves, the National Guard, are equally out of proportion in the other direction. For that reason the cavalry and field artillery arms in the army should be increased still more, not only absolutely, but relatively to any increase in the infantry. This, independently of any other argument is sufficient to cause all persons interested in the efficiency of our defensive system to bend all their energies to a reorganization of the cavalry and field artillery, not only in the army, but in the National Guard as well.

There is, however, another argument that must be prominently advanced. Efficiency in the army, as elsewhere, is directly measured by the energy and ability of its officers. Energy can only be maintained when there is hope of reward. The consciousness of duty well performed is not enough to keep the average human up to his best work. He must look forward to promotion. When an officer at any station finds himself outranked by officers of another arm junior to him in age, experience and length of service, his philosophy is strong indeed if the mere fact, unimportant in immediate results as it may be, does not constantly irritate him and make his duties irksome. His usefulness is impaired. When this disparity in rank (as is now the case in the cavalry) threatens the attainment of the ambition of every good officer, his ultimate promotion to the grade of general officer, his efficiency is still more impaired. When the outlook is such as to absolutely preclude the possibility of such promotion, in the general case his performance of duty becomes perfunctory, and his usefulness is nearly gone.

Authority to command, rank, is the most important of a line officer's functions. The reward of his years of preparation is to enjoy that authority; to exercise the talents he has developed in that direction. This, and freedom from financial care, are, in time of peace, and from his personal standpoint, the two things that make a successful military career. We have seen in the artillery, and prior to 1898, the blighting effect of slow promotion and small pay, and since that year the revivifying influence of rapid promotion, bringing with it increased rank and higher pay. No lesson could be more complete. The same officers who were content under the old organization to watch their soldiers shorten the grass on their obsolete parapets, and whose children hid their toys in the bores of the antiquated muzzle-loaders that made opera bouffe of our coast defenses, at once, under the stimulus of rapid promotion and proper organization, put our harbors in a state of perfect defense. The progress they have made in the development of their arm is almost beyond belief.

And so it will be in our own arm. If we sit idly by watching the other branches of the service work out suitable legislation for the betterment of their own branches of the service, content to groom our horses and drill our men, with no outlook for future promotion, our young officers will fall into the lethargic sleep that so long oppressed the artillery.

Rank and pay, these are the two things every officer should fight for to the last extremity. As they go hand in hand, there is no confusing the issue. It is not merely an expedient—this matter of fighting for our rights—it is a thing that is vital to our very existence.

Since the cavalry's reserve in the scheme of national defense is so small, it is all the more important that the efficiency of the first line be maintained at the highest point. The outlook for promotion in peace time for the cavalry officer must be as good as that of any other officer of the mobile part of the line. For that reason every cavalry officer should keep this idea constantly before him. He must work for it on all occasions, in every honorable way.

"It is impossible to conceive of any general reorganization of the army, along any lines whatever, for immediate necessities or for future needs, that does not commence," continue and end with this vital principle: Equal promotion in time of peace for all officers of the mobile part of the line of the army.

CAPTAIN CRAWFORD'S LAST EXPEDITION.*

By Lieutenant W. E. SHIPP, Tenth Cavalry.

IN the United States Army Register for 1887, we find the following entry: "Died—Captain Emmett Crawford, Third Cavalry, January 18, 1886, near Nacori, Mexico, of wounds received January 11, 1886, in an attack made on his command of Indian scouts by a force of Mexicans."

The circumstances attending his death were so sad and so peculiar, and the character of Captain Crawford was so elevated and noble, that the story of his last expedition possesses a mournful interest for those acquainted with it.

It was the lot of the writer to be a member of this expedition, and to be thrown into intimate association with him, and so to learn to know and to love him; to witness his fall and death; and finally to see his remains buried in the land of strangers—of those who had killed him while he was trying to help them. It is the fact of having had these opportunities, together with the desire to pay a tribute to the memory of one so worthy to be classed among our heroes, that furnishes the reason for writing this account.

What is generally known as Geronimo's outbreak led to the circumstances which resulted in the death of Captain Crawford, and it will therefore be necessary to begin our story by a brief account of that outbreak.

* This article is reprinted from the Cavalry Journal of December, 1892, by the request of several members, with a view of correcting some discrepancies in the article on the Geronimo campaign, appearing in the last and present number of the Journal. Also on account of the general interest in these articles as shown by these requests and the demand for copies of the Journal containing them.

The writer, Lieutenant W. E. Shipp, was killed in action at San Juan, Santiago, Cuba, July 1, 1898.

In May, 1885, a large portion of the Chiricahua and Warm Spring Apaches, then united as one tribe, without cause left their reservation at Fort Apache, Arizona. Nachez was their hereditary chief, and, being a man of ability in addition, was the real leader; the son of old Cochise, who was for many years the terror of the Southwest, Nachez was worthy of his father. Geronimo was the medicine man and orator of the tribe. He was not a great warrior; but, like Sitting Bull in the North, his influence was powerful among his people. A man of diabolical appearance, and with a character to correspond, he always appealed to the bad side of the Indian nature; and they, like too many people in this world, generally listened to him in preference to better men. By some chance Geronimo was always credited by the whites with being at the head of the renegades; this error is of so little importance that, for the sake of convenience, we will adopt it.

The Indians at once entered upon a career of murder and pillage, embracing in their zone of operations large portions of Arizona and New Mexico in the United States, and Chihuahua and Sonora in Old Mexico. The theater of war was so rough and barren that it was with great difficulty that they were followed at all by the troops. Fitted by nature and by long experience for such warfare, and finding plenty of food by stealing cattle and horses, they laughed at their pursuers and continued to spread desolation and terror wherever they chose to go. The broken down horses and the ragged and worn out soldiers showed the work the troops had been doing—work discouraging and doubly hard on account of the almost total lack of success.

Seeing that the efforts of the regulars were fruitless, General Crook, the Department Commander, turned to a plan which had long been a favorite one with him: the employment of Indian scouts to subdue their own people. The hostiles, or "broncos," as they were generally called, had made their headquarters in the great Sierra Madre Range in Mexico, where they had a safe base for operating both in our country and in Mexican territory. A treaty was now made in Washington, which allowed our troops to cross the bor-

der, but it had the great drawback of not allowing us to establish any supply camps in Mexico.

Under General Crook's plan two expeditions were organized, composed mainly of scouts, and commanded by Captain Wirt Davis, Fourth Cavalry, and Captain Emmett Crawford, Third Cavalry. The latter had been recalled for this duty from Texas, where he had just gone with his regiment. He had entered the army after the war from the volunteer service, and had since been almost continuously in active service on the frontier, taking part in most of our great Indian wars, and making for himself a reputation for bravery and devotion to duty not surpassed by that of any officer of the army. Though he had distinguished himself in the Northern campaigns against the Sioux and others, yet it is probable that his service in Arizona had been still more valuable. In 1883 he had commanded the scouts in General Crook's expedition into Mexico, the first expedition ever organized for a campaign against Indians in that country.

Returning from this duty, he was placed in police charge of the San Carlos Reservation, where he had entire control of the Indians lately on the war-path, and where he also kept order among the other turbulent elements. Constantly opposed by employees of the Interior Department and other interested parties, his final overthrow of his enemies and the exposure of their frauds, led to a lasting change in the administration of affairs on the reservation; a change for which the people of Arizona have yet cause to be thankful. Captain Crawford had a thorough knowledge of Indian (especially Apache) character; and he knew personally a great number of the men of this tribe. This knowledge, together with his high character, gave him great influence with them. They knew from experience that they could believe him and trust him; he was kind to them, yet never allowed familiarity; his pure life, his devotion to duty and his fearlessness in the discharge of it, won their respect. Hence he was peculiarly fitted to command them when they took service under the government.

The two expeditions sent into Mexico were as successful as could have been expected, each capturing a number of

squaws and children, and breaking up the camps which had formed the homes of the "broncos." The wearing-out process seemed to furnish the only hope of subduing them; this process, however, promised to be long and somewhat tedious.

In the fall the commands were brought in and thoroughly reorganized. It had been necessary to send out the first expeditions rather hastily; now time was taken to more carefully select the scouts and to more thoroughly equip the commands. The commanders remained the same, but some changes were made among the other officers. Captain Crawford chose the White Mountain Apaches and the friendly Chiricahuas as his scouts, because they were mountain Indians, and were less civilized than the other tribes, and therefore, in his opinion, better fitted for the work to be done. The Chiricahuas were part of the tribe then on the war-path, and had themselves been at peace only about two years. No soldiers were to be taken. The peculiar material selected was believed to be that best adapted to the task of following Geronimo's people into their retreats in the terrific fastnesses of the Sierra Madre, where it was hoped to surprise them and compel their surrender. Surprise was absolutely necessary to success; once aware of the proximity of foes, the hostiles would scatter and render it impossible to follow them. Indians of other tribes and soldiers were not believed to possess the skill and endurance necessary to surprise the vigilant Chiricahuas; Captain Crawford in his previous expedition had found the soldiers he had with him a burden.

The great risk taken in trusting so largely to relatives of the hostiles seemed justifiable, as they alone knew the haunts and habits of the enemy. Many gloomy predictions were made about their treachery, but the many eager offers of service by the young officers in the department showed that they at least were not daunted by the prospect. The selections made were first Lieutenant M. P. Maus, First Infantry, and Second Lieutenant W. E. Shipp, Tenth Cavalry, to command scout companies; Second Lieutenant S. L. Faison, First Infantry, to be Adjutant, Quartermaster and

Commissary; Dr. T. B. Davis, United States Army, to be Surgeon. One hundred scouts were enlisted at Fort Apache, and started for Mexico on the 18th of November, 1885. But before we follow the command on its march it will be necessary to take a look at its organization and personnel.

Two white chiefs of scouts assisted the officers, their principal duty being the daily issue of rations—daily, because the scouts would always eat up at once whatever was given to them. One of these men, Horn, also interpreted from Spanish into English. Concepcion, an old Mexican, who had been a captive, was Apache interpreter. The two interpreters were necessary, because no one could be found to interpret directly from Apache. The interpreters were used only in important talks, as the scouts and their officers understood each other well enough for ordinary purposes. Noche, a Chiricahua, was the Sergeant Major, and performed the duties of leading guide and scout. His superior for these duties never existed. The other conspicuous scouts who were always selected for difficult service were, Cooney, Cuso, Dutchy, Wassil, Kat-e-kahn and Chi kiz-in among the Chiricahuas; Nah-wah-zhe-tah, Good-e-na-ha, Loco and Josh among the White Mountains. Some of these deserve our notice. Cooney and Cuso were two short, big-chested men, with almost unlimited powers of endurance; in their savage way they were as honest and loyal as men could be, and were splendid scouts. Dutchy was a known murderer; brutal and mean, but in many respects a valuable scout.

Our captain's treatment of Dutchy well illustrates his methods with Indians. During the previous summer this man had mutinied and had been sent to Fort Bowie, where he was put in irons. Though he was undoubtedly guilty, Captain Crawford took him again as a scout, but refused to give him the chevrons he demanded. He, however, selected him as his body servant, and trusted implicitly this man who had not long before threatened his life. The result was the establishment of a complete ascendency over Dutchy, and increased respect on the part of the others, as they saw how little he feared this dangerous man. Wassil was an old man, a fine scout, and the best hunter of all. His claim to fame

rests, however, on his escape from the train conveying him to Florida in September, 1886, and his return from Independence, Mo., to Arizona. His long journey through an unknown country, part of it thickly settled, shows what an Indian can do towards finding his way. He is now (1891) a renegade in the mountains; has committed several murders, and seems safe from capture.

Nah-wah-zhe-tah, or Nosey, as he was irreverently but appropriately called, was a great medicine man—which means that he was a doctor, preacher, conjurer and prophet, all in one. Dressed in an old alpaca coat, ornamented with a pair of shoulder straps, and a pair of cavalry officer's trousers, much too long for his short legs, his first appearance was hardly in keeping with his solemn character and functions. Though undoubtedly a humbug, yet his influence was exercised for good, and rendered the task of governing the wild scouts much easier. Poor old Nosey is now in jail for killing his own chief, the result of too much tiswin, the Apache intoxicant.

The scouts were not burdened with much clothing—the soldier's blouse, a pair of cotton drawers and a waist cloth, moccasins and a red head-band, constituted the usual costume. Their picturesqueness, and above all, their efficiency, were not spoiled by attempts to make them look like regulars. In these men were apparent the results of heredity and long training. Small and unable to compete with white men in any athletic sports, yet they made us feel like babies when it came to mountain work. The Chiricahuas, especially, were a never-ending source of wonder. Their knowledge of country; their powers of observation and deduction; their watchfulness, endurance and ability to take care of themselves under all circumstances, made them seem at times like superior beings from another world. No wonder our soldiers could not catch people like these. If our little army of 25,000 were composed of such men, and animated by the proper spirit, it would be unconquerable by the best army now existing in Europe.

The command exercised over the scouts depended mainly upon the moral influence of the officers. Eager as they

seemed to be to do their duty, care was taken to avoid trying to force them into ways foreign to their nature and training. They fully understood their work, and except to exercise a general control and supervision over them, no attempt was made to interfere. The temptation to be unduly meddlesome was, however, not strong, for most of the scouts had been on the war-path, which meant that many white men had been killed by them. They were, however, treated with perfect confidence, and soon little thought was given to their former bloody records.

The methods of camping and marching were in conformity with the character of these troops. They cooked their own food without the necessity of supervision, and, on going into camp, they always voluntarily took such precautions as circumstances made necessary. They were ready to start by sunrise, or sooner, and when not in a dangerous neighborhood, much liberty was allowed them, so that they scattered on foot in hunting parties; at the same time they were sure to find signs of the hostiles if the latter were anywhere in the neighborhood. The officers and chiefs of scouts, on mules or on foot, accompanied the scouts to see that no depredations were committed. This free life had many charms, despite the hardships often accompanying it. All supplies and baggage were carried on the pack-mules, these being divided into three big trains, under Daly, Hayes and Rover, forty-five packs to each train. The aparejo was, of course, the pack-saddle used; each mule, when in good condition, could carry comfortably about 250 pounds. Each train was complete in itself, with its "boss packer," its cargador (the man who arranged the loads and kept everything in repair), its blacksmith, its cooks, and its bell horse. Seven other men belonged to a train, but no matter what a man's position was—boss or cook—he was expected to help pack. Most of the mules were seasoned to mountain work and the packers were old hands, many of them having spent the best years of their lives in the Government service. There was very little room for improvement in these trains; if the Government could always count on service as efficient as that rendered by the packers in this campaign, there

would be no cause for complaint. The trains have now all been broken up, many of the mules sold, and most of the packers discharged without reward or recognition. It is a pity that these schools for the difficult art of packing no longer exist. Some day, perhaps even in a civilized war, there may be cause to regret it.

From the starting point at Fort Apache the command went to Fort Bowie, Arizona—General Crook's field headquarters—where it was inspected by General Sheridan. After a few words of encouragement from him and from General Crook, we started on a night march to the Dragoon Mountains, Arizona, as a band of hostiles had been reported in that neighborhood. After a week's scouting, no trail being found, we crossed the Mexican line into Sonora on the 6th of December, heading towards Fronteras. From there we went south to the mining town of Nacosari, and then, leaving all roads, struck into big mountains on the west slope of the Sierra Madre, where there was plenty of hard work. An abundance of deer made the fare good, however, and compensated us for other hardships. Emerging from the mountains we found ourselves in the valley of the Barispe, a tributary of the Yaqui, and camped at the town of Huasabas, where groves of orange and lemon trees showed the tropical nature of the country. The fruit helped at the Christmas dinners, which otherwise would have been almost wholly made up from Uncle Sam's army ration. The valley of the Barispe was fertile, but the inhabitants did not appreciate the advantages nature had given them; they were a miserable people, living in mud huts almost bare of furniture, and wanting in every comfort. Wheeled vehicles were unknown; the burro did the freighting for the country. The Apaches had long been a terror, but the Mexicans seemed to regard them as a natural evil not to be gotten rid of by any effort on their part. There were no doctors among them, and during our stay they availed themselves of the services of our kind-hearted surgeon, who was never idle, receiving, however, as fees, only a few oranges or a cheese, sometimes a welcome bottle of mescal.

Huasabas was the scene of our first serious trouble with

the Mexicans. One of the scouts, who was drunk, but unarmed, was so badly shot in the face by a soldier that he had to be sent back home. At such times the exertions of the officers alone prevented bloody fights; their duties were dangerous and not at all pleasant.

There were plenty of rumors of outrages still farther south, so we crossed the mountains in that direction, and came to Bacadehuachi, a tiny town for such a name. Here, hid away in these wilds, was a crumbling mission, one of those monuments to the wonderful old priests who, ages ago, braved hardships and dangers to plant their religion among the Indians; sometimes accomplishing much, their zeal too often brought their lives to an end in torture. The priests of that day must have been experts at solving the labor question, to have gotten out of the ancestors of the lazy people we saw the work necessary to build this big brick church with its bells, its towers and its wings.

The Apaches had left their mark all through the country we were now traversing. The abandoned and ruined ranches, and occasionally a deserted village; the way in which the people spoke; the dismal stories they told, and the scars they showed, and the general desolation which prevailed in this fertile and well-watered, though rough country, all bore witness to the curse these Indians were. Nacori, the next village, was surrounded by a wall to protect the inhabitants, and the little fields hugging the town showed that they did not dare to go far from it.

Our hardest work was now at hand; the country was getting rougher still, and there was no doubt that the hostiles were not far away. The surplus rations were stored in Nacori, and Lieutenant Faison was sent to Lang's Ranch, N. M., with two pack-trains for more. Taking Daly's train, Captain Crawford, marching at night, went into camp about twenty miles to the south of Nacori, and sent out a small party on foot to explore. This party having returned without seeing any signs, it was decided to leave the pack-train in camp with a small guard, and to strike out on foot for the rough country near the forks of the Yaqui, where the Mexicans had reported Geronimo's headquarters to be located.

Safe in this retreat, where they had never been followed, the Indians had been sending out small parties to kill and to steal. Twelve days rations and one blanket for each officer and scout were to be packed on a few of the best mules, the three packers accompanying them being the only men allowed to ride. When the scouts found that we were to walk with them, they begged hard to be allowed to go alone, as they felt certain that the white men could not keep up. But the Captain would not submit to such an arrangement, and they reluctantly gave up.

Before starting, there was a big medicine dance, at which old Nah-wah zhe-tah for the first time unrolled the sacred buckskin which he had worn over his shoulder since he had left Fort Apache. The ceremonies were impressive, even to the white men. So thoroughly in earnest were the Indians that the solemn dances and marching, the kneeling before the sacred buckskin as it was presented to be kissed, and the old medicine man's blessing of the arms, seemed not meaningless to us as we looked on in silence. With Noche and a picked band, equally divided between the Chiricahuas and White Mountains, leading, we started out on the 3d of January, 1886, and camped that night on the Haros River, a large tributary of the Yaqui. On this and the following marches the advance guard marched far ahead, thoroughly reconnoitering the country; immediately preceding the main body were a few good scouts; Captain Crawford always led the main body, and allowed none of the scouts in it to get in front of him. Fording the river in the morning, we were toiling up and down the steep hills beyond when, about six miles from the river, a small trail of Indians was struck, and soon after, the trail of a big band traveling east. Many tracks of ponies and cattle showed how successfully they had been marauding. From some slight sign the scouts declared that Nachez was with the band, which meant that Geronimo was there also. Cautiously as we had been advancing before, it was now necessary to be still more careful, for we were on the trail of Indians whose vigilance never relaxed, even here where they had never been followed. The extreme caution of these Indians was shown by the location of

their camps, which were always high up on some well guarded point, whence all the approaches could be watched. It mattered not to the bucks who selected them how many miles the poor squaws had to carry wood and water. The way the trail ran, concealed as it ascended the hill and exposed to view as it descended, was another evidence that they did not intend to be caught napping. This necessitated many a weary detour, as their watchful rear guard might at any time discover us if we followed the down hill trail.

In the hope that the Indians would establish a permanent camp, we hustled on, thinking it possible that the scouts, as expert as they, might be able to surprise them. From the time we started on this foot scout, the hardships had been great. The country was so rough that it seemed nature must have made a special effort in that direction. Wearing moccasins whose thin soles allowed the feet to feel every stone of the million that lay in the path, we had to keep up with our Indians, who had been climbing mountains since they were babies, and whose ancestors had for ages been mountaineers. The days were fairly warm, but the high altitude made the nights bitterly cold. Without shelter and limited to one blanket each, and with no fires allowed, sleep was almost impossible to all except the scouts, who slept in long rows, with one's head at his neighbor's feet, and seemed tolerably comfortable. We could not start till the advanced scouts had thoroughly reconnoitered the country, so that it was always late in the day when we broke camp. The marches did not end till late at night, when camp, cheerless as it was, was at least better than the endless climbing of mountains or falling over rocks. Often we had to follow some cañon in which lay immovable boulders, made slippery by the water which had once flowed over them. Going through them in the dark, it seemed as if we would surely break our necks or dash out our brains, so often did we fall.

Deer were plentiful, but none could be killed for fear of betraying our presence. The blouses were turned so as to expose the gray lining, which was less conspicuous than the blue side, and all prominent marks about the person were discarded. When it was necessary to make fires for cooking,

the scouts took charge; in the day time small smokeless fires were made from very dry wood; at night the fires were hid away in some gully or depression, so that they could not be seen a few yards away. In crossing ridges, care was taken never to expose the body against the sky line. Whether in camp or on the march the scouts exercised a constant watchfulness, and no precaution that could possibly be taken was ever neglected. Long habit had made these things come naturally to them. Watching the scouts, one could not help thinking how hopeless was the attempt to catch people like them with men trained and equipped in the manner of our own soldiers. The Apache seems to see everything and to know everything when in the field; no matter how dim a trail may be, it may be made by a few moccasined feet passing over rocks, he follows it by sight as easily as the good hound follows his prey by scent. Soldiers, I mean officers as well, nearly always scorn the precautions that Indians never neglect. Many a time the pursuer has found himself only too glad to escape from the little band he had started out to destroy. We made but few miles a day, so many halts had to be made to reconnoiter, the country was so rough and night marching so difficult. Cattle from which only a few pounds of meat had been cut were often found lying on the road. On the 6th, the remains of a number were found, the meat having been carried off, and no more tracks were seen. On the 7th the trail crossed the Haros, and we found ourselves in that terrible country between the Haros and the Satochi, so appropriately called by the Mexicans "Espinosa del Diablo," or "Backbone of the Devil."

On the 9th of January the start was made about noon, and we had already made a good day's march when at dusk, Noche reported that the hostile camp had been located. Fearing that we would be discovered if we delayed, it was decided to march all night and attack at daylight. The mules were far to the rear and had to be left behind; so, with empty stomachs, we began this toilsome march that was to test the strength of the scouts no less than that of the white men. The doctor remained with the packs, as did also the old interpreter, Concepcion, who was worn out

and unable to keep up. His absence was afterwards a source of much trouble. During all this dark night we climbed steep mountains covered with loose stones, or struggled through gloomy cañons, following our Chiricahua guides, who seemed perfectly at home. Sometimes we almost despaired, and felt like succumbing to the fatigue that nearly overpowered us; but at such moments the thought of what dawn should bring buoyed us up and revived our drooping spirits.

At length, just before daylight, we drew near the high, rocky point where the camp was said to be, and the command was divided so as, if possible, to surround it. After some delay we crept forward, scarcely breathing as we moved; and, to some of us, there came strange sensations, as in the dark, still night, we thought of the isolation of our position, for, in this wild and unknown region, we were led on by allies who had often proved how crafty and bloodthirsty they could be. But success seemed almost assured, and exultation was taking the place of these feelings, when some burros in the herd of the hostiles began braying and, like the geese of ancient Rome, aroused the camp to a sense of its danger. Some of the "broncos," running out to try and carry off their stock, were fired upon by the scouts, who then rushed into the rocks near by and opened a lively fusillade, accompanying it with their shrill cries of defiance. Answering shots came from the camp, close at hand in a cluster of large rocks, that we afterward saw formed a stronghold capable of defense by a very few men. The behavior of the scouts at this juncture was very disappointing. A rush into the camp would have insured the capture of the squaws and children at least, probably after a bloody fight. But they scattered through the rocks and, deaf to all appeals, allowed themselves to be held in check by the fire of the hostiles, who finally escaped in the darkness, leaving behind all their stock, provisions and blankets. The officers could do nothing, for Apaches always fight in their own way, and instead of following one who tries to lead them to a charge, they look upon him as a fool and unworthy of confidence. In this case it was impossible for us to tell friends from foes;

every time I myself attempted to shoot I was stopped, because I was about to shoot a scout; at last, in desperation, I fired two shots at some figure dimly seen. Who he was I never knew, for I missed him.

In this affair one "bronco" was slightly wounded. We suffered no casualties whatever. Soldiers in the place of the scouts would have behaved much better, but then a sufficient number of soldiers could never have been gotten so close without being discovered. Daylight before the end of the skirmish might have changed matters somewhat, but when there was light enough to see, the band had all escaped and were scattered through the mountains, and the scouts, worn out by eighteen hours continuous marching, were no longer able to follow. It would have been useless to do so anyway, for once aware of our presence there would have been no chance of catching the hostiles until they had again settled down.

From what I saw of the Chiricahua scouts on this occasion, and subsequently when we had talks with the Indians, I am satisfied that, though they fired a good many shots, yet they had little desire to kill, in spite of their wish to see the war ended by the surrender of the renegades. These men worked too hard and were too faithful under temptation to give any reason to suspect them of treachery. But it does not seem unreasonable to believe that they did not strongly desire the death of people belonging to their own tribe. They had not only been their friends, but some were relatives. Moreover, in their eyes the hostiles had committed no crime, for they themselves had likewise been on the warpath. They wanted peace, but not at the expense of much bloodshed. The White Mountain scouts were too much afraid of their Chiricahua brethren to oppose them, so they have not been considered in the above statement. It was one of the many difficulties of General Crook's task that, at that time, there seemed to be no one except these Chiricahua scouts who could follow the hostiles to their retreats in this unknown region.

Disappointment at the result of the fight was, however, soon forgotten in the search for food. Supplies were not lacking, but the white men, exhausted by their long march

without food, found little to tempt them in the lean horse meat without salt, and the roasted heads of mescal which lay around the abandoned camp. The meat, toasted on ramrods, was about as satisfactory as pieces of gunny sack, while the sweetness of the mescal soon produced nausea. The exhaustion of the command was shown by the way the men threw themselves anywhere on the ground to sleep. Some scouts were sent back to bring up the party with the pack-mules, but they went to sleep on the road and nothing was heard of the train. In the afternoon an old squaw came in with a message, saying that Nachez and Geronimo wanted to have a talk outside the camp. From what she told him, Captain Crawford believed that they were ready to surrender; the correctness of his belief was shown by statements made by these chiefs to an officer eight months later, when on their way to surrender to General Miles. The absence of the interpreter, however, compelled a delay, and the meeting was appointed for the next morning. The squaw reported that her people were without food, begged some for herself and departed, leaving us very hopeful for the morrow. Having now nothing to fear from the hostiles, and being worn out, the scouts relaxed their usual vigilance, and all lay down to sleep by the side of the big fires, which had been built to keep off the bitter cold of the night, which caused much suffering. All the white men and most of the scouts were without blankets or covering of any kind. A heavy fog made the morning of January 11th very obscure and, just as it was getting light enough to see, the Indians shouted out that Mexicans were coming. Lieutenant Maus, Chief of Scouts Horn and I, who were awake at the time, ran forward to prevent any trouble, at the same time calling out who we were. But shots from the advancing party drove us into the rocks, where the scouts had taken refuge. Some of them had commenced returning the fire, but this was soon stopped.

Our camp lay on the left bank of the Haros River, which was in sight, and was about fifty miles southwest of Nacori. The ridge on which it was located fell off abruptly to the river side in a high, rocky bluff, along the edge of which ran a line of big rocks; outside of these rocks was an open

space containing a few scrubby trees. We had nearly all been sleeping in this open space, but the firing caused it to be speedily vacated. In the dim light we could not tell who our assailants were, but an idea soon began to prevail that they were Major Davis's scouts who had taken us for hostiles. The thought of being killed by our own friends was agonizing, and we loudly called out the names of the officers on duty with Davis's battalion. In a few minutes the firing ceased and the voices of Mexicans were heard crying out. Horn answered in Spanish, and a small party appeared in the open space near us. It had now grown light and the white men showed themselves, while Horn called out to the leader of the band, then about twenty-five yards from us. The scouts still lay hidden in the rocks; they did not trust Mexicans.

Captain Crawford had been asleep when the first alarm was given, and it was not thought necessary to stop and wake him. When the firing began he, like the rest, ran into the rocks. He now appeared, standing on a high rock, conspicuous above every other object. It is impossible to tell how he viewed the situation, though he must have known that in so exposing himself he ran a great risk, no matter under what circumstances the attack had been made. Thinking, no doubt, that by exposing himself to full view in his uniform, he might save us from being again attacked, he did not hesitate, but climbed the rock and stood waving a white handkerchief in token of peace. In a moment a single shot rang out, followed by a volley. Crawford fell, struck, the scouts said, by the single shot. The Indians returned the fire and, for several minutes there was a hot fight. Horn was wounded by the leader of the Mexicans, who was dropped dead where he stood by a Chiricahua named Bender, who lay at our feet.

The fall of Crawford was not known at first to anyone except some scouts near him. Going to him, as soon as the news became known, he was found lying senseless at the foot of the rock with a ghastly wound in the side of his head, and his brains scattered over the ground near by. Some Indian had bound his head with a handkerchief, and

and unable to keep up. His absence was afterwards a source of much trouble. During all this dark night we climbed steep mountains covered with loose stones, or struggled through gloomy cañons, following our Chiricahua guides, who seemed perfectly at home. Sometimes we almost despaired, and felt like succumbing to the fatigue that nearly overpowered us; but at such moments the thought of what dawn should bring buoyed us up and revived our drooping spirits.

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Our camp lay on the left bank of the Haros River, which was in sight, and was about fifty miles southwest of Nacori. The ridge on which it was located fell off abruptly to the river side in a high, rocky bluff, along the edge of which ran a line of big rocks; outside of these rocks was an open

space containing a few scrubby trees. We had nearly all been sleeping in this open space, but the firing caused it to be speedily vacated. In the dim light we could not tell who our assailants were, but an idea soon began to prevail that they were Major Davis's scouts who had taken us for hostiles. The thought of being killed by our own friends was agonizing, and we loudly called out the names of the officers on duty with Davis's battalion. In a few minutes the firing ceased and the voices of Mexicans were heard crying out. Horn answered in Spanish, and a small party appeared in the open space near us. It had now grown light and the white men showed themselves, while Horn called out to the leader of the band, then about twenty-five yards from us. The scouts still lay hidden in the rocks; they did not trust Mexicans.

Captain Crawford had been asleep when the first alarm was given, and it was not thought necessary to stop and wake him. When the firing began he, like the rest, ran into the rocks. He now appeared, standing on a high rock, conspicuous above every other object. It is impossible to tell how he viewed the situation, though he must have known that in so exposing himself he ran a great risk, no matter under what circumstances the attack had been made. Thinking, no doubt, that by exposing himself to full view in his uniform, he might save us from being again attacked, he did not hesitate, but climbed the rock and stood waving a white handkerchief in token of peace. In a moment a single shot rang out, followed by a volley. Crawford fell, struck, the scouts said, by the single shot. The Indians returned the fire and, for several minutes there was a hot fight. Horn was wounded by the leader of the Mexicans, who was dropped dead where he stood by a Chiricahua named Bender, who lay at our feet.

The fall of Crawford was not known at first to anyone except some scouts near him. Going to him, as soon as the news became known, he was found lying senseless at the foot of the rock with a ghastly wound in the side of his head, and his brains scattered over the ground near by. Some Indian had bound his head with a handkerchief, and

the man who had shot him was already lying dead not twenty five yards away. The captain was given such aid as was possible at the time; and then our attention was turned to the puzzling position in which we were placed.

The command had fallen to Lieutenant Maus, the next in rank, who had to choose between continuing the fight or terminating it as soon as possible by acting strictly on the defensive. The latter course involved two considerations. The first was that, if the Mexicans believed us to be hostile Indians, we could defend ourselves until we could make them understand who we were. On the other hand, if they really knew us, we could demonstrate to them our ability to defend ourselves and show them how useless it was to keep up the fight. There were many good reasons why the offensive should not be taken, the principal one being the doubt that then existed as to whether we were being attacked by mistake or not. The first attack seemed to be due to a mistake. During the progress of the second, there were no means of determining whether the mistake still existed or not. As one looks back at any affair, things have a different appearance to him, and he wonders why he did not see them in their true light at first. In this case many incidents tended to show that the Mexicans were not acting in good faith. But at the time little thought was given to that; for we were under fire, and the situation was so unexpected and puzzling that every point was not given due weight; in fact, outside of one's individual experience very little was known. Afterward, when the different stories were put together and the ground looked over, calm reflection made us believe that the second attack was no mistake. It was not until nearly two days after the fight that the treacherous capture of Lieutenant Maus and the interpreter, Concepcion, removed all doubt.

The situation was such, however, that had we then certainly known that we were being intentionally attacked, there would have been little choice about our course. The Mexicans were evidently much superior in numbers—two to one it turned out. They occupied a line of hills from three to five hundred yards distant that commanded the ground between us and afforded them a very strong position. At this time we were so far down in Mexico that it afterward took three weeks marching to get us back to the border. The Mexicans were in their own country, and our only dependence was on the scouts, who were so hated, both as Apaches and also as American soldiers, that there would have been no difficulty in securing reinforcements against them unless some amicable arrangement was made. We were entirely without rations and almost without ammunition; to have tried to fight our way out of Mexico would have meant that the command would have had to scatter and make its way home as best it could. This would have made it necessary to abandon our wounded, and probably all the pack trains that were scattered through the mountains on their way to us. Had we not made peace there could have been little doubt that the Chiricahua scouts would have joined the hostiles, who were then in sight across the river looking on.

During the fight a hurried consultation was held between Lieutenant Maus and myself, in which these points were touched upon. We did not feel sure of the meaning of the conduct of the Mexicans; we had not given up the hope that the hostiles would surrender after all, and we did not wish to abandon the attempt to bring them in. So much had been sacrificed that we felt it our duty to continue the effort, especially as there still remained a hope of success. These reasons have been given fully, because there has been some criticism on the conduct of the command in this affair among both army people and civilians, who seem to think that all we had to do was to attack the Mexicans in their position and avenge Crawford's death. Their judgment has been hasty and unjust. They have not put themselves in the place of officers suddenly called upon to face a situation unparalleled in the history of the army; in which there lay no alternative between the course adopted and ruin; and which would have involved the betrayal of the trust reposed in those officers had they tried, with the knowledge they then possessed, to assume the role of avengers.

Our course determined upon, there still remained the task of conducting the defense, at the same time controlling

the fire of the scouts and continuing the calls to the Mexicans to stop firing. The party that had advanced so near us was soon disposed of; but the main body kept up a heavy fire from the hills, and several attempts were made to flank us, which were, however, frustrated by the scouts. We were strongly posted among the rocks, but the position was entirely open in rear, and would have been untenable had the Mexicans succeeded in getting a party on that side. The shots finally becoming less frequent, we could plainly hear their voices as they called to each other, and their failure to answer us began to be very suspicious. Finally they replied and, when the firing ceased, Lieutenant Maus and Horn went out to meet a party half way. An understanding being reached, quiet was restored, and we looked after our wounded. Captain Crawford's case was seen to be hopeless; his wonderful vitality alone prevented his instant death. On examination, one arm was found to be broken near the shoulder, the result of his fall from the rock. One scout was found to be badly wounded through both legs. Two others had slight wounds. Horn was suffering from an ugly flesh wound in the left arm. We had been very uneasy about the party with the mules, but they arrived soon after the close of the fight, bringing rations and other supplies. They had been on the way to us when the firing began, and were then close to the Mexican position. The packers and scouts refusing to proceed, they had taken refuge behind a hill and, fortunately, had not been discovered.

Parties of Mexicans came over to carry off their dead, four of whom lay in our camp, their major and a lieutenant being among them. It is not known how many more were killed. The scouts always claimed at least seven in all. Five men were known to be badly wounded, as Dr. Davis dressed their wounds; some of them he thought would probably die.

Looking over the ground and hearing the different stories, we saw that there was little cause to believe that the Mexicans thought we were hostile Indians when they shot Crawford. The man who fired the fatal shot was just twenty-eight paces distant; the Captain had a brown beard and wore his uniform, so that he looked altogether unlike an Indian.

The experiences of Lieutenant Maus, Chiefs of Scouts Horn and Harrison, and of Hospital Steward Nemeck, likewise confirmed us in our belief. But all lingering doubts were dispelled by the conduct of the Mexicans on the 12th, when they treacherously captured Lieutenant Maus and Concepcion, and compelled them to ransom themselves with six mules. That plunder was their object in attacking us is certain. They saw only a few white men, and the fire of the scouts was so weak at first that they had no reason to believe us a large party.

Our assailants were not regular troops, but were a body raised in the State of Chihuahua to fight the Indians. They had been seventeen days on the road, and had with them no animals except a few burros. Their rations and blankets were carried on their persons. They were a hard looking set; dressed in cotton clothing and wearing moccasins, some of them rawhide sandals, they had little appearance of being soldiers; but at the same time they seemed well suited to following Indians in a rough country. A temporary, and perhaps irresponsible organization, they would, if successful in killing us, have had little trouble in evading all responsibility for their acts. The locality of their crime would have made the detection of the perpetrators almost impossible. Their version, as published in official reports, shows that they would not have been wanting in excuses. They sturdily claimed that we were in league with the hostiles; that they had been following our trail for days, and that the mules (all marked U. S.), taken as ransom, had been stolen by the Indians from Mexicans. With regard to their following us, it is only necessary to say that their trail, which we saw, came directly from the east, while ours came from the west; they had never followed our trail at all, but had been guided to us by the light of our fires.

It has been said that the hostiles were spectators during our fight with the Mexicans. How they must have enjoyed it! As their enemies were engaged in deadly strife before their eyes, it must have seemed that Providence was looking out for them, and no doubt crafty old Geronimo took advantage of the situation to work upon their superstitious

feelings, and to encourage them to follow still further their bloody career. It must strike us, too, that it was a strange mischance that caused these two commands to meet at this particular time, and in a country perhaps never before traversed by similar parties. Different as they were, either might have done good work but for the presence of the other.

The experiences of the expedition after the fall of Crawford were strange and interesting; but we will not attempt to tell of them, for the story is long and complicated. We cannot, however, lose sight of it for a few days longer, though nothing except a brief and incomplete outline of events will be attempted. The camp was moved a few miles on January 13th, and no more was seen of the Mexicans. Negotiations with Geronimo were reopened, which resulted in the surrender of part of his band, and the promise of the remainder to meet General Crook on the border, which they did in March. For many reasons the command was obliged to return to the United States, and its march was continued till the supply camp at Lang's Ranch, N. M., on the boundary line, was reached on February 1st. Orders were given by General Crook for a similar withdrawal of Major Davis's battalion from Mexico and, for a time, operations were suspended.

The transportation of our wounded was a serious trouble. Incessant rains not only increased the discomforts already existing, and caused much actual suffering on account of the lack of shelter and clothing, but it also made the rough country almost impassable. The litters, composed of canvas stretched between bundles of canes, had to be carried by hand; the canes were so pliable that the litters were clumsy affairs, requiring eight men to carry one of them. Then the moccasins went to pieces in the wet and left many of us barefoot in this stony region. In a few days, however, Daly's train met us and brought us more comforts. A new litter was then made for the Captain, and as pine poles were now available they were substituted for the canes, and one end of the litter fastened to a mule; on account of the rough trail the other end was still carried by hand. The badly

wounded scout was rigged upon a mule and caused but little more trouble.

A week went by without any sign of consciousness or of suffering on the part of Captain Crawford who, gradually growing weaker, on the 18th of January passed away so quietly that the end was not perceptible to those watching by his side. Four days later his body was deposited in the dreary little burying ground at Nacori; the hope that this was only a temporary resting place was soon realized by the action of General Crook in sending a suitable party to bring his body back to the United States. He was finally buried at the home of his brother at Kearney, Nebraska, where a monument erected by his brother officers now marks his grave.

The killing of Captain Crawford gave rise to much feeling against Mexico and some talk of war upon that country. The matter was taken up by the State Department, but was finally dropped without action on the part of our Government. The reasons for this course were doubtless good, but it is much to be regretted that they have never been made public; for there is a belief that our country has allowed one of its best officers to be murdered while doing his duty, and has failed to take steps to punish his assassins.

The attack of the Mexicans not only caused the death of a valuable officer, but it also prolonged the resistance of the hostiles for eight months. There is little doubt that they would have surrendered in January but for this affair; it was September before they finally did so. In his report General Crook says: "There is reason to believe that had he (Crawford) lived, he would have received the unconditional surrender of Geronimo's and Nachez's bands;" and again: "He was thoroughly known to all the Indians, and had their confidence. It is believed that he was the only white man besides myself, who could have induced the hostiles to surrender." When we reflect that after January probably more than a hundred people were killed by these Indians, and when we also consider the incalculable losses in property, both to the government and to private parties, and remember that during all these months no one was safe

in a region containing hundreds of square miles, we can realize that the importance of that little fight is not to be measured by the number of slain.

It would be well if all of us could keep in our minds the memory of this devoted and chivalrous soldier, whose whole life was one long sacrifice, and whose death was the direct result of his efforts to save others. Such characters are not common. Let us try to remember this one as our ideal of what a true man should be. Though we may never be called upon to face difficulties of the kind that confronted him, yet the elements of character that enabled him to overcome them and to win the love and respect of all who knew him, will tell in all walks of life; and though such men sometimes fail, yet the name they leave behind them is worth far more than the greatest success.

THE MISSION OF THE SERVICE MAGAZINES.

By Lieutenant HUGH JOHNSON, First Cavalry.

ONE, a few, perhaps a majority, possibly even all, of the following assertions will be admitted by students of military affairs:

(*a*) The army is too small.

(*b*) The army is rigid and inelastic.

(*c*) Under our political conditions it should be the most elastic and facile system in the world.

(*d*) Under modern conditions, trained officers and men and adequate material of war must be on hand before a conflict begins.

(*e*) We have none of these desiderata on hand.

(*f*) War is always possible, even for us.

(*g*) A certain war is even probable.

Or for the sake of condensation and conciseness,

(*a*) The United States is unprepared for war.

(*b*) War is not a remote possibility.

In the present stage of civilization, it is generally admitted that war cannot be eradicated, therefore the state of affairs asserted in the second sentence cannot be changed. But the state of affairs asserted in the first sentence can be changed.

In order to change it, it is necessary to examine it very closely, and to arrive at a conclusion as to why it exists—why this nation *is* unprepared for war. Having determined the causes for this state, it is then necessary to eradicate or change them so that a new state—a state of preparedness may exist.

For professional men, who have devoted much time and thought to this subject, it is not necessary to proceed to an

exhaustive study of the history and causes of the military policy of the United States. It is generally admitted that the lack of an adequate defense is due to a traditional unwillingness to expend money for so costly a national possession. Of course the cause goes a step deeper than this, for Congress is obliged to appropriate funds to any reasonable extent for any pressing national necessity. That deeper step brings us face to face with the two fallacious assumptions upon which rests our policy of non-provision of defense.

1st. Our isolated geographical position absolves us from the onus of preparedness.

2d. A large standing army is dangerous to the liberal institutions of a free people.

If these two statements are correct, then the condition of affairs is as it should be and we need make no preparation for war. By the first of the statements the army is "reasoned" out of countenance. Upon the second rests its traditional unpopularity. Because of these two assumptions we are unprepared.

But if these statements are incorrect, then they constitute false national policy, that is certain to reap—as we believe it has already reaped—a harvest of national disaster, and it is the duty of some person or set of persons to explode them as wicked and dangerous theories—to cancel them and their long train of consequences from the policy of the United States.

They have existed for a hundred years triumphant over various half-hearted attacks upon them, and yet if they *are* false, they are eradicable.

Having traced unpreparedness to its eradicable causes, there remains to ascertain upon whom falls the duty of eradicating them. On whom then falls the duty of combating these statements and even of replacing them, perhaps as follows:

1. Our geographical position gives us an advantage of from five to twenty-five days, in defensive war, but handicaps us by that length of time for offensive war, and in no case renders our position impregnable or even safe.

2. Our military history has shown that an adequate standing army is the *only* efficient safeguard of the liberal institutions of a free people.

A cursory glance through the Constitution and history of the United States would give us this answer:

The duty and responsibility of national defense is the province of the statesman.

But is this answer the correct one? Is not this conclusion false?

Under our system of government, after all is said and done, Congressmen are but the representatives of the people. They reflect only the animus and the opinions of their constituents. For this reason they have sometimes even been accused of unfaithfulness to their own opinions and called cringing servants of a majority of their constituents. But is this not as it should be? Was not the government designed so? If, for instance, a representative believes in the restoration of the canteen, as a lasting benefit to the army, and votes against it because he knows that a recorded vote for it will stir up dissension in his own district among people who perhaps do not understand the merits of the case as well as he—is that man to be censured for bowing to a system that was designed by the framers of the Constitution?

If popular tradition and political inhibitions cause the greater number of people in the congressional districts and States of the Union to cry down army appropriations and legislation, is any statesman of any condition whatsoever to be blamed for exercising his proper functions as a representative of the people who placed him in office? There can be little question here; the conclusion takes us a little nearer to the true seat of responsibility and very near to the apparent one, and we should say at this stage that *the duty of providing an adequate defense rests with the people of the United States.*

But is this conclusion the true one?

For instance, are the people responsible for the existence of proper laws promoting the public health, for sanitary regulations, or the enactment of quarantine laws. Is not rather the medical profession responsible? Do not the statutes

concerning purely technical points of law rather reflect the integrity of the lawyers than that of the people? Are not mining laws evolved from the experience of miners, navigation laws of sailors, forestry laws of specialists in forestry? True, through their representatives, the people enact those laws, but after all, are not the specialists and not the laymen responsible for them? If it is so, it is hard to escape the conclusion that *the duty of providing and maintaining an adequate and efficient system of national defense that shall fit our peculiar conditions of government, meet our peculiar demands, and of itself remain an institution popular with the people of the United States, rests with the professional soldiers of the army, and with them alone.*

If this conclusion is correct, and it can not be escaped, it would follow that the same duty had existed for a hundred years, and if it is admitted that for a hundred years the national defense has been inadequate, there exists at least an argument for *some* change.

According to this view, there is, to say the very least, a work prepared for the army.

It would appear that, on a small scale, if the army as it exists is rigid in construction, not designed for the assimilation of great masses of raw troops that shall swell it to the two or three or four or five hundred thousand men with which modern battles must be fought, or to the million men that must decide the wars of this latter day, if it is not sufficiently officered for mere peace time demands, and not at all prepared to furnish men of technical education to train and fight new men in time of war; if there is not on hand equipment for those unnumbered new men, or even the skeleton machinery of that great army, if—but the ifs represent all the criticisms of the present system that are frankly admitted in the army to-day—if the ifs can be affirmed, then, since nearly all those things mentioned are matters of strictly internal administration, with which even the most obstreperous law giver rarely concerns himself, it is hard to see why the remedies were not applied years ago. Those things at least could have been considered and improved within the army *itself*, and without an active campaign before Congress.

Of course, efforts looking toward this end have been made again and again, but the very fact that they produced no results, shows that they were half-hearted efforts. Also for them, it might be said that with the means at hand the *proper* changes could not have been made and it was more expedient to wait (a hundred years, it seems) until sufficient means were at hand. But a close examination would seem to reveal the fact that our present system is so repugnant to our national institutions that no amount of mere manipulation of it as it stands will produce the desired result.

In its hundred and thirty-two years of existence, this government has not evolved a true, fixed military policy, but (and this supports the contention that the army itself is responsible for its own condition) neither has the army evolved a military policy. It would be fairly safe to say that in no man's mind is there any very clear and lucid idea of just what the army of the United States *ought* to be. No well defined and matured plan for the organization of an American army that could meet all demands of peace and war, remain of itself a popular institution (by which attribute only can it hope to come into being or to exist, once created) and yet not diminish in efficiency. It would be absolutely safe to say that the army has not arrived at the conception of any such ideal.

The organization of armies not yet created *is* clearly and well defined, but there is absolutely no idea of the source of their existence. All the faults of the present system are admitted, and yet nothing is advanced to replace it. If the army is given a chance to expand, it expands by the addition of batteries, regiments or companies—all according to the old and condemned system and all added like lean-tos built on a rambling and decaying old farm house to fit the periodical family increase.

These additions too, are conceived and consummated within the arm of the service that happens at the moment to have zeal enough to demand and work for them. A foreign-designed cap is clapped on an American head where the peculiarly American and admirable campaign hat sat so well before, a battery is tacked on to the army here, a small

change in policy planted there—not because each one of these things is a step toward the final aim of an accepted and well conceived policy, but simply as the fad of a few persons, or the expression of the ambition and partisan feeling of an arm of the service.

How can the nation evolve a military policy when the army itself has none? And why has the army none?

The tendency of any great system for the utilization of individual effort for the accomplishment of a great and continuing purpose, must, among the cogs and ratchets of the machine, be toward apathy—apathy toward the aim of the system in the big. The men who constitute those cogs and ratchets, necessarily lead a narrow and specialized existence. Their lives are fixed in well defined and scarcely changing orbits, and their horizons are limited to the work in hand, until the great purpose of the system (and therefore of their own efforts) is entirely lost to sight.

Such a system is the army of the United States. Every custom and tradition, every law and regulation, every opinion expressed or implied, makes toward apathy. The steady, if slow, flow of promotion to brilliancy and mediocrity alike, the absence of other reward save virtue's own for work well done, the absence of punishment for aggressive indifference—all these things, while they are safeguards to a system of justice that no sagacious person could wish removed—nevertheless make for an apathy so dark, dense and profound that it is hard to escape the conclusion that the army itself, however praiseworthy may have been its work at crises, has failed in the primal object of its existence for a hundred and thirty years.

For after all, the very *raison d'etre* of men who have received the benefits and training of the military system, is that they may provide for the nation to which that system belongs a bulwark of defense.

A circular letter requiring the snap judgment of every officer in the army as to the purpose of the life he had dedicated to his country would not receive that dictum as the reply in ten cases. And there we see the narrowing horizon, and the blindness to the Great Purpose incident to living in

a machine. And there, too, we find the answer to the question—Why has the *army* no military policy?

The final aim of such a policy is as simple and seeable as all great principles. It can be expressed in as many words as a man's hand has fingers—the better perhaps that he may always have it before his eyes, *to provide adequate national defense.*

Some scheme must be evolved, criticised, clipped, assaulted and beaten into symmetry. Then it must be accepted in all its farreaching provisions by the service as a whole—the army must be unified upon it, and it must then be pushed aggressively to its consummation.

The first step of that campaign must be the eradication from the public mind of those two dangerous and wicked bits of fallacious sophistry, the geographical isolation folly, and the liberal institutions bogy.

How have these two stumbling blocks to national progress grown up? School histories, inherent national conceit, ignorance of world politics and conditions, false and hysterical "patriotism," but principally and in a word, *dense ignorance.*

Political histories tell little of the military aspects of historical situations—a battle is won or lost—the consequences are dilated upon as they affect the States, but the causes for the actual defeat are forgotten. School histories make this fault an aggressive argument in a false direction—especially American school histories, padded as they are, with complimentary, "brave boys in blue," "embattled farmers of Lexington" and "patriot defenders of hearth-stones," with a complete hiatus as to the disgraceful exhibitions that have so often splotched the national sheet.

This, if nothing else, engenders that deplorable American conceit by which one sturdy farmer with a good elm club is believed to equal a squad of "Dutch" soldiers, and that also grows from a popular ignorance of world politics that is happily disappearing as the country enters the congress of the powers. But all these things simmer down to an ignorance of actual conditions that it will be the duty of

the army to remove. There should be a bureau of the General Staff for this purpose alone.

Whatever may be the solution of the problem—perhaps it may be the creation of an immense skeleton first line, fully equipped for its war strength, with rifles and guns, and ammunition and wagon trains, and consisting of regular troops, with national volunteers, replacing the militia, as a complement to the skeleton organizations in regular service—national volunteers who exist in peace as in war, the whole with a full quota of trained officers and materiel—perhaps it will be, well, any other reasonable and feasible scheme—but whatever be the solution, it will never appear until the nation understands its necessity, and that will never happen until the army recognizes its aim, formulates a policy and lives up to it; and here is the *mission of the service journals.*

The task must never be believed an easy one. In the apathetic stage, these periodicals are prone to degenerate to the status of mere literary catch-alls for the spasmodic and ill-considered productions of some five or six thousand possible contributors, for dry and profitless rehashes of old and thread-bare themes, for the inconspicuous stories of times long since past and gone—in short they may reflect that deplorable enchanted palace in which we all drowse awaiting the touch that shall finally awaken some sleeping beauty within its gates.

Opinions of recognized leaders should be invited and insisted upon. Criticisms should be welcomed, but the policies once formed, should be aggressively supported and the carping contributions of the dissatisfied minority ruthlessly edited out of existence if necessary for the unity of the whole.

In those journals, and in them alone, lies the hope of change, but if, for the nation to have a military policy, the army must first evolve one—for the army to have a policy the journals must evolve one, well defined, brilliant and aggressive.

HOW MAY PUBLIC RESPECT FOR THE UNIFORM BE INCREASED.

By Captain M. E. HANNA, Third U. S. Cavalry.

MUCH has been written on this subject from time to time in the service journals, and many solutions have been suggested; yet it still remains an aggravating question. It is not because I think my scheme a complete one, or even a better one than others, that I propose it, but because I believe the problem one that requires for its successful solution the combined good points of many plans. It is foolish to expect to break down in a day a prejudice that has been taking root for years. If public respect is to be secured for the soldier in uniform, the united army will have to wage an intelligent and long sustained war against an unreasoning public prejudice, and the campaign should be begun by making a careful search for the causes of this prejudice.

To my mind the principal reason for the lack of respect for our uniform is the generally poor opinion the public has of the soldier. Now, is the soldier's conduct such as to deserve this poor opinion. Yes and no. Yes, in that the soldier occasionally offends against the laws and sensibilities of the community, as do the majority of other people in varying degrees. No, in that these offenses are no more frequently committed by our nation's defenders than by the civilian classes from which they are drawn, if indeed they are as frequently committed by the former as by the latter. But, in the one case, the whole class suffers; in the other, only the individual feels the consequences of his acts. Were soldiers treated likewise, there would be no cause for complaint. We ask for the soldier the same treatment that is accorded the civilian—no better, no worse. We do not claim

that all of the so-called cases of discrimination against our soldiers have been unjust. Occasions are repeatedly occurring when they should be denied the privileges accorded to well behaved civilians. In many cases they would have been denied the same privileges had they been in civilian clothes. Against such discrimination we have no cause for complaint.

But the public does not treat the matter in this way. It does not distinguish between the well behaved soldier and the disorderly one. There are not many of them; it is simpler to bunch them all together in one class and brand them thoroughly good or thoroughly bad. Since there are some bad ones among them, and since it is to these that the attention of the people has been repeatedly called, the latter label has been put on them all. By some this has been done deliberately—in cold blood. By others, and in this class are the great majority of our people, this judgment has been reached in a perfectly natural way. The public forms its opinion from what it sees and hears; from what it is told and what it reads. The soldiers do their work when in garrison; the public hears little about this and sees less. When they are out of garrison it is for amusement; and these are the occasions when the public sees them. The uniform makes them conspicuous. They cannot lose themselves in the crowd. Ninety-nine of them may be orderly and well behaved, but that fact passes unnoticed. The hundredth commits some indiscretion, and every paper in town devotes a half column to him with bold headlines; the public wants to hear about this; it helps to sell papers; so the occurrence is magnified, the account garbled; the public reads and judges innocent and guilty alike. John Jones, a civilian, walking up the street, meets a staggering soldier. "Another drunken soldier" is his comment. Continuing on his way, he meets one drunken civilian after another without the sight exciting any comment at all.

The soldier has not been given a square deal. He has been judged by a jury not in possession of all the facts. Public condemnation of individual soldiers may often be warranted, but damning the whole enlisted strength of the army because of the acts of a few individuals, is as wholly

unjust as it is common. Gradually there has taken root in the public mind the opinion that our soldiers are vicious. We know that opinion to be erroneous, ill-founded, and not warranted by their conduct. We believe that that opinion would be changed did the general public but know them as intimately as do their officers. But we are dealing with a condition, not with a theory, and it is not practicable for the public to know them thus intimately. It is worse than useless to tell the public that they are no worse than the majority of mankind; the public has formed its own opinion on that point in its own way; it thinks they are worse, and there is no reason to believe that it will cease to think so, so long as it sees the worst side of the soldier and does not see the other side—the best side, when they are at work, when they are at play enjoying manly sports with boyish enthusiasm, when they are in their reading rooms which are filled with clean, wholesome literature, or in the gymnasium, the dance hall, the Y. M. C. A. and the chapel. The one is being constantly thrust before the public's eyes, the other, it is barred by circumstances from seeing.

If we are correct in our statement of the opinion the public has of our men, and in our analysis of the reasons for its existence, the question at once arises: How is this opinion to be changed? The answer is not difficult to find. When the soldier appears in uniform among civilians his conduct must be above reproach. If the public cannot see the best in him it must not be permitted to see the worst. So long as the public is ready to condemn a score of our men because of the misdeeds of one, that one must be kept out of the public view. If the majority of our men are lawabiding, respectable citizens, let the public see them, but conceal from it the small minority of more or less turbulent characters that have brought all this disgrace upon the service. In this there is no thought of deceiving the public; the object is to place within its reach such convincing proofs of the general good character of our men that it will be compelled to correct its mistaken opinion.

The conclusion is forced upon us that if there is a remedy for this condition, it is to prevent the uniform from being

disgraced by the wearer. When the uniform is seen it must be on the back of a well behaved, self-respecting man. The thinking public can not be forced into an admission that a rowdy is a gentleman. Let the man treat his uniform and profession with respect and the public will treat him with respect. Let him disgrace it and he becomes an outcast. If the conduct of our men when in uniform is above reproach, that uniform will speedily become a badge of honor that will invariably entitle its wearer to every courtesy and consideration ordinarily accorded the well behaved civilian; it will become a guarantee for manliness on the part of the wearer, and discriminations against the soldier will be replaced by marks of preference.

After all, our soldiers are but men; they have the same temptations and are governed to a large extent by the same passions as are other men. Their conduct will be similar. As well expect water to run up hill as to expect the conduct of thousands of young men to be above reproach for an indefinite period. Normal civilians are not angels; neither are normal soldiers. From the very nature of things their temptations are greatest when they are on pass; yet this is also when they are most closely associated with the civilian. They have been robbed of their club, and appetites that were harmless in the canteen run riot in the grog shops and low dives. They are the victims of circumstances that conspire to put them in a discreditable light. In garrison, duties occupy much of the man's time and discipline is ever present; but away from the restraining influence of work and discipline, oftentimes crowding into a few hours the dissipation that a civilian spreads over days and weeks, he disgraces his uniform and brings discredit on scores of his innocent comrades. Can this be prevented, or if it cannot, can the effect it has on shaping public opinion of the enlisted men be avoided? The task looks like a well nigh impossible one; but to deny the practicability of accomplishing it is to throw up our hands and admit defeat.

Let us consider, then, how this is to be done. It is not difficult to point out the men who are bringing the uniform into disrepute, yet we permit them daily so to do without

thought of punishing them for the offense. They may be punished for engaging in a street fight, for drunkenness, for absence without leave, for "conduct to the prejudice of, etc.," but how many of them are tried for the specific offense of disgracing the uniform. Greater respect by the civilian for the uniform of the soldier! one of the crying needs of the day. Yet what are we doing, actually doing, to encourage and compel the wearer of that uniform to respect it? What is there in our administration solely intended to build about the uniform a barrier of sentiment that will protect it from such disgrace? Nothing. If this sentiment is to be aroused we must create in the mind of the enlisted man the belief that permission to wear the uniform when out of garrison is one of the greatest marks of official trust and esteem that can be bestowed upon him by his superiors; we must choose the men that are to be granted this permission with greater care than we choose our non-commissioned officers; and those men who are denied this privilege and honor must be made to feel the disgrace of their position.

For the purpose of regulating this abuse of the uniform and determining who shall be allowed to wear it when off duty, the enlisted strength of any command may be divided into three classes, as follows:

1st. The men with well settled, well established good characters, whose conduct is exemplary, who may be trusted implicitly without fear of their imposing on the confidence placed in them.

2d. The men who, while not vicious, are full of youthful, animal spirits, fond of occasionally having a good time in their own way; men who do not deliberately embroil themselves in difficulties, but who, nevertheless, are continually getting into trouble through one cause or another; men of good intentions but easily led away by temptation; in short, that large class of aimless, careless spirits, that can be reached and corrected in various ways; some by encouragement, some by admonition, and some by punishment.

3d. Those vicious men who have little self-respect and still less respect for the service and their uniform; who are constantly getting themselves into disgrace and are fre-

quently leading others into temptation; the men who never should have been enlisted; who are a constant menace to the reputation of the service, and give it but little in return.

The men of any command naturally fall into these three classes—the excellent, the fair and the bad. A captain who has served with his company for a year can so classify his men with unerring accuracy.

The men in all three of these classes should be allowed to wear civilian clothing when on pass if they so wish.* Let us look at this matter squarely and boldly. To refuse even the best of our men permission to wear civilian clothing when out of garrison, but not on duty, is to compel some of them sooner or later to do one of two things—wear civilian clothing in spite of the order to the contrary or wear the uniform and bring it into disgrace. Would the officer's uniform be given the unqualified respect that it receives to day were he bound by an iron-clad rule and required to wear it at all times? The question is one to reflect upon.

The men in the first class may be trusted to wear the uniform when among civilians with the dignity and honor it merits. In this work of creating respect for the uniform their assistance can be counted upon. Many of them have felt with chagrin the sting of that disrepute into which the service has been dragged, and they will be eager to give their active support to any plan which promises their uniform the respect and themselves the consideration that they know they deserve. These are the men that the public should see, and they should be encouraged in every way to wear the uniform at all times; and, partly to accomplish this purpose, partly to reward the men, and partly to encourage others to number themselves in this class, they should be given leaves and passes and shown other indications of official favor so far as this is otherwise consistent with the efficiency of the service.

The men in the second class are a variegated lot, grading

*This would undoubtedly require some provision whereby the enlisted men may be furnished with civilian clothing, but this is a matter of such minor importance when compared with the great vital question of respect for the uniform as scarcely to be worthy of comment.

from the man who just escapes being vicious to the man who just misses being excellent. The manner of treating them must necessarily be as different as are their characters. In the beginning this class will undoubtedly number by far the larger part of our men. The privilege of wearing the uniform must be granted them sparingly and with the greatest caution. Every care compatible with the avoidance of injustice must be taken to place this trust in only those who merit it, and the abuse of this trust must be appropriately and unhesitatingly punished. Just as the first class is shown unusual special privileges, so the men of this second class should be denied such privileges according to the circumstances surrounding the reprehensible conduct of each individual when in uniform. As far as practicable, a pass for the man in uniform should be had for the asking, while the pass for the man in civilian clothing should be more difficult to get.

The third class is easily disposed of. The men of this class have shown by repeated offenses that they are wholly unworthy to be trusted, and should be denied all privileges until, by good conduct and devotion to duty, they have redeemed their reputations. True, many of them may desert, but we cannot allow ourselves to be deterred, in this effort to improve the service where improvement is vitally needed, by the fear of desertion. Besides, this is another distinct evil, the correction of which constitutes a question entirely independent of this subject.

In all this there should ever be kept fresh in the mind of the soldier the single idea of respect *by him* for his uniform. Punish him, not for drunkenness, not for disorderly conduct, but for *disgracing the uniform* by being drunk and disorderly when dressed in that uniform. If we cling tenaciously to this great work of reform in our service and mass our united energies in one vast effort to effect it, neglecting no trifle as unimportant, but gathering about this central idea every minor reform that may contribute to the accomplishment of our object, we lay the axe on the very root of the evil—lack of respect by our soldiers and sailors for the uniform they wear.

RIGHT OF TRIAL OF SOLDIERS IN THE PHILIPPINES.

(PROBLEM No. 9, DEPARTMENT OF LAW, ARMY STAFF COLLEGE.)

BY FIRST LIEUTENANT RHEES JACKSON, TWELFTH INFANTRY, AND FIRST LIEUTENANT RONALD E. FISHER, SEVENTH CAVALRY.

UNDER *present conditions, a United States soldier on guard at a detached post near Batangas, P. I., shoots and kills one of three natives approaching his post. The soldier claims to have fired in performance of his military duty and in self-defense, under a reasonable apprehension that the natives were about to attack him with deadly intent. Nevertheless the civil authorities charge him with assassination in violation of the Philippine code (murder under our law), and he is brought before the court of First Instance at Batangas for trial.*

May that court lawfully try and determine the case?

* * *

1. *An American soldier in the Philippine Islands can not be tried by the civil courts of those Islands for an act done in the performance of his military duty.*

Any person who is in custody for an act done or omitted in pursuance of a law of the United States, or who is in custody in violation of the Constitution, or of a law or treaty of the United States, may, under provisions of Section 753, R. S., be brought before an United States court, or judge or justice thereof, by a writ of habeas corpus, and such court or justice may by an examination into the merits of the case make final disposition of such prisoner.

The necessity for the above law is to be found in the fact, as expressed in the opinion in Martin vs. Hunter (1 Wheat. 363), that—

"The general government must cease to exist whenever it loses the power of protecting itself in the exercise of its constitutional powers * * * it can act only through its officers and agents. * * * If, when thus acting, and within the scope of their authority, those officers can be arrested and brought to trial in a State court for an alleged offense against the law of the State, yet warranted by the Federal authority they possess, and if the general government is powerless to interfere at once for their protection * * * the operations of the general government may at any time be arrested at the will of one of its members."

Mr. Justice Bradley in *ex parte* Siebold (100 U. S. 371, 394) says:

"We hold it to be an incontrovertible principle, that the government of the United States may, by means of physical force, exercised through its official agents, execute on every foot of American soil the powers and functions that belong to it. It must execute its powers, or it is no government. It must execute them on the land as well as on the sea, on things as well as on persons. And, to do this, it must necessarily have the power to command obedience, preserve order, and keep the peace; and no person or power in this land has the right to resist or question its authority, so long as it keeps within the bounds of its jurisdiction."

In re Neagle (135 U. S. 1, 76) enunciates the principle that an officer or agent of the United States was not answerable to the courts of California for an act done under the authority of a law of the United States. In the same case, on pages 63 to 67, the opinion holds that no specific statute is necessary to afford the protection of the writ of habeas corpus. Authority inferred under the Constitution, treaties, and statutes will suffice.

The case *In re* Fair (100 Fed. Rep.), (as quoted in the brief of the plaintiff in error in the case of Grafton vs. The United States, page 47), where soldiers whose duty it was to apprehend an escaping deserter, shot and killed the deserter

in attempting to make the arrest, and for so doing were held for murder by the State Court of Nebraska, held:

"If then the petitioners acted under such orders in good faith, without any criminal intent, but with an honest purpose to perform a supposed duty, they are not liable to prosecution under the criminal laws of the State."

In the same brief, page 47, the Lewis case (83 Fed. Rep. 159) is quoted as follows:

"Where an officer, from excess of zeal or misinformation or lack of good judgment in the performance of what he conceives to be his duties as an officer, in fact transcends his authority, and invades the rights of individuals, he is answerable to the government or power under whose appointment he is acting, and may also lay himself liable to answer to the criminal process of a different government. With our complex sytem of government, State and National, we would be in an intolerable condition if the State could put in force its criminal laws to discipline the United States officers for the manner in which they perform their duty."

In the case in question there can be no doubt that the soldier is an officer or agent of the United States. If then, the act charged as a crime was done in the performance of a duty derived from the laws of the United States, the Federal courts are empowered to order the discharge of the accused.

"That there is a peace of the United States; that a man assaulting a judge of the United States while in the discharge of his duties, violates that peace; * * * are questions too clear to need argument to prove them." (*In re* Nagle, 135 U. S. 1, 69.)

In the same case the court says that it was the duty of the marshal to prevent this breach of the peace even if, in the protection of the judge or of himself, it became necessary to kill the assailant.

If his post is attacked, especially in a country where conditions are so uncertain as in the Philippine Islands, it is undoubtedly the duty of a sentinel to act promptly to insure the protection of government property under his charge and the safety of his command. His general orders require him

to remain upon his post until properly relieved and to take charge of all government property in view. He is immediately responsible for such property, and for its protection is provided with arms and ammunition. If attacked, he cannot avoid combat without committing the crime of quitting his post and, in addition, rendering himself liable to punishment for cowardice. The general orders of a sentinel emanate from the President through the War Department, and are in accordance with the powers and duties derived from the Constitution and statutes of the United States. As commander-in-chief of the army under Article 2, Section 2, of the Constitution, the President may make rules and regulations for the government of the army. By Section 8, Article 1, of the Constitution, Congress is also empowered to make rules and regulations for the government of the army. The second Article of War, Section 1342, R. S., commands obedience to the orders of superior officers on the part of the soldier. The 39th Article of War makes the offense of leaving his post by a sentinel before he is regularly relieved punishable by death or such other penalty as a court martial may direct. The 42d Article of War states that any soldier who runs away, or shamefully abandons any post, or guard, which he is commanded to defend, or casts away his arms or ammunition, shall suffer death or such other penalty as a court martial may direct, while the 62d Article of War presents a drag net which covers all acts or neglects to the prejudice of good order and military discipline.

The protection of public property is a duty of the executive department, derived primarily from the provision in Article 2, Section 3, of the Constitution, which requires that the President take care that the laws be faithfully executed. Section 161, R S., and paragraphs 200, 662, A. R. 1904, place the responsibility for government property at military posts on commanding officers, and require that it be properly guarded.

In the case before us, it is believed that a writ of habeas corpus could be sued out and the cause removed to a Federal *constitutional* court. The application should perhaps be first made to the Supreme Court of the Philippines, but if this

court fails to order the discharge of the accused, he is entitled to appeal to the Supreme Court of the United States.

In Baker vs. Grice (169 U. S. 284, 290), an appeal from the final order of the Circuit Court of the Eastern District of Texas in habeas corpus, the opinion says:

"It clearly appears as the settled and proper procedure that while Circuit Courts of the United States have jurisdiction, under the circumstances set forth in the foregoing statement, to issue the writ of habeas corpus, yet those courts ought not to exercise that jurisdiction by the discharge of the prisoner unless in cases of peculiar urgency, and that instead of discharging they will leave the prisoner to be dealt with by the courts of the State; that after a final determination of the case by the State court, the Federal courts will even then leave the petitioner to his remedy by writ of error from this court."

The same case further states that in cases of an exceptional nature, as in Neagle's case (135 U. S. 1) and *In re* Loney (134 U. S. 372), this course of non-interference has not been pursued.

In the case of Drury vs Lewis (200 U. S. 1, 7–8), where an officer and an enlisted soldier in the military service of the United States were indicted for murder aud manslaughter and held for trial in a State court, the Supreme Court held that the ruling in the case of Baker vs. Grice above was applicable. On page 8 the court says:

"But it is contended on behalf of the government that the State court was absolutely without jurisdiction to try the petitioners * * * because the homicide was committed by them 'while in the lawful performance of a duty and obligation imposed upon them by the Constitution and laws of the United States.' * * * It could not reasonably be claimed that the fatal shot was fired in the performance of a duty imposed by the Federal laws, and the State court had jurisdiction."

It will be seen that this ruling does not alter the right of the accused in the case before us to have the merits of his case reviewed by a Federal constitutional court on a writ of habeas corpus; it merely states the principle that the Federal

court should not interfere and discharge the accused unless the case is so exceptional as to require this action, or unless the act charged as a crime can reasonably be claimed to have been performed in pursuance of a duty imposed by the laws of the United States. In all cases, the Federal court must inquire into the merits of the cause, and if it decides in favor of its own jurisdiction, may discharge the accused.

2. *An American soldier does not lose his right to jury trial when ordered to duty in the Philippine Islands. He is entitled to trial either by jury or by court martial.*

The right of citizens of the United States to trial by jury is one that has always been jealously guarded in the past, as it is regarded as one of the principal agencies by which the freedom of the people has been preserved. It has always been extended to territories and the Supreme Court, in reaffirming this right in Thompson vs. Utah (170 U. S. 343, 347) (a case in which it had been attempted to make a provision of the State Constitution providing for juries of only eight men apply to trial for an act committed before the admission of Utah as a State), quoted approvingly the decision in Callan vs. Wilson, as follows:

"As the guarantee of a trial by jury, in the 3d Article (of the Constitution), implied a trial in that mode and according to the settled rules of the common law, the enumeration, in the 6th Amendment, of the rights of the accused in criminal prosecutions, is to be taken as a declaration of what those rules were, and is to be referred to the anxiety of the people of the States to have in the supreme law of the land, and so far as the agencies of the general government were concerned a full and distinct recognition of those rules, as involving the fundamental rights of life, liberty and property. This recognition was demanded and secured for the benefit of all the people of the United States, as well as those permanently or temporarily residing in the District of Columbia, as those residing in the several States. There is nothing in the history of the Constitution or of the original amendments to justify the assertion that the people of this District must be lawfully deprived of the benefit of any of the constitutional guaranties of life, liberty and property — especially of the trial by jury in criminal cases." "We cannot think," the

court further said, "that the people of the District have, in that regard, less rights than those accorded to the territories of the United States."

It is true that the Supreme Court has said in its opinion in *In re* Ross (140 U. S. 453, 464):

"The Constitution can have no operation in any other country. When, therefore, the representatives or officers of one government are permitted to exercise authority of any kind in another country, it must be on such conditions as the two nations may agree, the laws of neither one being obligatory on the other. * * * And besides, their enforcement abroad in numerous places, where it would be highly important to have consuls vested with judicial authority, would be impracticable from the impossibility of obtaining a competent grand or petit jury. The requirement of such a body to accuse and to try an offender would, in a majority of cases, cause an abandonment of all prosecution. The framers of the Constitution, who were fully aware of the necessity of having judicial authority exercised by our consuls in non-Christian countries, if commercial intercourse was to be had with their people, never could have supposed that all the guaranties in the administration of the law upon criminals at home were to be transferred to such consular establishments, and applied before an American who had committed a felony there could be accused and tried. * * * While, therefore, in one aspect the American accused of crime committed in those countries is deprived of the guarantees of the Constitution against unjust accusation and partial trial, yet in another aspect he is the gainer, in being withdrawn from the procedure of their tribunals, often arbitrary and oppressive, and sometimes accompanied with extreme torture."

It is to be seen, however, that this decision does not apply to the case under consideration. The Philippine Islands are not "another country" in the sense of the above expression. They are under the domain of the United States and governed solely by United States agencies. It is not claimed that the soldier should be tried by a jury composed of semi-barbarous Filipinos; indeed, that is what the decisions of the Supreme Court seem to be directed against; but we believe that it is illegal that soldiers should be submitted to the jurisdiction of a one-man court, especially as the judges

of these courts are, in many cases, themselves Filipinos—a race trained in an entirely different system of law and jurisprudence, whose habits of thought are different from ours, and who, having just been subdued by the American soldiers, after a struggle lasting over five years, could naturally be expected to feel only a very mild form of affection for their conquerors.

In the case of Hawaii vs. Mankichi (190 U. S. 197), where Mankichi was convicted by nine out of twelve men composing a jury, as was permitted under the Hawaiian law previous to annexation to the United States, the conviction was upheld, notwithstanding that the trial took place *after* annexation, and that the resolution of Congress by which the annexation was accomplished contained the following provision (same, 209):

"The municipal legislation of the Hawaiian Islands, not enacted for the fulfillment of the treaties so extinguished, and not inconsistent with this joint resolution nor contrary to the Constitution of the United States, nor to any existing treaty of the United States, shall remain in force until the Congress of the United States shall otherwise determine."

Congress, however, had failed to provide any measure to take the place of the form of trial then existing, the legislature of the Islands had adjourned and did not meet until long afterwards. Therefore, the Supreme Court was of the opinion that the form of trial then in vogue must continue until some other had been provided. It said (page 217):

"It is not intended here to decide that the words 'nor contrary to the Constitution of the United States' are meaningless. Clearly they would operate upon any municipal legislation thereafter adopted, and upon any proceedings thereafter had, when the application of the Constitution would not result in the destruction of existing provisions conducive to the peace and good order of the community. * * * We would even go farther and say that most, if not all, the privileges and immunities contained in the bill of rights of the Constitution were intended to apply from the moment of annexation; but we place our decision of this case upon the ground that the two rights alleged to be

violated in this case are not fundamental in their nature, but concern merely a method of procedure, which sixty years of practice had shown to be suited to the condition of the Islands, and well calculated to conserve the rights of their citizens, to their lives, their property and their well being."

But this decision says simply that this form of procedure was suited merely to the case of citizens of Hawaii, and does not announce it as applicable to citizens of the United States. Mankichi was a Japanese, not a citizen of the United States. It is fair to presume that he was in the Islands for his own pleasure or profit, a very different case from that of a soldier ordered to distant lands against his will to uphold the supremacy of his government against a semi-civilized foe.

The treaty with Spain, December 10, 1898, Article 9, states:

"The civil rights and political status of the *native* inhabitants of the territories hereby ceded to the United States shall be determined by Congress."

The "territories" above referred to are the Philippine Islands and other insular possessions gained as a result of the war with Spain.

The act of Congress of July 1, 1902, ratifying the establishment of the temporary civil government in the Philippine Islands, extends (in Section 5) most of the constitutional guarantees of life, liberty and property to those Islands, but not the right of trial by jury. But this is evidently merely carrying out the provision of the treaty above quoted, as Congress does not yet apparently consider the native inhabitants capable of properly exercising that right. But what relation has this to the rights of American soldiers?

In the Dorr case (195 U. S. 138) we find some very instructive enunciations by Justice Day, delivering the opinion of the court. On page 141, quoting from American Insurance Company vs. Canter, we find:

"If it be ceded by the treaty, the acquisition is confirmed and the ceded territory becomes a part of the nation to which it is annexed, either on the terms stipulated in the

treaty of cession, or on such as its new master shall impose. On such transfer of territory it has never been held that the relations of the inhabitants with each other undergo any change. Their relations with their former sovereign are dissolved and new relations are created between them and the government which has acquired their territory."

The American Insurance Company case was one which arose in Florida after its cession to the United States.

On page 143 of the Dorr case is found:

"For this case, the practical question is, must Congress, in establishing a system of trial of crimes and offenses committed in the Philippine Islands, carry to their people by proper affirmative legislation a system of trial by jury?"

Page 145: "The President, in his instructions to the Philippine Commission, while impressing the necessity of carrying into the new government the guarantees of the Bill of Rights securing those safeguards to life and liberty which are deemed essential to our government, was careful to reserve the right of trial by jury, which was doubtless due to the fact that the civilized portions of the islands had a system of jurisprudence founded upon the civil law, and the uncivilized parts of the archipelago were wholly unfitted to exercise the right of trial by jury."

Page 148: "If the right of trial by jury were a fundamental right which goes wherever the jurisdiction of the United States extends, or if Congress in framing laws for outlying territory belonging to the United States, was obliged to establish that system by affirmative legislation, it would follow that no matter what the capacities or needs of the people, trial by jury, and in no other way, must forthwith be established, although the result may be to work injustice and provoke disturbance rather than to aid the orderly administration of justice. If the United States, impelled by its duty or advantage shall acquire territory peopled by savages, and of which it may dispose or not hold for ultimate admission to statehood, if this doctrine is sound, it must establish there the trial by jury. To state such a proposition demonstrates the impossibility of carrying it into practice. Again, if the United States shall acquire by treaty the cession of territory having an established system of jurisprudence, where jury trials are unknown, but a method of fair and orderly trial prevails under an acceptable and long

established code, the preference of the people must be disregarded, their established customs ignored, and they themselves coerced to accept, in advance of incorporation into the United States, a system of trial unknown to them and unsuited to their needs."

Largely for the reasons given in the above quotations, the Supreme Court decided that Dorr was not entitled to trial by jury. But where is any reason given for subjecting American citizens to trial by a one-man court? The Supreme Court seems to be considering continually the case of the inhabitants of the islands, people of a strange and uncivilized race, and its reasoning does not anywhere refer to American citizens. As far as the committee was able to find, Dorr was nowhere referred to in this case as an American citizen. He and one O'Brien were the owners and editors of that sheet published in the Philippines known as the *Manila Freedom*. It is impossible to decide whether, if the question of citizenship had come squarely before the Supreme Court, it would have made any difference in the result, but it would at least have caused that tribunal to consider the question in rendering its decision, which was not done. But in any event, is an American soldier one of the inhabitants, or people, of the islands to whose needs the trial by jury is unsuited? Would the granting of this right to him be forcing on him an unknown method of trial contrary to his wishes? Even if it were decided that American citizens (civilians) in the Islands were not entitled to this right on account of the difficulty or impossibility of assembling competent juries, and that, being aware of the system of jurisprudence in force in those parts, the civilian who did not wish to submit himself to its peculiarities might stay at home, or if he went for his own pleasure or profit must submit himself to the laws there in force; still this is essentially different from the case of the soldier. The latter is in the Islands, frequently against his wishes, by the orders of his government and to maintain its supremacy, and that government should protect him against a system of trial not guaranteed him by the Constitution, and in which the judges

are often Filipinos, and hostile to him. Nor does the difficulty of assembling juries apply in his case, for there is always at hand that military jury—the court martial.

In the case we are considering, some difficulty is presented by the fact that the charge against the soldier is assassination, or murder, and that court martial, except in time of war, insurrection, or rebellion, can not try persons charged with capital crimes. It is probable that the conditions existing in Batangas at the present time are nominally peaceful. But the facts as stated in the problem scarcely seem to warrant an indictment for murder, and even if they do, the duty of the American government to protect its soldiers still remains. The Constitution does not require the trial of accused persons at the place of the commission of the alleged offense, except in cases occurring within the limits of one of the States of the Union; and there are plenty of places in the Philippine Islands where enough American citizens could be found to compose a competent jury. Otherwise it is believed that nothing remains except to try the soldier by court martial for manslaughter.

For the reasons given above, this committee believes that the Court of First Instance in the Philippine Islands could not try the American soldier under the conditions stated in the problem.

THE MACHINE GUN PLATOON; IT SHOULD BE RETAINED AS A PART OF THE REGIMENTAL ORGANIZATION.*

By Second Lieutenant HENRY J. REILLY, Thirteenth Cavalry, Commanding Machine Gun Platoon.

IN an article in the CAVALRY JOURNAL for July, 1908, Colonel Parker concludes from a test made with the machine gun platoon of the Eleventh Cavalry that these platoons are less effective than a platoon of the same number of sharpshooters armed merely with their rifles.

On a careful perusal of his reasons for this conclusion, it appears that all the causes of his objections can be eliminated, and it is the purpose of this article so to show.

In the first place his platoon was allowed to fire but 1750, rounds during two seasons, that is, 437½ rounds per gun per year. This is not enough to enable a platoon commander to find out how his guns work or what means are necessary to secure a continuous fire. He naturally wishes to instruct his platoon at different ranges. To do this it is possible to fire but a few rounds at any range. The gun will always work and stay on the target for a small number of rounds, so that one could go on firing indefinitely in this manner and never discover the things which must be guarded against in order to insure a continuous and effective fire.

*This article is in answer to the one by Colonel James Parker, Eleventh Cavalry, that appeared in the July number of the CAVALRY JOURNAL. It is not intended in any way as a comparison between the machine gun platoons of the Eleventh and Thirteenth Cavalry. Its purpose is to try and show that under existing conditions defects could not be discovered, and not being known, means to remedy them consequently could not be taken. Also that once known they can be remedied.

It is only by repeated firing of strings of 250 that these points can be found out and that the gunners can get the training necessary to keep their guns on the targets.

In other words, unless a platoon commander has been fortunate enough to have in some way been able to expend five and six times the allowance prescribed until the issue of G. O. No. 102, W. D. June 18, 1908, it would have been impossible for him to find out, not only how his guns fired and what is necessary to make them work continuously, but also to train his gunners and find out how he himself should control their fire so as to produce the best results.

The idea that the machine gun works on the principle that "you push the button and it does the rest" is quite prevalent but entirely erroneous. For the efficient use of this gun as careful a training of the gunner is necessary as is the careful training of the individual rifleman.

The gun as issued at present cannot be controlled, while firing, by one man unless it is wished to fire it clamped, then, as Colonel Parker justly complains, its fire is not distributed, and after a limited number of rounds it works up or down off the target and it is necessary to stop firing and relay it, thus preventing continuous fire.

To prevent this, the piece being unclamped, the method was first tried of having the gunner, while keeping the trigger pressed and his eye to the sight, traverse, No. 1 elevating or depressing it at the command of the gunner. In this way a continuous sweeping fire was obtained. As the elevating device has but few threads to the inch, a small motion of the hand produces a large motion of the muzzle, making it difficult for No. 1 to move the piece the small amount necessary to bring the fire exactly on the target.

As a result, the fire would be crossing the target up and down, as the gunner called out "Up" or "Down," instead of moving up or down to the target and remaining on it.

As this was not satisfactory and as it was not possible with the gun as issued, for one man to fire it while another with his eye to the sight traversed and elevated it, the safety catch of each gun was removed and a cord passed

through the rear end of the trigger bar, so that a man kneeling in rear of the gunner could, by keeping the cord pulled, keep the gun firing while the gunner with his eye to the sight traversed the gun with one hand and elevated or depressed it with the other, thus ensuring a continuous sweeping fire.

Jams are of frequent occurrence and have to be carefully guarded against. It is believed the number of them can be materially reduced if not entirely abolished. The more the experience had with the gun the less the number of jams. Frequently the spring on the left side of the gun needs to be tightened or loosened. This can easily be done and without interrupting the firing. All parts of the mechanism should be kept not lightly, but well oiled, as the rapid motion of many of the parts generate a great deal of heat. The gunner should be sure that his feed box is well down in its seat and not out of it a small fraction of an inch, as is sometimes the case. The point of most importance is to load the belts with the greatest care, being sure that the cartridges are in evenly, that they are free from dust. and that there is no dirt in the boxes. If ammunition has been carried around in the boxes for several months without being expended the cartridges should be removed, cleaned if necessary and the belts reloaded. Slightly oiling the rims of the cartridge cases also helps. When these precautions are taken jams are few and far between. As each gun is supplied with a belt filling machine, all of this can be done in the field as well as in garrison.

The peep in the rear sight is so small that at a thousand yards it is often impossible while firing to see the target properly. The front sight is so large that it obliterates a large portion of any target and prevents the gunner from aiming with any great degree of accuracy.

Both these defects can be remedied with a consequent increase in fire efficiency. It is believed that with a telescopic sight the fire efficiency could be doubled.

After reading Colonel Parker's article the machine gun platoon was put to a similar test, with the results given below. Below the table of tests is given the results of collective fire of two infantry and two cavalry organizations, in the same garrison, on the same range, and under practically the same weather conditions. The other four organizations had either not fired or did not have their results available.

Date	Time to Go in Action	Time to Fire	Prone		Kneeling		Standing		Total		Hits per Minute
			Hits	Figs. not Hit	Hits	Figs. not Hit	Hits	Figs. not Hit	Hits	Figs. not Hit	
July 14	63 sec.	36 sec.	38	2	22	4	20	4	80	10	133.33
Aug. 22	60 sec.	66 sec.	25	5	47	4	38	3	110	12	100.00
Aug. 22	52½ sec.	84 sec.	29	3	62	1	55	0	146	4	104.2
Aug. 22	48½ sec.	75 sec.	31	4	57	0	99	2	187	6	149.6

1000 YARDS.

Organization	Hits, Fire at Will	Hits, Volley	Total	Strength (Approximate)
Inf. Co.	57	59	116	55
Inf. Co.	41	53	94	55
Cav. Troop	78	106	184	65
Cav. Troop	68	106	174	60

The delay between tests was due to the Northern and Army Rifle and Pistol Competitions.

In all four tests the platoon, packed, was advanced on the 1000 yards firing point at a trot and the command "Action front" given, followed later by the commands for firing at the target, which was the collective fire target (Target "L"). The first column is the time in seconds from "Front" of "Action front" till the first shot was fired. The second column is the time from the first shot to the last, including all pauses to observe fire, remedy jams, etc. In each test 500 rounds were fired, both guns firing together. In no test was there any jam with the exception of the second test on August 22d, during which the left piece jammed after firing half its belt; the right piece on finishing its belt fired the balance, and by the time it finished, the left piece was again ready to fire.

In the test of July 14th the full belt of 250 rounds was fired by both pieces without pause. It was found, however, that this prevented a proper observation of the fire, as one piece

might be raising all the dust while the other was entirely off the target, as the way the range is made no dust is seen unless the bullets are striking in the immediate neighborhood of the target. For this reason, in the subsequent tests, each gunner was instructed to pause occasionally while the other was firing, so as to see if he was on the target.

From the data we see that machine guns are capable of a very great rate of effective fire. Thirty-eight figures out of forty-eight hit in thirty-six seconds as in the first test, or forty figures with 187 holes in them out of a group of forty-eight, all in one and one-quarter minutes as in the fourth, could hardly be called ineffective or slow.

As regards the number of hits per minute on a target the machine gun platoon is not inferior to a platoon of sharpshooters, but far superior, as the number of hits for Colonel Parker's platoon of sharpshooters was but fifty-eight per minute, while in the above table the minimum is 100 and the maximum 149.6.

It is true that a machine gun requires more cover than a man, but even so, it is easily hidden, and even in the open is quite inconspicuous at six or seven hundred yards.

It is believed that the nervousness of a man in battle can have less effect on a gun mounted on a rigid tripod, and incapable of movement except by means of a screw thread, than it can on a rifle held in the hand, and consequently capable of the widest movement in any direction.

While it is true up to the present, that a platoon of cavalry can go in action more quickly than a machine gun platoon, there is probably not a platoon commander in the service who has not plans for altering the present cumbersome equipment, so that these guns may be put in action in much less time than that now necessary. If a mountain gun in seven pieces and carried on four mules can be put in action in thirteen seconds, or out in seventeen* certainly a method can be devised by which a machine gun in but two pieces, and on but one mule, can be put in action in the same time.

* Record in battery, formerly Seventeenth Battery F. A.

No reason is seen why machine gun platoons should not keep up with cavalry at any gait. In one of the last night maneuvers the platoon of the Thirteenth Cavalry trotted six miles at the regulation gait without halting, and came to the walk but once, and then only for fifty yards at a bad railway crossing, without in any way damaging the mules. No difficulty has been experienced at any time in keeping up with the squadron.

The cost of the platoon is greater than that of a cavalry platoon, but with the greater fire efficiency, to say nothing of the increased confidence which men always have when supported by guns of any character, and the moral effect on the opposing force, which all who have been under machine gun fire testify to, it would seem that they are well worth it.

It is not understood how a single rifle bullet can wreck a machine gun, as with direct impact the bullet from our present rifle has a penetration of but .259 inches in low steel, while the cover plate of the gun is .1975 inches, the side plates .125 inches, and they can only be struck a glancing blow unless fired at directly from the flank. The water jacket might be penetrated, but that would not put the gun out of action.

It is not necessary for the animals to come up to the guns to repack, as the guns dismounted and the tripod can easily be carried by the cannoneers for considerable distances.

It would seem that far from the machine gun being limited to use in a prepared defensive position, it is capable of considerable use with cavalry.

For a few examples:

It is frequently necessary for the different units of a cavalry screen to determine whether or not they are confronted by a small force merely trying to delay them, or a force capable of serious effort. The fire from a couple of machine guns would settle the question in a short time without it being at all necessary for any unit to become seriously involved.

On outpost, particularly at night, machine guns can be advantageously used. For instance, they could be placed on roads, the traversing device clamped. Then by slowly

changing his elevation the gunner could cover the road in a way that would prevent any body of troops advancing over it.

Machine guns by their volume of fire enable a cavalry commander to reduce the number of dismounted men used as a containing force, and therefore increases the number available for his main effort mounted, when such action is desired.

By their fire at long range they could compel an attacking cavalry to deploy much earlier than it otherwise would, thereby making its advance harder to control, and making it disclose its plan of attack at a much earlier period than would otherwise be done.

As a result of their experience in the Russo-Japanese war, in which machine guns were used extensively, both nations have added greatly to the number of machine guns in their army, and it is understood that the method preferred is to carry them on pack animals.

It is admitted that objections can be urged against the use of machine guns with cavalry. If the causes of these objections cannot be removed, and the objections are shown after long and repeated tests to outweigh the advantages, then the machine guns for cavalry should be abolished. Until this is conclusively proved, and so far it has not been commenced to be proved, they should be retained as part of the equipment of a regiment of cavalry.

THE MACHINE GUN PLATOON: SHOULD IT BE RETAINED AS PART OF THE REGIMENTAL ORGANIZATION?

By First Lieutenant FREDERICK J. HERMAN, Ninth U. S. Cavalry.

IN the article in the CAVALRY JOURNAL for July, 1908, Colonel James Parker, Eleventh Cavalry, arrives at certain conclusions concerning the relative merits of a machine gun platoon and a platoon of cavalry of his regiment based upon two tests set forth in his article, which he applies to the machine gun service in general. Such a limited radius of observation does not, in my opinion, justify these conclusions.

Taking Colonel Parker's observations and conclusions in detail, I shall endeavor to correct the impression that must necessarily have been created by his article.

It appears that the platoon in question had received very little actual firing instruction with ball cartridges. The 750 and 1000 rounds fired in two seasons were not enough to teach the personnel of the platoon the correct method of loading the pieces to avoid jamming, or to learn the causes of jams and how to avoid them.

Referring to the test on January 7, 1908, ten minutes are said to have been required to fire 750 rounds; jamming of the belt is mentioned. This frequently happens with the ammunition made in 1903 and 1904, now being used by the machine gun platoons. When this ammunition was manufactured it was not contemplated to load it into linen belts for machine guns—belts that hold the cartridge and bullet very tight—in fact, it may be said that the caliber, at least, of the machine gun for our service was determined upon to meet the ammunition already on hand or contracted

for. The bullets in this ammunition are not very firmly set into the shells, and when mechanically withdrawn from the tight clasp of the belt, they are often left in the belt or in the mechanism; the shell, with its hard grains of powder rattling around loose, enters the chamber and is discharged without burning all of the powder grains; the recoil, by reason of the absence of the bullet from the shell, is insufficient and the mechanism ceases to work. When started anew by hand the succeeding bullet enters the chamber and is wedged tight there by loose powder grains and cannot be firmly seated, the jam is complete, and the gun temporarily out of action. This is not a constructive fault of the gun or an evidence of inefficiency on the part of the gun detachment, but due entirely to ammunition defective and unsuitable for this weapon. With good ammunition (such as that bearing date of 1906) I have fired from 500 to 600 shots per minute with the Maxim automatic with good results, the rate of firing depending, to a limited extent, upon the tension of the recoil spring and the proper adjustment of crosshead washers. I have seen other platoons (white and black troops of infantry and cavalry platoons) do the same thing in the competition at Fort William McKinley, Rizal, in December, 1907, with guns that had fired very much more ammunition than those of Colonel Parker's platoon.

As a matter of course these matters were fully demonstrated before a board of competent officers when this gun was decided upon for our army, and two members of this board have assured me that the gun could actually fire 600 shots per minute effectively, and I have done it myself with the men and guns of the Ninth Cavalry. The tests before the War Department board were made by experts, and experts are required in the machine gun service of the United States as in the case in machine gun organizations of Europe and Asia, in place of the fag ends of troops and companies so often found assigned to our machine gun platoons. In civil life costly and intricate machinery is not placed into the hands of every coal heaver or laborer; a specialist, an engineer or other competent mechanic is employed for the purpose whose expert knowledge is paid for.

It is noted that to Colonel Parker it seems probable that the fire action of a platoon of cavalry is likely to be more effective than that of a machine gun platoon. The Colonel does not state what observations he has made, if any, concerning the other platoons of the service.

Some stress is laid upon the matter of continuous fire, which Colonel Parker states is impossible. I have seen my own platoon and the platoons of six other regiments fire continuously for 750 rounds with two changes of belts, at the rate of 600 shots per minute, and in the instances where this rate was not equaled it was invariably caused by lack of adjustment, showing inexperience and lack of expert qualification in their special arm.

Colonel Parker's cavalry platoon, composed of sharpshooters, had definite and simple duties, and the amount of small arms practice with a simple weapon that an aggregation of 22 sharpshooters implies. Nothing appears in the Colonel's article as to what kind of men the machine gun platoon consisted or what opportunities for the special training of the men for this service was afforded them, notwithstanding the Colonel's opening remarks. Unless there was an exceptional departure from the general custom in such matters it is perfectly safe to assume that this machine gun platoon was not composed of the best men of their regiment.

Now to Colonel Parker's conclusions:

1. The theoretical rate of effective fire for the Maxim gun has been proven to be correct in practical tests by experts and specialists as well as by those who were neither experts or specialists, as will appear hereafter.

2. The machine gun is not a weapon designed for bull's-eye work or the other refinements of target practice. Its fire is not too much concentrated when the oscillating and elevating gear is correctly operated. (Presently there will be devised an arrangement to permit diagonal movement to enable the gun to follow the oblique movements of troops on hill-side slopes.) Machine gun fire should be distributed over the whole target and the immediate zone of

the target; the moral effect of sound and distribution of bullets in the vicinity of any living target has a distinct value.

3. The lateral movements of the piece caused by vibration is an advantage in action rather than a defect, if the target is an appropriate one for machine gun fire. As to recoil, there is little or none, as it is taken up by the counter-recoil device at the muzzle, the nozzle.

4. The machine gun, while a weapon of opportunity, can also do good work on targets ordinarily left to individual riflemen, when manned by experts or specialists, *i. e.*, adequately trained men. It has been the tendency in the United States service to require its machine guns to fire at inadequate targets and expect results for which the gun sights are not constructed. A man cannot shoot closer with a field piece than with a rifle at rifle ranges, but the Maxim machine gun in competent hands can do good and effective work at 2000 to 2500 yards, and this the rifleman can not do individually or collectively except as was done with much labor and sundry devices by the Turkish engineers during the siege of Plevna, who had no machine guns. The machine gun is most appropriately used for offensive or defensive action in the zone lying between the inner zone of effective artillery range and the long range fire of small arms.

5. The experiences of the officers and men of the machine gun service have been that the number of hits made by a machine gun on a line of skirmishers at 500 to 600 yards would be many times greater, as would its moral effect upon living targets, than the fire of a number of riflemen equal to the personnel of the gun detachment.

6. Correct use of the machine gun in action demands a position of concealment and cover, not only for the gun and its detachment, but for its led animals as well. While no indirect fire is practicable, the principles of gun concealment and cover during direct fire, and shelter and protection for led animals as practiced by the field artillery, are applied in most machine gun platoons. The gun, if set up for action in the open (which should never be done if any cover is available)

with its cannoneer serving the belts, offers but a fraction more target surface than a kneeling skirmisher; when cover is available the gun offers as difficult a target to find as does the individual rifleman. While the gun may get out of order at a critical moment, provision is made for their use in pairs, so that the machine gun fire need not cease on that account. A well trained personnel should be able to rectify such things, and be competent to quickly make minor repairs and exchange of parts under fire.

7. As to battlefield results, it is to be remembered that under ordinary circumstances the infantry or cavalry platoon is subject to excitement; its men have nerves, hearts, lungs; the stress of moving from place to place and the excitement of battle reacts and affects their fire efficiency, though all may be expert riflemen; the machine gun on the contrary is not so affected, and when once set up is equally steady in or out of excitement.

8. With special men and more perfect guns better results would certainly be obtained, and it would be a great stride toward the efficiency of our machine gun platoons if this fact were recognized in our regiments. It is not admitted that the test made by Colonel Parker is more likely to represent *average* results for machine gun fire.

9. The machine gun is exceedingly liable to get out of order, to jam, and become disabled, and it happens frequently and will continue to until the service is reorganized with an adequate personnel, separated from the regiments, and trained to meet the requirements of this special arm without interference.

10. The machine gun with its present arrangement of tie straps and other *time consuming* devices requires an average of about one minute to get into action after the command therefor, and an average of one and one-half minutes to repack and start off; this is no fault of gun or detachment, and will in due time be remedied and the time materially shortened by the use of a number of *time saving* devices that will undoubtedly be presented as soon as it is apparent that the machine gun service is seriously considered by the War Department. I have seen many troops who have re-

quired as much time and more to dismount to fight on foot and to get ready to deliver a controlled fire, and to remount and be ready to move off in orderly formation, and they were not all troops of the Ninth Cavalry by any means.

11. Since Bredow's famous charge I know of no cavalry movement at high gaits for 3000 or 5000 yards involving a squadron or more. Incidentally a machine gun command is not a charging force, but on the contrary, in the event of a charge its place would be at some stationary point where its fire would be preparing the way for such charge, and keeping down the fire of the objective enemy or his supporting troops. As to long marches of the cavalry, I believe it is generally known that the machine guns come in with the cavalry, and would probably come in before them if permitted. Cavalry columns, except in rare instances or under special circumstances, never do get in as early as the pack mules if the latter may choose route or gait. For such distances as the machine guns might be required to move rapidly during the progress of an action, as good time can be made as by the cavalry at maneuvering gaits. It is not expected that such guns participate in a charge where they have no place. At Camp McGrath, P. I., the machine gun platoon of the Ninth Cavalry has been able to start at a signal, pass over 750 yards of varied ground, and go into action against an enemy represented by an actual troop or squadron, at an actual range, and with the deflection scale set to meet wind conditions, and fire one blank cartridge (which is more difficult to fire than a ball cartridge) all within three minutes and fifteen seconds. The troop or squadron to beat that must hustle. In this regular drill the sections receive no credit unless all the conditions required for accurate and controlled fire are fully met, including concealment of pieces and cannoneers and the disposition and cover for the led animals. The mules of this platoon are not very well trained yet, having been with the platoon but a few months.

Machine guns are not intended for the maneuvers of the regiments or squadrons in ordinary regimental or squadron drills, although they do regularly participate in ceremonies

with such commands; their proper function under existing organization is simply that of an adjunct to the cavalry or infantry, for use by the commanding officers of the cavalry and infantry as an appropriate opportunity presents itself, or is created. With a very few exceptions the opportunities afforded our machine gun platoons for coöperative action and instruction with their respective organizations of infantry and cavalry have been few indeed.

12. Just as soon as it is clearly proven that the fire effect of a platoon of riflemen is even approximately equal to that of a platoon of machine guns, or even a single gun, the comparative expense of both should be considered and the machine guns eliminated from the army.

* * *

Machine guns should not be set up in the open as plain targets for an opposing skirmish line, as seems to be the practice in Colonel Parker's platoon; a single bullet may disable a machine gun if it is struck in the right place; but it does not follow that every bullet that may strike a machine gun will wreck or disable it, as it may be struck in many places without being disabled or materially damaged; it should be withdrawn from action by hand under cover from the crest occupied, or otherwise withdrawn from view while being repacked; the horses and mules need not to be required to be brought up to the guns, leaving cover for bullet-swept ground.

While it is quite true that battles are still won with men, I imagine that a battle-axe company would be out of luck in a modern fight.

The machine guns at Omdurman on September 2, 1898, gained the respect of the British army; the machine guns of the Russians, eight of them, delayed the Japanese advance for a whole day and covered the retreat of their own army before they were lost in honorable battle at Tjurentschong early in 1904; at Mukden, on March 7, 1905, the Russian machine guns repulsed the attack of the Japanese brigade of General Nambu; at Port Arthur the machine

guns of the Russians became nightmares to the besieging Japanese; these are only a few instances of the use of these guns in a defensive role in field and fortification engagements, although these guns were used offensively in several of the fights here mentioned. The tremendous increase of these guns and the almost general reorganization of such troops into separate organizations of troops, batteries and companies and the specialization of this arm in the armies of the world (except the United States) does not indicate that they are as worthless and ineffective as Colonel Parker's article would have it appear.

The following are a few recorded evidences of machine gun efficiency:

Captain Henry Victorin, Austrian Cavalry, in the *Austrian Cavalry Monthly* for April, 1908, says:

" * * * The following problem in long-range firing was solved by my own detachment at Bruck on the Leitha at the target range near Nyulas on Lake Neusiedler on May 24, 1907. Situation: Our own detachment, without artillery, is engaged on the heights to the north of Nyulas against the enemy's forces, including four guns, advancing from the south. The four machine guns with our detachment receive orders to silence the heavy fire of the enemy. The machine guns went into action on a slope between vineyards with intervals of thirty to forty paces; for each gun and target 250 cartridges were allowed. The fourth target consisted of a battery of four guns at unknown ranges, later found to be 1500 m. Firing volleys at 1600 and 1800 m. by platoon, then by battery, no results were obtained. At 2000 m. by battery, the projectiles were seen throwing up the water in the lake about 500 m. to the right rear of the targets. The sights were adjusted to the left and the elevation reduced 500 m. and another volley fired, which was seen to strike at the second gun from the left; continuous fire was held upon the target for half a minute with apparently great results at the target. The trial shooting lasted two minutes. Results: Of the twenty-four figures at the four guns, thirteen were struck by nineteen hits; at the second

gun from the left all five cannoneers were struck. The targets exhibited the following results:

	1st Section	2d Section	3d Section	4th Section
Hits: On piece or carriage	4	3	5	3
Hits: On figures	7	7	2	3
Hits: No. of figures hit	4	5	2	2
Fired by machine gun	No. 4	No. 3	No. 2	No. 1

"Had the firing been continued the machine gun detachment would soon have annihilated the hostile battery, and would so have fully solved the problem.

"The third target consisted of four infantry columns at unknown ranges, later found to be 1350 m. In two minutes 147 of the 192 figures were struck with 468 hits. The gunner of the fourth section of the machine gun battery, Corporal Brandner, Fifth Dragoons, made 242 hits with his 250 cartridges. The targets exhibited the following results:

	1st Column 48 Fig.	2d Column 48 Fig.	3d Column 48 Fig.	4th Column 48 Fig.
Hits: Hits or figures	242	43	88	95
Hits: No. of figures hit	47	21	39	40
Fired by machine gun	No. 4	No. 3	No. 2	No. 1

"The second target consisted of four groups of ten figures each at unknown ranges, found to be 1200 m. The firing was by platoon. The targets exhibited the following results:

	1st Group	2d Group	3d Group	4th Group
Hits: On targets	13	14	12	3
Hits: Targets hit	9	9	8	3
By machine gun	No. 4	No. 3	No. 2	No. 1

"The first target consisted of four groups, each of twenty-seven rectangular sheets about eighteen by seventy-two inches at unknown ranges, found to be 1050 m. The firing was by piece. Results:

	1st Group	2d Group	3d Group	4th Group
Hits { On sheets	57	6	9	14
Hits { No. of sheets hit	22	6	8	13
By machine gun	No. 4	No. 3	No. 2	No. 1

"The following table shows the percentages of these exercises:

Machine Gun	First Exer.		Second Exer.		Third Exer		Fourth Exer.		
	Per Cent. of Hits.	Per Cent. of Sheets Hit	Per Cent. of Hits	Per Cent. of Figs. Hit	Per Cent. of Hits.	Per Cent. of Figs. Hit	Per Cent. of Hits. On Pcs.	Per Cent. of Hits. On Figs.	Per Cent. of Figs. Hit
No. 1	5.6	48.1	1.2	30	38	83.3	1.2	1.2	40
No. 2	3.6	29.6	4.8	80	35.2	81.2	2	0.8	40
No. 3	2.4	22.2	5.6	90	17.2	43.7	1.2	2.3	100
No. 4	22.8	81.4	5.2	90	96.8	97.9	1.6	2.8	80
Sum for Det	34.4	181.3	16.8	290	187.2	306.1	6.0	7.6	260
Per cent. for Det	8.6	45.3	4.2	72 5	46.8	76.5	3.4		65

FIRING UPON MOVING TARGETS.

"This is accomplished by using several elevations, as illustrated in the machine gun battery of Lord Kitchener's forces against the army of the Mahdi at Omdurman; this battery awaited the attack of the Mahdi's riders, which to the number of some 20,000 horsemen, in irregular masses, charged the English formation. After firing short purposely by which the striking of the projectiles was plainly visible in the desert sand, the machine gun commander allowed the enemy to ride into the sheaf of his projectiles and then opened up on him with all six guns with continuous fire, using several elevations to accomplish greater depth of fire into the mass, whereby the constantly oncoming riders were well nigh annihilated. I tried this also during field firing on the Rose Fields near Bruck, and had a line of skirmishers run forward from the height over a road to cover, over and below the road. As the targets began to run forward, I found the elevation to the road within twenty seconds, the distance being quickly determined by the dust raised on the road. With range and deflection determined

all the guns were directed upon the road; all remained at close attention until the targets approached the road. At my command continuous fire was delivered, which instantly showed a powerful effect. Ninety per cent. of figures hit remained lying; only a few targets continued their course in a wobbly, half inclined condition to cover under the road."

On October 13, 1906, five days after receiving their guns, the machine gun platoon of the Ninth Cavalry, composed of negroes, made an average per cent. of 79.05 firing at bull's-eye targets over the known distance target range at Fort Riley, Kansas, at 200, 300, 500 and 600 yards. On October 20, 1906, eleven days after the receipt of their guns, this platoon, firing in a mixture of rain and snow, at single fire and volley fire, at 600, 800 and 1000 yards, 780 shots at the collective fire targets (the same number of shots fired by the two troops of its regiment at Fort Riley having the highest collective figure of merit), made 543 hits, distributed as follows:

Range, yards	600	800	1000
No. of shots in single fire	130	130	130
Volley fire	130	130	130
Hits on { Prone figures	21	18	49
Hits on { Kneeling figures	141	56	65
Hits on { Standing figures	110	33	50
Totals	272	107	164
Range per cent.	104.6	38.7	63

Average per cent. for three ranges 68.76.

The average collective figure of merit for the two troops, with 130 men firing, was 57.52 per cent.

On December 8, 1906, this platoon fired at a troop of cavalry represented by sixty "M" targets, deployed at normal distances and intervals as an advance guard, at unknown ranges, afterwards found to be from 600 to 1750 yards for the several groups. The platoon had then been in existence but a little over two months with most limited opportunities for instruction, and the platoon showed its lack of training, the

guns jamming frequently and the firing occupying about ten minutes. The result is shown in the following table:

Number of figures in targets	60	Number of figures hit	25
Number of rounds fired	983	Number of men hit	15
Number of hits	74	Number of horses hit	17

Groups	Figures	No. of Figs. Hit	Hits	Men Hit	Horses Hit
Point	4	3	22	2	2
R. of pt.	4	1	1	0	1
Left of pt.	4	3	7	3	3
C. of V.	2	2	8	2	2
C. file	1	1	5	1	1
Support	16	11	27	5	6
C. file	1	0	0	0	0
Reserve	24	3	3	2	1
R. F. grd	4	1	1	0	1
Totals	60	25	74	15	17

At Camp McGrath, P. I., on August 30, 1907, this platoon, after having fired some 6000 rounds through its four gun barrels in target practice, made 72.32 per. cent. in firing at the collective fire targets at 600. 800 and 1000 yards firing, the same number of shots at single fire and volley fire at each range as was fired by 85 per cent. of a troop of sixty-five men; the time required was much less than that usually employed by a troop for this firing test.

On June 22, 1908, this platoon, at Camp McGrath, moved a section at a gallop for 200 yards and went into action in one minute and twelve seconds after the section halted, firing 100 rounds at six standing and six kneeling silhouettes, hitting ten of the twelve figures with twenty-five hits. The second section did the same thing in one minute and fourteen seconds, hitting eleven figures out of twelve with forty-one hits. The platoon was then sent over the same ground and went into action in an average time of 58½ seconds (first section 53 seconds, second section 65 seconds). The two guns fired 700 rounds in three minutes, hitting all of the figures with 301 hits.

During the past two years my platoon has had considerable target practice, and in all of its firing, unusual inaccuracy and jamming was generally occasioned by either the poor grade of ammunition furnished or the insufficient training and inexperience of the men, and in some instances lack of intelligence, and not from structural defects of the gun or faulty equipment. In every case where bull's-eye target practice over known distances was had, the scores, notwithstanding the sights furnished, were those of the first-classman, or sharpshooter, and that occasionally by men who failed to so qualify in their troops at small arms practice.

In conclusion, it may be said that, based upon the experiences of our own machine gun commanders and the few officers who have employed the guns in conjunction with infantry and cavalry in our service, the machine gun is an exceedingly useful and indispensable weapon; that it should be separated from the cavalry and infantry, where it is not wanted; that the organizations be mounted and reorganized as a separate arm, where its tactical uses may be developed and its personnel become, not merely proficient, but expert, as the requirements of this service demand.

Reprints and Translations.

DISPLACEMENT OF THE CENTER OF GRAVITY OF THE HORSE, EQUILIBRIUM AND THE AIDS OF THE RIDER.*

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INTRODUCTION.

IN reality, all training of the horse is nothing more than a kind of gymnastics, which one practices in order to make the horse able to submit himself to the will of the rider, which the latter makes known without being conventional, by means of the aids. That is to say, that the relation established by the aids between the man and the horse must be such that the horse is obliged to obey. All training must, therefore, be based upon the principles of equilibrium and anatomy, so that the rider does not depend upon the good will of the animal to obey or refuse.

These aids man discovered by intuition and applied by instinct. It was only lately that more or less reason was given for their use, and that they were formulated in a prescribed manner. We must admit that horse training came first, as physics was then purely experimental.

*Translated from the French by Second Lieutenant E. Engel, Ninth Cavalry.

The methods of training that have been developed, are based upon the experience acquired by good riders, substantiated as to their physics, after experiment and observation, by the law of inductive reasoning.

When we look over the different methods of training we easily perceive that the general tendency—intentional or intuitive—is nothing more than to obtain from the horse the displacement of his center of gravity at any desired moment, according to the will of the rider. It is without doubt most logical to teach this displacement to the horse, at first when he carries no weight, provided the aids employed correspond as nearly as possible to those that will be used when mounted by the rider.

If the horse has learned, without bearing a rider, to displace his center of gravity from front to rear, rear to front, right to left and left to right, according to our will, he will be so much better able to displace later the common center of gravity of horse and rider in a like manner. For this reason we believe this preparatory work facilitates the end more quickly and surely.

It is clear that in order to displace his center of gravity, the horse modifies the form of his skeleton, composed of various levers. This he does by aid of the muscles, which are put in action by the nerves, which on their side obey the impressions received from the brain. How this telegraphy is effected is of secondary importance to us. It is to the physiologist that we abandon this study.

The rider, who devotes himself to training, has only to seek the means by use of the aids, that enables him to put the muscles in action, to develop and to control them; then to obtain by them the placing in action of the levers of the skeleton, changing their attitude so that at each moment the center of gravity is displaced according to his will.

It is by pressure of the attachments, more or less vigorously, that we act upon the nerves, from them directing most frequently the superficial muscles, which communicate either directly or indirectly their impressions to those lying underneath. The impressions thus produced become fixed

in the memory of the horse, as the aids become more and more delicate.

It is by repeated exercise that we obtain little by little the instant submission of the levers of the skeleton and also the immediate displacement of the center of gravity.

CHAPTER I.

A saddle horse cannot be considered truly well trained if he is not able to displace at any moment his center of gravity—or better yet, the common center of gravity of the horse and rider—according to the will of the rider, which he makes known as has already been explained, by means of the aids.

A horse in order to advance his foot firmly and in order to increase the speed of his gait, must bring his weight forward. In order to stop or diminish his speed he must carry his weight back toward the hind-quarters. In order to go to the right or left he brings his weight towards the side towards which he goes.

It is especially by the displacement of the head, neck, and shoulders that the horse transfers his center of gravity; and this in direct relation with the power or motive force of the hind-quarters, which we can distinguish as power of propulsion and power of support.

The hind quarters act as a spring. In closing the angles formed by the joints, the power of tension and support accumulates, while in opening these angles the power of extension and propulsion manifests itself. The more the tension is strengthened, the more energetic will the extension become.

It is especially by contraction of the flexors that tension pronounces itself, while by contraction of the extensors the extension does, and propulsion takes place.

In extending the head and neck, the horse brings his center of gravity forward; in bringing them back—direct flexion—he sends it to the rear. Direct flexion is of great

importance to be able to employ at will, and is called by Goubaux and Barrier, in their excellent work, "The Exterior of the Horse," "the powerful balancer."

As we have previously said, it is by the aids that the rider obtains from the horse the displacement of his center of gravity. Among these aids the transfer of the weight of the rider is of first consideration. It is done instinctively. The good rider does it in such a manner that persons not familiar with the methods of the art scarcely perceive it. However, nothing harms so much the appearance of the rider as this transfer of weight made in a too visible manner, whether it be voluntary or involuntary. In order to get more speed the rider brings, almost invisibly, the weight forward; in order to slacken or stop he carries it back; in order to go to right or left he leans to the side toward which he wishes to go. It is by these means, among others, that we make known our intentions to the horse, which, wishing to obey, transfers the common center of gravity.

If the horse does not wish to obey, he displaces his center of gravity to the opposite side towards which the rider desires he shall go. If the latter does not succeed by the combination of the aids which he uses to submit his horse to his will, he is obliged to follow with his own center of gravity the displacement of that of the horse, otherwise he breaks the equilibrium.

For the same reason that in our day we prepare the young soldier by gymnastics for the profession of arms; it is also well not to commence the actual training of the horse when mounted until we render him apt to understand us by preparatory gymnastics, which are called flexions, and which should be continued during the entire period of training.

It is evidently of great importance to know where to find the center of gravity of the horse. It is very difficult, almost impossible, to determine the precise situation of it, because the body of the horse is not homogeneous, and respiration likewise has a certain influence upon its situation. It would be very difficult to place the horse in two positions, sufficiently different, that the center of gravity could be determined by the intersection of two vertical lines.

Fortunately for equestrian art, it suffices that one can determine with sufficient precision the vertical line passing through the center of gravity of the horse when standing on a horizontal plane. People have reasoned much upon the situation of the center of gravity; they speak of it continually in books on training, and some do not hesitate to draw the line of gravitation of horse and rider without demonstrating upon what facts it is founded.

One of the most conscientious observers of the horse and his carriage and gaits (Von Oeynhausen) makes his line fall a little to the rear of the withers, when the horse is standing in a natural attitude, with the head, neck and shoulders inclined at an angle of forty-five degrees to the horizon; and the vertical line passing through the center of gravity of the rider, when sitting erect, he makes pass through the middle of the upper part of the body of the horse. A priori, we can say that this must be an error; the last vertical must fall nearer the front legs, because the forehand is heavier than the hind-quarters.

Another author, Borelli, pretends that this line falls at the center of the quadrilateral formed by the four legs. This is absolutely impossible, as it is proven that the forehand is heavier than the hind-quarters, and in consequence the vertical line must fall nearer the front legs. Von Heydebrand, in his excellent work on the "haute école de Vienne," pretends that this line passes through the only spinous process of the vertebra which is vertical, which, according to him, is the fourteenth. If this were true, the line would fall as Borelli pretends.

General Morris and the riding master Boucher have determined the weight of the forehand and the hind parts by actually weighing horses on scales with movable platforms. They have ascertained by experiment the weight that the two bipeds have to bear separately.

The weighing machines, says General Morris, were placed in such a manner that the front legs of the horse stood upon the middle of the first set of scales and the hind legs upon the middle of the second. The two platforms

were exactly on the same level and belonged to balances of the same proportion.

A saddle mare of ordinary conformation, good head and neck, a little long in relation to the rest of the body, remaining saddled and bridled, was placed upon the scales with the following result:

Keeping her head in the ordinary position rather low than high.

I. Forehand, 210 kilograms; hind parts, 174 kilograms; total, 384 kilograms; difference on forehand, 36 kilograms.

There was a fluctuation of three to five kilograms which was fixed alternately upon the forehand and the hind parts, caused by the movement of the bowels and respiration.

Her head was lowered so that the top of her nose was at the height of her chest, with the result that the forehand was overcharged with eight kilograms, of which the hind-quarters were relieved.

II. Forehand, 218 kilograms; hind parts, 166 kilograms; difference on forehand, 52 kilograms.

Her head was then raised until the tip of the nose was at the height of the withers, the forehand then threw back ten kilograms upon the hind parts.

III. Forehand, 200 kilograms; hind parts, 184 kilograms; difference on forehand, 16 kilograms.

Her head was placed as in the first case, and by the action of the bit flexed on the neck, she then threw back upon the hind-quarters a part of her weight equal to eight kilograms.

IV. Forehand, 202 kgs.; hind parts, 182 kgs.; difference on forehand, 20 kgs.

These results obviously prove that the more the head is elevated—if it is natural and not by support of the hand—the more the weight of the head, neck and shoulders is equally distributed upon the limbs.

After these experiments M. Boucher mounted the mare with the following results:

V. Forehand, 251 kgs.; hind parts, 167 kgs.; total, 148 kgs.; difference on forehand, 54 kgs.

The rider, sitting in the academic position, had distributed his weight of 64 kilograms in the following manner: Forty-one kilograms upon the forehand and twenty-three upon the hind-quarters.

Being seated upright and bringing the upper part of his body slightly to the rear, M. Boucher made ten kilograms pass back to the hind quarters; by bringing back his horse's head in direct flexion he further overcharged the hind-quarters by a weight of eight kilograms; total of eighteen kilograms. With these positions we have:

VI. Forehand, 233 kgs.; hind parts, 215 kgs.; difference on forehand, 18 kgs.

More recently General Morris and the Veterinary in Chief, M. Bellanger, obtained with twenty-two horses the following results:

	Head at 45°				Head Up and Slightly Flexed on Neck				Head Depressed and Flexed on Neck			
	Forehand	Hindparts	Total	Difference	Forehand	Hindparts	Total	Difference	Forehand	Hindparts	Total	Difference
VII. Average of 11 horses, good conformation, head and neck light	260	195	455	65	250	205	455	45	267	188	455	79
VIII. Average of 11 horses, good conformation, neck short and head large	246	200	446	46	240	206	446	34	250	196	446	54

All these experiments demonstrate to us the great influence the position of the head and neck has upon the weight borne respectively by the fore and hind legs.

It is remarkable that in case V, the rider distributed his weight of 64 kilograms in such a manner that 41 kilograms was supported by the fore legs, and only 23 by the hind legs, while by the means employed by the rider in case VI he lightened the fore legs of 18 kilograms.

From I and III, we see that in raising the head the forehand is lightened by 10 kilograms. The results obtained in cases V and VII demonstrate still more clearly the important influence that the displacement of the head and neck has upon the distribution of the weight upon the fore and hind legs.

In case V the forehand bears 54, and case VI 18 kilograms more than the hind-quarters, a difference of 36 kilograms.

From the series of experiments of General Morris and M. Bellanger, it results that the horses having the head and neck light (neck generally light and long), the forehand is lightened by ten kilograms, when the head is up and slightly flexed on neck; and only of six kilograms in those horses having the neck short and the head large.

This does not correspond entirely with the conclusions of General Morris, when he said "that the weight of the forehand exceeds that of the hind-parts by about one-ninth of the total weight of the horse, and that the change in the position of the head puts a weight of ten kilograms of the forehand upon the hind parts, etc." These conclusions only apply to those horses that have a thick neck and heavy head, and not to those that have a light head and neck.

From the weight given in cases VII and VIII, one concludes that horses with light heads and long necks can relieve the forehand by an equal distribution among all the limbs of about one-seventh of the total weight, while those horses with thick, short necks and heavy heads, of only about one-ninth. One sees, therefore, how this balance maker is more powerful in the first case than in the second.

When one considers that the weight of the head of a saddle horse is from fifteen to sixteen kilograms, and that this weight acts at the end of the arm of a lever formed by the cervical vertebra, which in being stretched out or carried back lengthens or shortens the arm, one easily sees the great influence that the displacement of the head exercises upon the situation of the center of gravity. This influence will be so much greater when the arm can stretch well out and draw itself well back.

Long necks are relatively better able to draw up and back and to stretch out than short necks. It goes without saying that horses that have this advantage of conformation are the horses most desirable for the saddle.

In Fig. A, let P be the weight of the head, OA the direction and length of the neck, then the weight P acts upon the arm Oa. If, on the contrary, the direction and length of the neck are represented by OB, the arm of the lever will only be Ob.

However important the weights of General Morris may be, it is to be regretted that he did not establish at the same time the bases of support, or better yet, the distance of the vertical line passing through the center of the front hoof from the vertical line passing through the center of the hip joint on the same side.

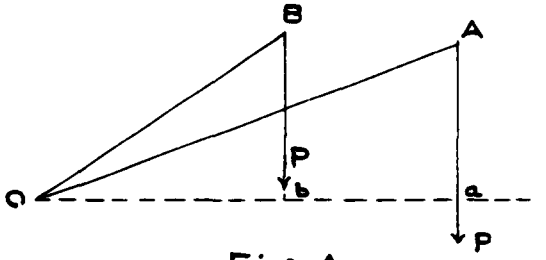


Fig. A.

We would then know where to find the line of gravitation of the horse, and also that of the horse with the weight he bears. Accordingly what we must endeavor to attain is as follows:

The weight that the horse carries should be distributed upon the front and hind legs in the same proportion as his weight is distributed when not mounted and at liberty, having the head and neck inclined at an angle of forty-five degrees, and the base of support forming a rectangle, with the legs neither stretched out nor brought too far under.

In admitting this, we must endeavor in consequence to place the weight which the horse must bear, and especially the lifeless weight, in such a manner that the vertical passing through the common center of gravity of the horse and the weight which he bears coincides with the vertical passing through the center of gravity of the horse alone.

Not having occasion to make similar weighings as those of General Morris, we have endeavored to utilize his results in seeking for the line of gravitation in some blooded horses, using photographs to determine the distance between the middle of the front hoofs and the vertical plane passing through the center of the hip joints.

We have found that this distance is generally one sixth less than the height at the withers. For example, with a horse of 1.55 m. at the withers, we have

$$1.55 \text{ m.} - \frac{1.55 \text{ m.}}{6} = 1.29 \text{ m. to } 1.30 \text{ m.}$$

In Fig B let AB be the distance from the middle of the front feet to the vertical plane passing through the hip joints; P the weight of the forehand; Q the weight of the hind-quarters. Then the distance of the line of gravitation of the horse from the middle of the front feet (x) will be

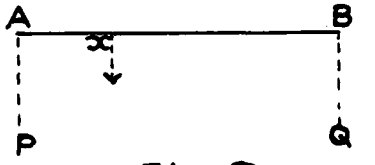


Fig. B.

$$Px = Q(AB - x)$$

$$x = \frac{Q \times AB}{P+Q}$$

Taking the average of the eleven horses of good conformation of General Morris, having the head and neck light:

Total weight (mean) 455 kilograms.

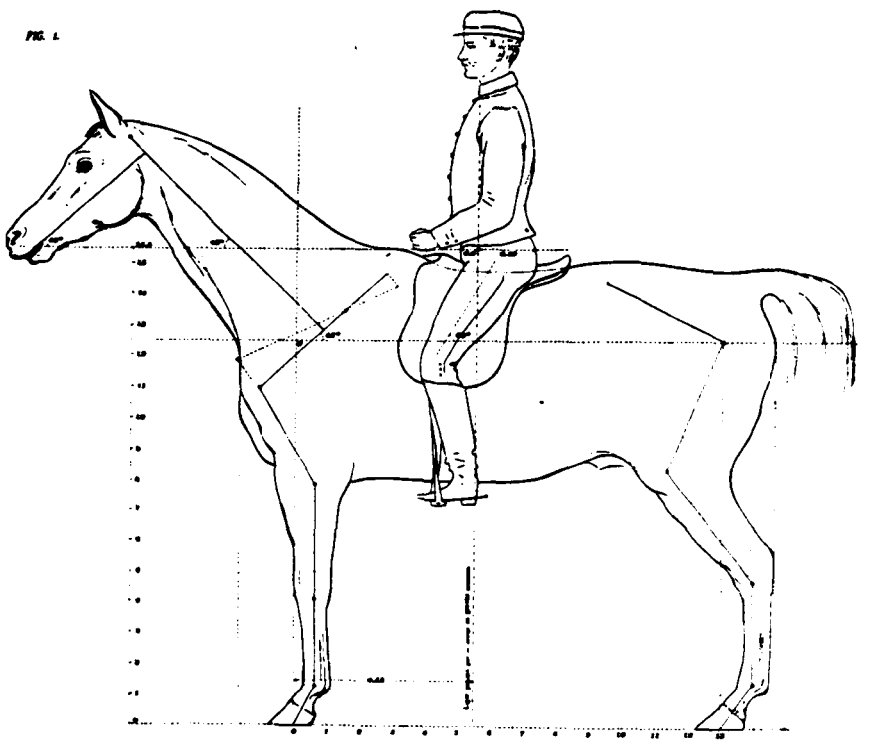
Weight of forehand, 260 kilograms.

Weight of hind-parts, 195 kilograms.

With the head placed at forty-five degrees (the nose at the height of the withers).

Taking the average height at the withers as 1.55 m., and the distance AB as 1.30 m., we find for x

$$x = \frac{195 \times 1.30}{455} = 0.55 \text{ m.}$$



Admitting that the horse was mounted by a rider of sixty-four kilograms; distributing his weight so that forty-one kilograms falls upon the forehand and twenty-three upon the hind-parts (see Case V), then calling the distance between the common line of gravitation and the vertical plane passing through the middle of the front legs y, we have:

$$(260 + 41)\, y = (1.30 - y)(195 + 23) \text{ then}$$
$$y = 0.55 \text{ m.}$$

With these conditions the line of gravitation of the horse alone, and that of horse and rider together superpose, which is exactly what is desired, as previously stated.

Gaubaux and Barrier, who have made similar weighings as those of General Morris, have found everything of importance to determine the situation of the line of gravitation in the horse.

They have taken a saddle horse of good conformation and equilibrium, that measured 1.55 m. at the withers and croup, and 1.53 m. from the point of the shoulders to the point of the buttocks.

They weighed this horse when saddled and bridled, with the neck at forty five degrees and the head held high. The base of support was equal to 1.20 m. Total weight of 445 kilograms was distributed as follows:

Upon the front legs	257 kilograms
Upon the hind legs	188 kilograms
Total	445 kilograms

In a horse fulfilling these conditions the line of gravitation must fall at 0.51 m. to the rear of the front legs.

As the horse is not as long as high, it is evident that the base of support was shorter than that which we have previously given. The horses that we recently considered were all higher than long as is general with horses of blood.

The forehand of the horse used in this case by Gaubaux and Barrier weighed sixty-nine kilograms more than the hind-parts. In consequence the forehand could send upon the hind-parts about $\frac{1}{6.5}$ of the total weight.

Suppose that the horse was mounted by a rider weighing sixty-four kilograms, taking a similar position to that of Baucher, his weight being distributed in such a manner that forty-one kilograms would be on forehand and twenty-three on the hind parts.

$$\text{Then } (257 + 41)\, y = (1.20 - y)(188 + 33)$$
$$y = 0.5 \text{ m.}$$

With this supposition the rider, therefore, finds himself seated a centimeter too close to the forelegs.

It appears to us to be also of a very great importance, especially for the army horse, to regulate the pack—the dead weight—in such a manner that its distribution will be made in proportion to the natural distribution on the legs.

It is, however, absolutely injurious to burden the flanks of the horse, as the floating ribs fulfill an important function in respiration.

The above only relates to the distribution of the weight upon the fore and hind legs when the horse is standing in place. We shall now proceed to the requirements for the distribution of the weight when the horse is in motion or about to be put in motion.

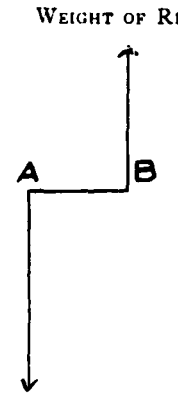


Fig. C.

This permits us some reflections upon the position of the rider on the horse.

In conjunction with that which we have previously stated concerning the necessity of carrying the weight forward when in motion, and this in accordance with the speed of the gait; one should not appreciate too much this advantage by confirming a forward seat in the saddle, but should place some of the weight over the short ribs.

This position demands that the thighs descend well down, and in consequence the knees are low. It is then that the

rider—provided that he continues to be well placed upon the short ribs—will know the best way of sitting the horse with the entire length of his legs, keeping contact at all points with the saddle and the hair of the horse.

Not only is solidity thereby gained, but also harmony with the movements of the horse.

The horse in all his gaits brings the weight forward. The rider should endeavor to do likewise.

The more the lines of gravitation are brought together, the smaller will be the arm of the couple AB, at the moment when the horse by his movement elevates the rider. (See Fig. C.)

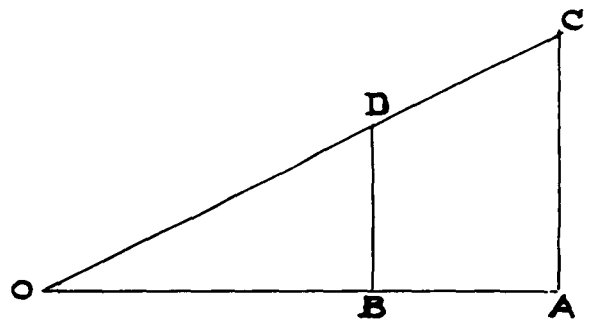


Fig. D

However, it is clear that if the horse extends the long muscle of the back (longissimus dorsi) and if the rider remaining seated at A, is elevated to the height of AC from the saddle, when he places himself at B, he will only be elevated to the height of BD. In the first case the horse acts as the lever OA, in the second as the lever OB. (See Fig. D.)

Hence the forward seat in the saddle is very important, not only to develop the gait of the horse, but also to give firmness to the seat and flexibility with the movements of the horse.

For a rider of average height and good build, we would fix the desired situation of the thighs at about sixty degrees.

There are riders, however, who are not built so as to be comfortable in this position.

The forward seat in the saddle is the proper seat for the military rider in order that he may handle his horse properly, either in individual combat or in the charge, using the saber (thrusts) and the lance.

We leave to the amateur rider the leaning back seat, which brings nearly always the lower part of the legs forward and the knees high, and makes him too late in using his legs as an aid, if the horse is active and clever.

Very often the saddle which one uses prevents one from taking the desired position. The pommel may be too high and the seat inclined from front to rear, rather than from rear to front, in such a manner that the rider must make an effort to keep his thighs in the desired direction. Now any muscular effort is injurious to the elasticity of the seat.

What has been said in regard to the center of gravity guides us when referring to equilibrium.

In this respect we find in many works on equitation irrational ideas.

In order to cite an example: A German author, Plinzner, who has made quite a reputation by his works on equitation, writes on page 42 of his "System der Pferde-Gymnastik":

"One understands by balance in station or in movement, the attitude of the horse in which the weight borne by the legs is equally distributed upon them. As the front legs in nature support more weight than the hind legs, we cannot obtain equilibrium or balance until we place the horse in such a position that the center of gravity is near the hind legs. This artificial attitude which we exact of the horse is called the balance position. It must be the result of a certain contraction of the vertebral column by which the forehand is brought to the rear and the hindparts carried to the front. At the same time the latter lowers itself in relation to the former because the hindparts in flexing its articulations brings itself under the body."

In this we do not agree with Plinzner. If the horse stands in the artificial attitude designated by Plinzner—during which

the weight is equally distributed upon the four supports—he remains in stationary equilibrium, as truly said the only equilibrium conceivable, although in equitation we often speak conventionally of equestrian equilibrium or balance. What he must mean by this equilibrium we shall speak of later.

It goes without saying that stationary equilibrium can only exist in station, and never with movement, the horse not being able to move without breaking this equilibrium.

It is therefore an error to pretend that the horse can move in stationary equilibrium; that is to say, when the weight is equally distributed upon the four supports, and in consequence the line of gravitation falls at the intersection of the diagonals connecting the supports.

As in station, so in motion the horse can hold himself in equilibrium as long as he does not fall.

To break and reëstablish equilibrium alternately, is what produces movement. It cannot, therefore, constitute movement unless the equilibrium be broken.

We do not understand by moving in equilibrium that the movement is made in such a manner that after every rupture of equilibrium it is reëstablished anew and immediately after.

It is therefore incorrect to say that it is only in such and such a condition that the horse moves in equilibrium. No matter how the horse moves, he moves in equilibrium; that is to say, in breaking and retaking alternately equilibrium.

If the weight is equally distributed upon the four supports, the horse is in the correct position of rassembler in place. Sometimes there are different degrees to attain; for example, in order to execute the turn on the haunches, it is necessary to rassembler in such a way that a great part of the weight may be thrown upon the haunches, putting strongly in action their power of support.

The more vigorous the succession of rupture and reestablishment of equilibrium follow each other, the more unstable will the equilibrium be. It can, therefore, be said "that the instability of the equilibrium measures the speed."

Goubaux and Barrier say it is clear that if by displace-

ment or situation, more or less elevated, the center of gravity is carried without the base of support, the horse will be compelled to move his legs more rapidly in order to support the mass; otherwise he will fall.

The race horse stretches his body, extends his head and neck and appears almost to lie upon the ground so that he can bring as far forward as possible the center of gravity in the direction of the movement.

The school horse moves in a vigorous way in order to easily execute the various movements exacted at any instant by his rider. His gaits are shortened or lengthened, his equilibrium more secure and the displacements of his center of gravity less extended but more numerous.

The race horse, by virtue of his speed and instability of his equilibrium, can scarcely move except upon a straight line. The least lateral displacement of his center of gravity made in a sudden manner will certainly give him a fall.

In order to go to the rear, the horse must throw on the hind legs a part of his weight, which in station is borne by the forelegs. The more weight he puts on the hind legs the more quickly will he move to the rear.

In order to be correct in movement, it is only necessary to speak of a good or bad distribution of the weight.

According to us, the distribution is good if in forward movement the forehand never carries more weight than is necessary for the speed of the gait exacted.

If the horse carries too much weight forward, it manifests itself by a pronounced support upon the bit; if, on the contrary, he carries too little weight forward, the rider perceives it by a failure of contact with the bit.

If one wishes to call equestrian equilibrium the proper distribution of weight upon the fore and hind legs, as we shall determine later, we could be guided accordingly; but we shall never accept the stationary equilibrium of Plinzner for movement.

The truth compels us to say, however, that Plinzner is not the only one who has advanced similar ideas.

As long as the horse does not fall, he moves in equilibrium. It may be that he bears too much or too little weight

on the fore legs; and we cannot consider a horse well trained or well ridden that is in this condition in any of his gaits. He should be able to move with a correct distribution of the weight, that is to say, proportioned to the speed the rider desires, and at any instant to increase or diminish the gait.

If we consider that the weight of the head and neck of a horse amounts to a ninth or tenth of the total weight, we can readily understand the great importance of knowing how to utilize their displacement.

To lengthen and shorten the head and neck is the powerful means which the rider disposes, or endeavors to dispose, in every case, in order to regulate the distribution of the weight in displacing the center of gravity; and this in direct relation with the force of propulsion and the power of support of the hind-quarters.

In an active horse, intended for no other use than the saddle, the force of propulsion is generally well enough developed by nature, or is easily developed. It is not so, however, with the power of support and tension.

It is necessary that the rider have great tact and experience in order to develop a horse as he wishes.

Most saddle horses, hunters and race horses, leave much to be desired in this respect. These horses, in most gaits, bring the hind legs under the body by the articulation of the pelvis with the sacrum and loins, without the other joints assisting therein sufficiently.

To the failure of action in the hocks and knees we attribute, in many cases, forging, and, what is still more to be regretted, the premature break down of the legs; because the hind-quarters do not spring as they should, but give and take the shock, instead of preventing it. These horses have the hind-quarters and back stiff. They very often have an arched appearance, and one cannot succeed in making them take the placer until they have learned to flex properly the joints in the hind-quarters.

If the horse does not give way to the placer, one can never hope to obtain the rassembler, which is certainly, as

expressed by Goubaux and Barrier, "the true position preparatory to all movement."

It is a torment for a horseman who has equestrian tact to ride a horse that cannot give way willingly to the rassembler, though the horse may be of the highest breeding. Such a horse can only be to the rider a means of transportation, instead of giving him, by his elasticity and lightness, one of the greatest pleasures he can experience.

We consider the piaffer as the best means of bringing the horse into equilibrium; also in order to teach him to properly place the hind legs under the center, so as to obtain the rassembler, if he is to do it in the highest degree.

Now the correct rassembler in its various degrees is the gem of feel, equilibrium and training. In exercising the horse at the piaffer, we not only develop the power of support and the suppleness of the hind-quarters, but at the same time the direct flexion of the neck. The suppling of the hind-quarters teaches the horse to flex all his joints in those parts. Bringing the head in on the neck fixes the head and neck, which is an indispensable condition for all saddle and army horses.

We can consider the neck as being to the horse as the helm is to a steamboat when backing. It is impossible to keep the horse in the direction desired if the neck is weighed down, just as it is impossible to keep the boat when the helm is slack.

The fixing of the neck in addition obtains for us a quiet carriage of the head, which is an indispensable condition in regulating the gaits. Hence all the lateral flexions of the neck, as practiced by Baucher should be avoided.

Summing up, we arrive at the following conclusions:

1st. If the horse is standing in place in a natural attitude, the rider must endeavor to sit in the saddle in such a manner that the vertical line passing through the common center of gravity of the horse and rider, coincides with that passing through the center of gravity of the horse.

2d. If the horse is in motion the rider must sit forward in the saddle in order to facilitate the gait, and this in relation to the amount of speed desired. If the forward position in the saddle in combination with the other means is not sufficient for the speed desired, the rider must lean the upper part of his body forward. If the horse of his volition carries too much weight forward, the rider must correct same by bringing same to the rear, in order to obtain the distribution required. This overweight on the forehand of a part of the mass manifests itself by support upon the bit.

3d. If the horse holds himself back, in other words, is not inclined to push enough weight forward in proportion to the speed desired, he is what is called behind the legs and behind the bit. Then the force of propulsion of the hind-quarters, corresponding with the tension of the long muscles of the back (longissimus dorsi), must be accelerated, for the reason that when the horse bears too much weight upon the haunches, he commences it by relaxing the back, which gives it a convex form, while if he stretches out the back it will take the concave form, pushing the mass forward.

The tension of the long muscles of the back, therefore, corresponds with the force of propulsion and their relaxation with the force of support (see Chapter II).

The rider who possesses equestrian tact will know how to bring more or less of the weight forward in proportion to the relaxation on tension of the back. It is the alternate tension and relaxation of the back which constitutes the elasticity of the horse. This holds equally as well to the back of the rider, who in hollowing out the lines bends the back by contracting the long muscles on each side of the spine and rounds it in relaxing them.

We must exact of the horseman who is training horses that he will have at least enough equestrian tact to feel the tension and the relaxation of the back of the horse in the diagonal gaits, also the alternation of the fixed points of the muscles of the back in the bounding gaits and leaps.

What we have said of the tension and relaxation, and of the concave and convex form of the back does not agree with what is generally admitted. We leave the proof of what we advance to the following chapter. The errors of which we have made mention we can attribute in a good part to the would be explanations or theories which cannot stand a vig-

orous test. In general, those who teach equitation require a little too much that we believe them on their word. The authoritative position of the profession is not there for nothing.

CHAPTER II.

THE AIDS OF THE RIDER.

As we have demonstrated, the purpose of all training is to obtain from the horse by means of the aids, the displacement of the center of gravity at the will of the rider.

The aids which the rider uses in order to obtain this displacement are:

The shifting of the weight of the rider.

The legs with the spur.

The bit with the reins.

It goes without saying that a good rider uses these aids in perfect harmony.

In the first chapter we treated of the transfer of the weight. In order to fully explain the other aids it is necessary to recall that the bones which form the skeleton of the horse are levers, articulating by means of the muscles, which contract and relax according to the will of the animal.

The muscles of the locomotive apparatus, in contracting, tend to draw together the two extremities toward the middle, or one extremity on the other.

The extremity which, in the last case, is not displaced, is called the origin, or fixed point, while that which is displaced is called the termination, or movable point.

The animal can, by his will, make the fixed point the movable point, and vice versa; for example, the levator humeri muscle, or common muscle of the arm, neck and head (Fig. 2a), can be a motor of the head as well as of the arm. In order to be one or the other, the muscles which fix or make immovable the head or the arm, would be contracted to form the fixed point.

In general, when muscles contract they swell and harden; when the contraction ceases they relax, and in consequence stretch out.

Almost all the muscles of the muscular system are in pairs, that is to say, the same muscles are found on each side of the body.

Muscles which in contracting produce a contrary action are called antagonistic muscles; those which coöperate with this action are called congeners.

Muscles in pairs are able to be congeners or antagonistic according to the will of the animal; for example, the flexors

and extensors of the neck are antagonistic in the direct flexion, while the flexors and extensors of the same side are congeners in the lateral flexion, and at the same time antagonistic to those of the opposite side of the neck.

Muscles are always congeners when they contract in order to constitute a fixed point; for example, the horse, in order to rear, especially uses the long muscles of the back (longissimus dorsi, Fig. 3aa), so as to raise the forehand. These

muscles make their fixed point in the hind quarters, and in order to constitute this fixed point they need the coöperation of the muscles of the abdomen and those of the croup; while to raise the hind-quarters they make their fixed point near the withers.

It is especially in jumping and in the bounding gaits that the rider distinctly feels the alternate change of the fixed points of the longissimus dorsi muscle.

In general, it will be well to consider at all times that all movements are produced by a complex action of muscles.

EFFECTS OF THE SPUR AS AN AID.

The spur is the aid which reënforces the leg. The leg alone, although not so strongly, has a like effect. We shall, therefore, limit ourselves to explaining the effect of the spur.

We recollect that the pelvis articulates by the aid of the sacrum with the last vertebra of the loins. As the sternum and the true ribs form an immovable whole with the vertebral column, we easily perceive the important functions of the muscles of the abdomen, which are attached at the forehand of the sternum and at the hind-quarters to the pelvis.

In general the muscles of the abdomen support, indirectly, the vertebral column, when it is curved by the contraction of the muscles of the back.

If the muscles of the abdomen have their fixed point at the forehand when contracted, they articulate the pelvis, and by so doing bring the hind-quarters toward the center.

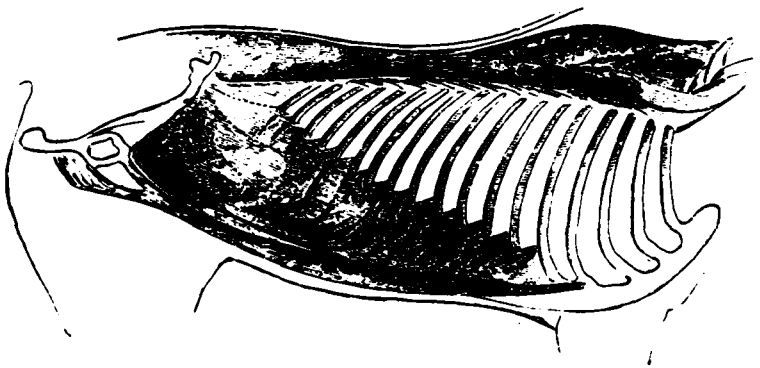
From this we can explain the effect of the spur in the following manner:

The spur stimulates the superficial muscles of the abdomen. The deeper of these muscles help to bring the hind legs forward when their fixed point is near the forehand.

Under the skin we find among others, the obliquus abdominis externus. It commences near the fifth rib, extends the length of the stomach, and ends near the angle formed by the hip and the pubis (Fig. 3c).

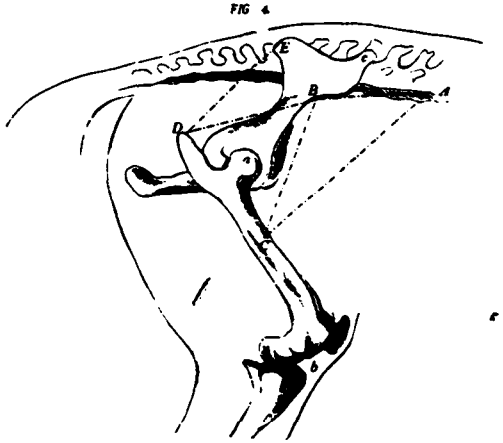
Then follows the rectus abdominis. It extends from the sternum to the pubis (Fig. 3b).

FIG 3



In contracting, these two muscles make their fixed point near the ribs and sternum, bringing the pelvis forward and in so doing the entire hind-quarters (Fig. 1).

FIG 4



They are assisted in this by the obliquus abdominis internus (Fig. 3d) and by the psoas parvus, which extends from the loins to the hip, when their fixed point is near the loins. If, on the contrary, they make their fixed point near the hip,

they prevent the muscles of the abdomen in acting too strongly, and forcing the back to raise itself too much.

In order to bring individually the hind legs forward, the horse contracts the psoas magnus, which extends from the loins to the femur and the iliacus, which extends from the ilium, last lumbar vertebra and sacrum to the femur. It is especially by these two muscles that the femur is flexed at the hip joint.

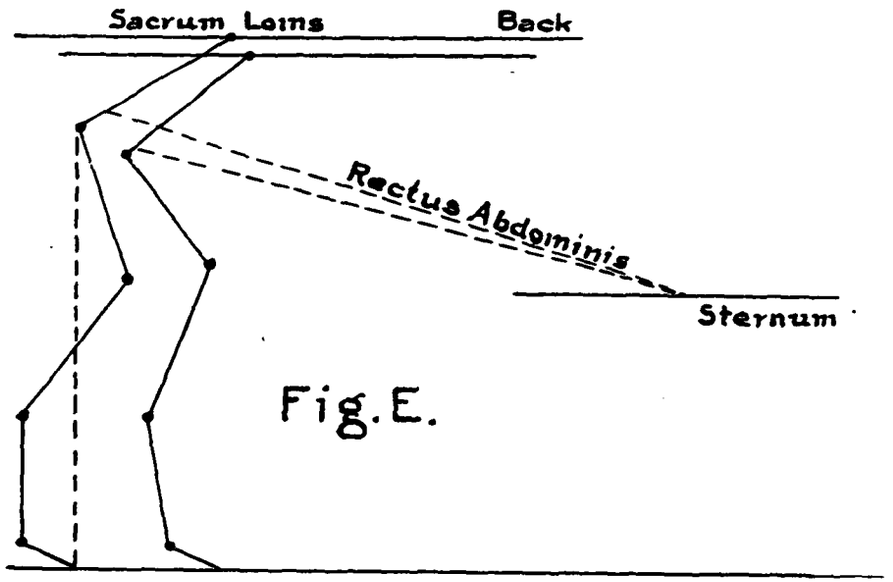


Fig. E.

All flexions of the hip joint have as a direct consequence the flexion of the stifle, hock, pastern, and foot.

Knowing the preceding, we admit, as it appears to me, that the prick of the spur, received directly by the superficial muscles, is transmitted from there directly or indirectly by the nerves to the two principal muscles of the abdomen mentioned previously; hence the rectus abdominis has a predominating influence in bringing the pelvis forward, as in the rassembler and all forward movement.

The spur is the great accelerator of the flexors, not only of those of the abdomen, but of all the others, and produces a harmonious relation between them.

As the horse puts himself in rassembler by contracting the flexors and as "the rassembler is the correct position preparatory to all movement," we can readily understand to what extent the spur is a powerful aid to the rider, when he understands its use.

When the muscles of the abdomen contract, the muscles of the back relax and vice versa. These muscles are antagonistic, and in order to contract one the animal must relax the other.

If the long muscles of the back (longissimus dorsi), which are situated on each side of the vertebral column, contract, the back becomes concave; and if they relax, it becomes convex.

The contracted muscles of the back correspond to the relaxed muscles of the abdomen; and the relaxed back to the contracted muscles of the abdomen.

Plinzner and many others believe the contrary. Consequently he errs in his statement of the movement of the back. He believes that when the back is convex the muscles are contracted, and when concave they are relaxed. In fact it is just the opposite.

In order to understand completely the effect of the spur, it is of interest to know that the muscles of the back are in direct relation with the gluteal muscles of the croup, which concur with the other extensors to communicate to the body the forward impulse in opening all the locomotive angles.

In locomotion, the alternate closing and opening of the angles corresponds, respectively, to the contraction of the flexors and the extensors.

A part of the muscles of the back extend toward the neck (Fig. 2a'), ending near the second cervical vertebra. In general, all the muscles of the neck which extend it are found above the cervical vertebra, while those which flex it are found below; consequently the muscles under the neck are the antagonistics of the others. One can now readily understand how and to what extent the flexors of the neck are in

direct relation with the muscles of the abdomen, and in some way congeners with them; while the extensors of the neck are generally congeners with the muscles of the back

In all the vigorous movements of the horse, the motive force manifests itself very visibly by its function of support, followed by its function of propulsion. The longissimus dorsi, the gluteals, and the extensors of the neck and head coöperate as agents of propulsion; while the muscles of the abdomen, the flexors of the croup, hind legs, neck and head, with the psoas muscles, all working very actively and in harmony, as agents of support.

It is necessary to use the spur and the leg also as near the girth as possible. The impulse then given will make itself felt in the most efficacious manner.

According to our way of looking at the question, the spur, well employed, is, or should always be, an aid, because even when one uses it repeatedly and vigorously, in such a manner that it becomes a punishment, the object is no more than to obtain the contraction desired. Hence, the direct effect must be that of obedience.

It is not without importance to observe that the horse, from the effects of the spur, brings his hind quarters forward as far as possible; and in order to obey the aids, to send the center of gravity still more to the rear so as to raise the forehand from the ground, he will use the long muscles of the back, making their fixed point near the croup.

It is then that the muscles of the abdomen, together with the gluteal and psoas muscles, will all contract so as to assure to the longissimus dorsi the fixed point which it needs to enable it to raise the forehand.

Finally, in order to get the most out of the locomotion of the horse, it is of great importance to have always present an ardor or willingness on the part of the animal. In all the vigorous movements of the horse, the flexors of the neck, head, and croup, with the psoas muscles, must work in harmony with the powerful muscles of the abdomen; just as the extensors of the head, neck, and croup (gluteals), coöperate with the powerful muscles of the back.

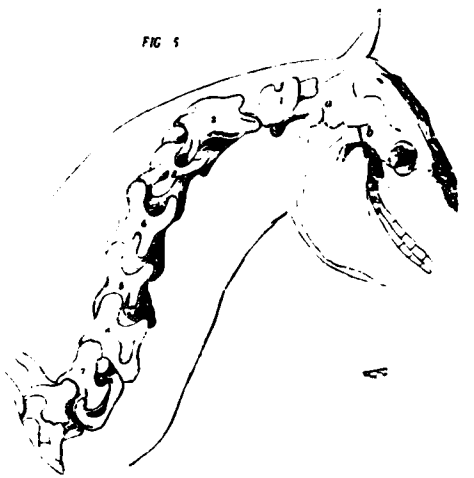
THE REINS (BIT AND BRIDOON) AS AN AID.

The articulation upon which the reins act are:

1st. The maxillary joint of both sides (Fig. 5 b).
2d. The occipito-atloid joint (Fig. 5, a-1).
3d. The atlo-axoid joint (Fig. 5, 1-2).
4th. The articulation of the other cervical vertebra.

We can explain the effect of the curb or of the bridoon, by means of the reins, in the following manner:

In tightening the reins, the bridoon and more strongly the curb, presses upon the bars of the lower jaw. In order to escape from the disagreeable sensation caused by this pressure the horse separates the lower jaw from the upper



jaw by means of the sterno-maxillaris muscle, which extends from the sternum to the lower jaw. In contracting, this muscle makes its fixed point near the sternum. If at the same time the horse relaxes the masseter muscle—which binds the two jaws—he will open his mouth.

In this case he may continue to contract the extensors of the neck and muscles of the poll at the same time. The horse seeks to escape as much as possible the effect of the bit—if he contracts completely the sterno-maxillaris and at

the same time the masseter, the extensors of the neck become relaxed and the flexors can contract (direct flexion).

Then the mouth of the horse will only open a little, and will remain so for an instant. The getting in hand will be perfect. This is direct flexion, which is incontestably one of the best means of obtaining obedience from the horse, and the first condition of all good equitation. It overcomes the resistance at the poll, which annuls all action upon the hind-quarters. We may say that the resistance at the poll closes the door which opens upon the hind-quarters. It is, therefore, a very great advantage to overcome this resistance.

We can overcome the tendency of the horse to open his mouth too wide by the use of a nose-band.

A well trained horse placed in hand must not separate the lower from the upper jaw more than will be necessary to obtain the flexion desired. He must yield to the least pressure of the curb, only opening the mouth slightly, and should champ (chew, or open and close) it at the same time.

From what has been previously said on the displacement of the head and neck in order to carry weight to the rear, we can readily understand the great importance of direct flexion when we wish to rassembler the horse. The true rassembler cannot exist without the head being flexed on the neck.

LATERAL ACTION OF THE REINS.

If the reins are employed laterally, not only the poll, but also the neck, flexes laterally, and, as little as this may be, the horse must relax the muscles of the poll and neck of one side and contract those of the other side, in order to obey the reins of the latter side.

As we have previously said, the muscles which have been antagonistic in the direct flexion are congeners in the lateral flexion, as they are found on the same side of the neck. For example, in the right lateral flexion, the extensors and flexors situated on the right side of the neck contract so as to obtain the lateral flexion of this side of the neck, while the extensors and flexors found on the other side relax.

The lateral flexion is correct if it is made at the poll without the neck bending. Hence, all that we have said only relates to the muscles of the poll.

For the effect of the reins in the changes of direction, we induce the horse to carry the weight of the head and part of the neck towards the side toward which we wish to go. This is, therefore, nothing more than a transfer of the weight in order to displace the center of gravity.

DIAGONAL ACTION OF THE REINS.

In regard to the reins as an aid, it is of importance to note that they act diagonally upon the hind-quarters; that is to say, the right rein upon the left hind leg, and the left rein upon the right hind leg. When using the reins in this manner the head must not be displaced laterally.

We can understand this in recalling the effect of the opposite rein, which we use in order to keep a horse steady when he fears any object

If, for example, the object which he fears stands to his right, it is not by the right rein and left leg that a skillful rider prevents him shying around it, but by the left rein and left leg, in order to hold the right hind leg near the object that the horse wishes to avoid.

For the same reason in all changes of direction and turning movements, and especially in the pirouettes, it is necessary to use the outside rein or rein of opposition (or of support) in agreement with the inside leg of the rider, so that the pivot — the inside part of the hind leg — does not deviate.

This does not prevent the change being principally indicated by the inside or direct rein; nor the use of the outside leg of the rider to prevent deviations of the croup to the outside.

All other ways of handling the horse we reject absolutely, as they are only conventional, and in consequence entirely dependent upon the good will of the animal. The use of the direct rein brings the head of the horse towards the side we wish to go, and procures obedience by the displacement of his center of gravity.

The manner of using the reins determines whether their effect will be lateral or diagonal.

It is generally believed that if a horse does not obey to one rein, the resistance is from the same side. This is a gross error. If the horse does not give, for example, to the right rein, it is from the left side that he resists by contracting the muscles of that side. If he gives to the pressure of the right rein, it is caused by the pressure giving him a certain amount of pain on the right bar, which in order to escape he relaxes the muscles of the left side of the neck, especially at the poll, so that the muscles of the right side can contract. He then turns the head to this side, or he obeys the rein.

It is generally recognized that every horse has an easy and a difficult side. If the horse does not give to the aids of the difficult side, it is not because he does not contract the muscles of that side, but because he contracts too strongly the muscles of the other side instead of relaxing them.

It is hence true that the resistance accumulates in the easy side and not in the other, as is generally supposed.

Although we can obtain the contraction of the muscles of the difficult side, by the aids of that side, we can also, if the horse resists with tenacity, facilitate the contraction wished by relaxing the antagonistics on the other side by use of light cuts of the whip, or hand, or by rubbing, at the place where these muscles are found.

This relates equally as well to the extensor muscles of the neck, situated over the cervical vertebra when they contract so that the flexor muscles found underneath cannot contract to obtain the direct flexion.

It is necessary to enter too deeply into the details of anatomy in order to explain more fully what we recommend.

Finally, it may be said that during training it will always be necessary to represent to the mind the position that the skeleton or a part of it must take in order to satisfy our demands. This will help us in our control over the muscles, so that we can obtain different attitudes in place or in motion.

After having read the preceding, we can well say with the Germans: "Grau ist alle theorie." We are the first to give the place of honor to practice.

However, we agree that theory must complement practice, and that the proper time to apply theory is necessarily at the beginning. Theory enables us to account for what we demand in training or riding a horse, and especially in order to know if the means we employ will produce the results.

For all serious riders, who like to know the reason why, it is pleasant and interesting to think about what we demand, and to reflect or consider on the means we employ to make ourselves understood by the horse in accounting for our aids.

It can only increase the confidence in the methods the rider uses when he knows that they are founded upon logical and rational principles.

On the whole, in order to vanquish the resistances of the horse it is necessary to know what means he employs to resist us. Theory must be the guiding star of our practice.

HOW SHOULD MILITARY HISTORY BE STUDIED?

A PRACTICAL EXAMPLE TAKEN FROM THE SOUTH AFRICAN WAR, 1899, AND INTENDED AS A GUIDE FOR INDEPENDENT STUDY AND AN AID TO THE DRAFTING AND SOLVING OF PROBLEMS AND CONDUCTING OF WAR GAMES.

By MAJOR HOPPENSTEDT,
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INTRODUCTION.

MILITARY HISTORY is an unexcelled teacher for the tactician. This statement must be somewhat modified, however, for it will ever remain a fruitless study to the superficial reader. In order to obtain actual instruction from it we must *search the records critically and ponder them long and earnestly.*

The primary aim of this little work is to teach the correct method of doing this.

To evaluate correctly and to understand the true relation between cause and effect is a difficult task. The beginner especially is prone to allow his judgment to be too easily influenced by success or failure, losing sight of the fact that many a victory has been gained in which the decision has fallen to this or that side not because of, but in spite of the tactics of the victors.

The layman likewise frequently falls into the habit of insisting upon formulating hard and fast general principles from particular instances. It cannot be denied that from a multiplicity of cases certain rules have been formulated which have found their final condensation in the regulations—thence the derivation of the word "regulations"†—but it

*Translated from the German, for the Cavalry Journal, by Sergeant Harry Bell, Corps of Engineers.

†The word "regulations" in German has the same stem as the word rule."—*Translator.*

becomes apparent from their very origin that these possess only an average value. Especially applicable to the realm of tactics is Field Marshal von Moltke's characteristic definition of strategy as a "system of auxiliary means."

The critic is warned thereby to exercise great circumspection in making use of theories and rules as fixed standards of the conduct of war.

Another common error of the dilettante is passing judgment without making sufficient allowance—or even any allowance at all—for the difficulties which surround the situation, fortuitous circumstances, personal relationships, and the element of uncertainty, all of which so vitally affect the issues in the war-drama and yet remain unknown to the reader.

The second aim of this work is to point out these and other stumbling blocks which lie in the path of the critic.

It has besides a third object, which is, to bring forward, from the realistic and ever varying succession of events of war history, subject matter for the "winter study" required of our officers in order to promote their higher education. An engagement of "the arms combined" should preferably be selected as the theme for such study as well as for the war game. New points of view tend to emphasize more than ever the importance of this study, while the fact that it has so far been neglected in our infantry drill regulations, and too commonly also in our practice, serves as a sufficient excuse for urging its adoption as a proper basis for an interchange of ideas between superior and subordinate officers which would prove to their mutual advantage.

For the accomplishment of this aim we believe that we have found in the engagement at Elandslaagte a fitting example. As an historical source we shall herein make use solely of Part 32 of the *Monographs on Military History** "On the South African War from 1899 to 1902, 1, Colenso—Magersfontein, December, 1899."

The method which we pursue in working out the meager

*A publication of the Historical Section of the German General Staff.—*Translator.*

data contained therein and in arriving at conclusions gives the reader, incidentally, the answer to the question asked in the title of this work: "How should military history be studied?"

THE AUTHOR.

POTSDAM, December, 1904.

* * *

THE ENGAGEMENT AT ELANDSLAAGTE, OCTOBER 21, 1899.

The General Situation.

"When Sir George White landed at Durban on October 7th to assume the chief command in Natal, the greater portion of the reënforcements from India had already disembarked; the remainder were still on the way, but were expected to arrive shortly. With these reënforcements he had at his disposal over 15,000 well trained troops, thoroughly acclimated to great heat. The battalions, composed only of men belonging to the active army, had from 800 to 900 rank and file each.

"Sir William Simons, hitherto the general commanding in Natal, had considered it necessary to occupy with weak detachments points such as Glencoe and Dundee which were of political or administrative importance. General White took a different view, and proposed to concentrate all his forces around Ladysmith, in order to take the offensive against the presumably separated Boer columns crossing the passes of the frontier mountains. The governor of Natal, however, for political reasons, thought it right to dissuade the new commander-in chief from carrying out his thoroughly sound plan. Sir G. White yielded against his better judgment; he collected, indeed, the bulk of his forces around Ladysmith, but pushed strong detachments of all arms along the roads in the direction of the enemy.

"It was apparently due to political considerations, which are unavoidable in an alliance between two States of equal standing, that all the Boer forces were not concentrated in one theater of war. Their small strength warranted no dispersion, but political reasons turned the scale in regard to the choice of a plan of operations. From a military point of view it did not matter whether all the forces should operate in the west against Cape Colony, or in the east against Natal. Both courses offered advantages, but as at that time no definite arrangement between the Boers and the Africanders had been reached, the appearance of strong Boer forces might, perhaps, have decided the vacillators and facilitated a general rising. But this idea, which was a good one from a political point of view, is of little importance in the face of the desire to strike a severe blow against Natal, which was hostile to the Boers. The result of these conflicting plans was the decision to invade both Natal and Cape Colony. Of the 50,000 men, ready at the commencement of October, 18,000, under Joubert, assembled along the border of Natal; 2,000 men were in observation at Komati Poort; in the south 2,000 men were on the southern frontier of the Free State, and 2,000 on its northern boundary, while about 8,000 men were in readiness at Boshof and Lichtenburg for the intended investment of Mafeking and Kimberley.

"On October 11, 1899, the time fixed by the ultimatum expired, without a reply having been received from England. The Boers, 18,000 strong with fourteen guns, crossed the frontier of Natal at daybreak in three widely separated columns, while the remaining columns set themselves in movement against Kimberley, Mafeking and Cape Colony. On October 20th, General Symons' detached force at Dundee was surprised in camp by 4,000 men with six guns. By making an immediate attack, however, he succeeded in driving the Boers from Talana Hill, but the British cavalry, which had been skillfully maneuvered to the Boer rear, did not understand how to utilize their advantage and suffered heavy losses. The result of the action had, nevertheless, a depressing effect upon the invaders. General Yule took command in place of General Symons, who had fallen in the attack on Talana Hill.

The Engagement.

"Simultaneously with the Boer advance against Dundee, another column from the northwest, under General Kock, had been charged with the task of cutting off the retreat of the English detachments at Glencoe and Dundee, and had, therefore, occupied Elandslaagte, fourteen miles from Ladysmith on the Ladysmith Glencoe Railroad. On October 20th General French, in camp at Ladysmith, received orders to occupy Elandslaagte again, to restore the railway and telegraph communication, which had been interrupted by the Boers, and to join hands with General Yule. At 4 A. M. on October 21st, a seven-pounder Natal volunteer battery (muzzle loaders), accompanied by five squadrons of the Imperial Light Horse and one of the Fifth Lancers, moved from Ladysmith on Elandslaagte; at 8 A. M. half a battalion* of the Manchester regiment and a railway construction company followed by train. These detachments united about a mile west of Elandslaagte. The officer in command saw some mounted Boers on a ridge, about 2,200 yards south of Elandslaagte, who appeared to be watching chiefly in the direction of Dundee, whence artillery fire was thought to be heard. At Elandslaagte station there were also some Boers occupied in plundering a railway train."

In the above situation we are immediately confronted with a number of subjects requiring critical investigation: problems involving decisions, the formulating of orders, and inquiry into technical details.

1. *Estimate of the Situation of General Yule's Detachment.*

The ordering of this detachment to Dundee offers an excellent opportunity for critical study. It illustrates the consequences of intermixing strategy and politics; the dangers underlying operations on the *inner line* and the influence of the strategical situation on tactical operations. The Russo-Japanese War presents a like situation. It was not the tactical opponent Oku who drove back Stackelberg's corps

*The English battalions had eight companies of 100 to 120 men each.

at Taschikao and elsewhere, but rather the army of Nodzu which was operating on its flank.

In his *Studies on Clausewitz* Lieutenant Colonel v. Freytag Loringhoven clearly proves by examples from military history, how auspicious strategical situations of themselves give a certain assurance of success:

"Even if the defeat of Napoleon at the beginning of the battle of Marengo had not in the end been transformed into entire success, yet the Austrian army, robbed as it was of its communications, could not have made much use of its victory and in all probability only fragments of that army would have been able to have made their way back across the Mincio. Similarly, in the campaign of Ulm (1805), the threatening of the hostile communications served to some extent to counterbalance the situation of uncertainty in which Napoleon found himself placed for several days regarding the enemy. The success of the double battle of October 14, 1806, carried through as it was by the French under such false assumptions, was due primarily to the fact that the Saxo-Prussian army was caught in an especially unfavorable situation. Königgrätz was won by the bold utilization of a situation which proved favorable in spite of all appearances to the contrary, but the foundations of that success were laid in the fortunate preparatory measures adopted by v. Moltke in opening the campaign. By avoiding a premature concentration of the three Prussian armies he preserved their mobility and was ready to take advantage of any possible contingency. The uncertainty of the situation in the days around Metz was of no serious disadvantage to the Germans, for the reason that the strategical situation was favorable to them, their tactical efforts being supported by the fact that the enemy's communications were sorely threatened on August 16th and entirely lost on August 18th."

2. *Examination of the Orders to General French.*

These orders are not free from objections. Paragraph 51 of F. S. R. is entirely correct in insisting that in orders the *most important element should be stated first:* this was evi-

dently not done in this case. It should have been the *main mission* of General French's detachment to cover the threatened retreat of the detachment of General Yule, which, in spite of the success at Talana Hill, was unavoidable. It is true that the accomplishment of this mission demanded, first of all, the dislodgment of the Boers at Elandslaagte. With this mission, furthermore, were intimately connected the opening up of communications with General Yule and the necessity for reconnaissance towards the northwest, from which direction had come the Boer advance troops under Kock. The directions for the reconstruction of the telegraph and railroad lines should not, however, have been given a place of equal importance in the orders as that was but one of many means of fulfilling the real purpose.

It would be very instructive to write out, on the basis of these assumptions, the orders of General White to General French.

3. *Should This Order Have Been Given in Writing?*

We answer this question affirmatively under paragraph 48, F. S. R., because a written order, more than a verbal one, will induce both the officer issuing it and the one receiving it to study the situation more thoroughly and thereby prevent hasty or superficial action. That verbal instructions form a valuable supplement to written orders, and that their use should be encouraged, goes without saying.

4. *Review of the Strength and Composition of the Detachment of General French.*

We take this opportunity to point out an error, which an inexperienced and superficial critic often commits, in that he forgets entirely too easily that the commander almost invariably comes to his decision "in the fog of uncertainty" and bases it upon uncertain, contradictory or even absolutely false reports. Colonel v. Freytag has very clearly brought out this difficulty, and the way in which to treat it in the studies mentioned above.

General White will have made, on October 20th, many

confused estimates of the situation, especially as to the strength and intentions of his opponent, just as will many readers of the history.

His measures for October 21st were, in the first place, necessarily dependent upon the situation of General Yule's detachment, the strength of the Boers in Elandslaagte, and also upon the degree of danger threatening Ladysmith from another direction. Besides, he could base his action only upon suppositions, for even the assumed favorable situation of General Yule's detachment at Dundee was based upon a meager report of its success at Talana Hill, and since the communications with that detachment had been lost, the situation there might have changed entirely since that report was sent. Although this uncertainty, the doubt as to the strength of the detachment under Kock, the proximity of Elandslaagte, the possibility of using the railroad, and the disadvantage that even the least defeat would have a political significance, all pointed to the advisability of sending a *strong* detachment, this measure nevertheless involved another danger, consequent on an additional scattering of detachments of the weak field army, a danger which might even now — without our knowing it — be threatening us from another direction, for instance, from Harrysmith. In this dilemma the actual decision arrived at must be approved. That decision was: to send a rather formidable appearing detachment under an experienced cavalry leader (for such General French proved himself to be in the later course of the war); the composition of the detachment to be such as to fit it for energetic reconnaissance and to enable it to fall back rapidly on Ladysmith, in case of need. The wisdom of attaching to it the nearly useless seven-pounder battery may, however, be questioned. (See No. 17.)

5. *Review of the Interruption of Railroad and Telegraph Lines by the Boers.*

The Boers acted entirely in accordance with paragraphs 518–525, F. S. R. As it was expected that these lines would, within a short time, lie within their own sphere of opera-

tions, they should have been "interrupted" only. It is of course possible that only the lack of technical skill and the resistance of the English prevented the Boers from thoroughly destroying both railroad and telegraph. This refers especially to the bridge at Modder Spruit, the destruction of which would have been absolutely wrong, merely considering the besieging of Ladysmith. General Kock, furthermore, was not to be considered as an "independent commanding general" in the sense in which the term is used in paragraph 518, F. S. R., and would not therefore have been justified in taking such a measure on his own responsibility. The quick repair of the telegraph line, occurring later on, (see No. 14) shows that the interruption was not a workmanlike one. A detachment with a cavalry telegraph equipment, even if well skilled in its use, might have been materially delayed in repairing the lines had the interruptions been properly hidden. Paragraph 524 F. S. R. requires that place, time and method of interruption of telegraph lines be accurately reported.

6. *Examination of the Orders of General French for the Advance.*

On the whole these may be called good orders. It was natural that the mounted troops, who could not utilize the railroad for various reasons, should march early in the morning* in order both to cover the necessary repairs by the working party and to make more effective reconnaissance. The latter, however, seems to have been too restricted. We might of course assume, although it is not so stated in the history, that the English patrols kept in close touch with the Boer commando in Elandslaagte (F. S. R. 133) and that by large detours they had gained, not later than daylight on the 21st, an insight into its position and had also established communication with General Yule (F. S. R. 96–105). But from the fact that as late as eight o'clock General French has still to rely upon his own observations in estimating the

*It should, however, be noted that in South Africa the seasons are just the opposite of what they are with us.

enemy's situation, it appears that this had not been done. These omissions can not be justified, but may well be explained by certain difficulties which had to be overcome in the reconnaissance. We read in the history that wire fences made the country, otherwise so favorable for cavalry, difficult for its operations, especially early in the campaign when the necessity of supplying the cavalry with wire-cutters had not been foreseen; the Boers, however, possessed an abundance of these tools. The reconnoitering detachments labored under the further disadvantage that the Veldt offered absolutely no cover, except such as was afforded by occasional trees and scrubby bushes. This fact, coupled with the long range Mauser in the hands of the Boers, made the task of the patrols exceedingly difficult. They were perceived at a great distance by the Boers who lay in wait, ready to fire from behind a rock or bush, and then by a few well directed shots prevented their coming closer.

These difficulties, however, should have been overcome, as the inhabitants of the country were well disposed towards the English.

It would be well worth while for a cavalry officer to take up and study, say as part of his winter work, the leading of two strong officer's patrols, which should have been sent to both flanks of the Boer position. The history adds valuable suggestions in regard to this: "In any case, the cavalry will in future have to utilize the horse rather as a means of transportation as its reconnaissance will, in the end, have to be made on foot. This will frequently be possible only by employing part of the reconnoitering party for fire action while another part tries to get closer to the enemy, utilizing all available cover."

We shall do a serious injustice, however, to the *main body* of General French's cavalry if we reproach them for having made no attempt at reconnaissance until the arrival of the infantry at 8 A. M. Calculation of time and distance shows that that was a task impossible of execution.

7. *Consideration of the Point of Assembly of the Detachment.*

This point was an exceedingly unfavorable one, lying as it did in the open country within range of a hill which should have been regarded as a natural position of defense for the opponent. (See 11b.)

8. *How Should General French Have Estimated the Situation, on the Basis of his Reconnaissance?*

The task set him, the uncertainty over the fate of the detachment of General Yule, the artillery fire heard from Dundee, the attention directed to that point by the Boers, the necessity for reconnaissance and for opening the railroad, should have induced a further advance, and an attack in case of resistance.

9. *How Should a Further Advance Have Been Made?*

The advance directly from the point of assembly to Elandslaagte was very dangerous, as that advance could be well flanked from the hill mentioned above. A frontal attack on that hill was also out of the question. To await in this open spot the results of the reconnaissance was not advisable, as possibly only an engagement could give the necessary information. It would seem to have been better to turn to the north. By this we should have given more force to the reconnaissance on the flank and could, according to developments, have maneuvered the enemy out of his position, or have attacked him from the north and west; or finally, should he have been found too strong, we could have taken up a position in readiness and, continuing the reconnaissance, have awaited reënforcements. Accordingly, the battery would have had to open fire from the hill one and one-fourth miles northwest of the station at Elandslaagte; the half battalion would have been left in its vicinity—for the battery's protection—to cover the retreat and to act as reserve, the Imperial Light Horse would have deployed from the north towards Elandslaagte and the squadron would have proceeded to the extreme left flank.

"General French ordered his battery to fire at the station, and this fire was at once replied to with good effect by a couple of guns posted on the heights 4,000 yards off. Their second round disabled the team of an ammunition wagon, and as the British battery, by reason of the great distance, was unable to reply, it was withdrawn under cover by order of General French. Some inhabitants, who had come out from Elandslaagte, stated that the Boers had only 1,200 men and two guns,* but that they were expecting reinforcements from the direction of Dundee."

10. *Examination of the Order of General French to the Battery.*

If we could change the history to read that the battery received orders not to fire on the station itself but on the looters, then the orders could be considered correct. If the English had supposed that the main body of the defenders was behind the hills, then, leaving the distance out of consideration, they could not in any event avail themselves of such an extended target to draw the hostile fire. General French did that far better by firing on the only visible target at the station, at the same time directing the attack on it.

11. *What Lessons May We Draw From the Activity of the Artillery of Both Sides?*

(*a*) The accuracy of the aim of the Boers created astonishment and causes the reader to ask whether or not the case is a typical one. This we answer in the negative, even if the guns were of the best. The Boer artillery was in an exceptionally favorable position; the kopje commanded the surrounding country; the English stood entirely in the open; the air of South Africa is exceedingly clear and the position of the sun was in the Boers' favor. But in spite of all this and the careful and advance preparation, *i. e.*, determining the range, the result must be considered as an unusual piece of luck. There is no mention of further hits on the battery standing in the open.

* The Boers give their strength as 646 men and two guns.

From reports from the Manchurian War we also learn, *e. g.*, in the battle at Taschikao, that the artillery, firing for a whole day with an enormous expenditure of ammunition, at from two and one half to three miles, did no damage to speak of, and in most cases did not get the range at all. The French searching fire method also shows that even when we have at our disposal a gun with especially high ballistic effect (see *d*) we do not rely entirely on the precision and the effect of a single shot. Our F. S. R., par. 630, says: "Artillery, which has gained the distance by sighting shots, can endanger the unlimbering of hostile artillery at a distance of 3,000 yards in such manner that under certain conditions an original superiority in numbers of guns will be offset. The decision in an artillery duel at ranges above 3,000 yards is mainly dependent on numerical gun superiority and the interference of other arms."

(*b*) The fact that the hitting of the team of the ammunition wagon is regarded as a great achievement, seems to to indicate merely that that wagon was in the immediate line of fire. Even our regulations (par. 226) allow this on occasions, but only under the supposition that there will not be any hostile fire immediately. In accordance with that, and considering General French's carelessness in choosing his position, as mentioned above, it would seem that General French did not expect the Boer commando to have any artillery, or else underestimated its ability.

(*c*) We should inquire into the retiring of the artillery. It was entirely correct. According to the history, the twelve-pounder of the horse battery fired time and percussion fuse shells with 3,700 yards time fuse range and an effective range of from 1,500 to 3,000 yards. The seven-pounder muzzle-loader, possibly the 79-cm. mountain gun, had a range of only 4,000 yards and a 3,300 yards time fuse range (Berlin, "Waffenlehre"). Therefore there was no reply possible to that fire. The only other thing to do was to advance to within effective range, which was not advisable. Of course we must not consider it impossible to advance quickly to within 3,300 yards to-day, but unlimbering in an

open terrain is very dangerous, especially when opposed by mass searching-fire according to the French method.

General French had the further reason for withdrawing his artillery, that he could not know then, what the reader now knows, that the Boers had but two guns—another warning to the critic to be exceedingly careful in his judgment.

(*d*) What lesson is taught by the incident concerning the artillery materiel? The importance of large time fuse range shells is clearly shown. Even had General French opposed the Boers under normal conditions with one twelve-pounder or fifteen-pounder battery (range 6,000 yards, time and percussion fuse range up to 3,350 yards) his artillery inferiority would have been apparent in spite of his having had three times the number of guns the Boers had. At the long ranges, on account of their high angle of descent, percussion fuse shrapnel strike the ground without effect.

In logical sequence this leads us to the vital question: "Is the French 97-cm. gun with its greater muzzle velocity (500 to 580 yards),* its longer range (about 9,000 to 10,000 yards), its flatter trajectory and its farther carrying time fuse shell (5,500 to 6,000) superior to ours?"

It cannot be gainsaid that with the flat trajectory and decrease of the conical shower, accuracy in fire is increased. That is of great importance against targets not under cover. But these ballistic advantages are dearly bought, too dearly, considering the increased weight of the gun and decreased effects against invisible targets, *i. e.*, gun emplacements and skirmish trenches; and, on account of the flat trajectory, the firing over the heads of attacking infantry has to be discontinued sooner. (See No. 42.)

For these reasons we shall have to own that the German army authorities are eminently correct when they decline to make a change in the field artillery gun and projectiles. Even the larger time fuse range of the French shrapnel is of no consequence, as at ranges over 5,500 yards an observation will be practicable only in extremely rare cases.†

*The new Krupp gun has 550 yards.

†The improved Krupp gun with gun recoil has a time fuse range of 6,000 yards.

12. *What Decision Shall General French Now Make?*

See 13.

"French, covered by the Imperial Light Horse, retired to the Modder Spruit, and reported at 8:30 A. M. to Ladysmith the result of his reconnaissance. General White resolved to reënforce him at once. At 11 A. M., the Twenty first and Forty-second Batteries, with one squadron each of the Fifth Lancers and Fifth Dragoon Guards, arrived, and by 3 P. M. seven companies of the First Battalion of the Devonshire Regiment, and five companies of the Second Battalion of the Gordon Highlanders came by train, so that French had at his disposal sixteen companies, eight squadrons and three batteries."

13. *Review of the Retreat of General French on the Modder Spruit.*

It is probable that General French was forced to this decision by reasons unknown to us; the decision was not in accordance with the situation.

The mission assigned him was not executed. We may attribute this to the fact that the mission was assigned under other suppositions and assumptions concerning the enemy's strength. It is to be noted that General French (in other words, this history) designates this movement to the front as a "reconnaissance," although there was no such designation contained in the orders.

Reconnaissances in force have little favor with us; but our regulations in regard to them are not so strict as they often appear at first reading. Par. 134 of the Field Service Regulations reads: "Attacks by stronger forces of infantry for the purpose of reconnaissance are justifiable only as a preliminary to an intended general attack, or when information concerning the enemy cannot be obtained through other means." From this it is seen: The reconnaissance in force of cavalry or by *weaker* bodies of infantry is not discouraged, and the employment of stronger bodies of infantry is recommended when all other means fail.

General French, it is true, had received information from inhabitants—though according to our views (Field Service Regulations 61, 63, 67) they required confirmation—and he could consider the artillery fire as sufficient result of the reconnaissance, because, knowing the weak force of artillery the Boers had, their opposing him with that arm indicated that they were being met by a superior force.

If this argued against a continuation of the reconnaissance *in force*, against an attack, there were nevertheless other important reasons why the contact gained with the enemy should not be lost.

Reconnaissance of the hostile position and beyond could have been achieved without an attack. Protected by the plateau west of Elandslaagte the mounted arms could have attacked northward around that place, supported by the artillery—the latter protected by the infantry—and could have gained a view behind the position on the hills and could have reconnoitered towards Dundee and the Mkupe Pass. This latter was all the more important as the opponent could receive reënforcements from those two directions, and, according to the reports of the inhabitants, they expected them. As soon, however, as the retreat to the Modder Spruit was commenced, the reconnoitering patrols had no longer any support, and even the cavalry screen was abandoned.

Further, consideration for the detachment of General Yule required that he should not fall back. The artillery fire, which was thought to be heard, and the action of the Boers towards the north, should have caused him to hold the enemy by all means, and to prevent him from interfering with the retreat. Instead of this, the maintenance of connection with the detachment of General Yule by means of the patrol service, already difficult, was rendered almost impossible by the retreat.

There were, besides, other reasons, as, for instance, the abandonment of the railroad and telegraph line; the political importance of acknowledgment of defeat; and giving the Boers time and opportunity to throw up intrenchments.

From the subsequent course of the battle, after the ar-

rival of reinforcements, which led to an attack on the Boers' left wing, we might justify the retreat; we might also advance as justification for the retreat the necessity of having to water the animals and the necessity for resting the men during the hot noon hours, a most important factor in South Africa. But these excuses come from a cursory examination of the slight sketch. The changing from flank to flank, especially, could have been done without making so large a detour; furthermore, the abandoning of the terrain on the left flank was later on found to be of disadvantage, as that place had to be stormed anew. (See 44 d).

14. *Analysis of the Further Measures of General White.*

The critic here, as in No. 4, should acknowledge himself incompetent to judge because the decisions of the supreme commander depended on the situation as a whole (unknown to the reader); for instance, on the danger threatening Ladysmith from another direction (as a matter of fact the troops were recalled in the evening) and depended furthermore on the natural and artificial strength of that place. Here also was shown the disadvantage of operating on the inner line. And this may explain why the start of the infantry was delayed until 3 P. M. This would have been an error should difficulties of transportation have been the reason for the delay. Should there have been difficulties, then the infantry —naturally without knapsacks—would simply have had to march; the distance to the Modder Spruit was only seven and one-half miles. We may say in passing that there was no dearth of rolling stock, as is evinced by the transport returns.

The fact that the mounted troops arrived at 11 A. M. is, considering time and distance, a sure sign that the telegraph had been repaired or that the signal service was good. This was an important hint for the profitable additional activity of the cavalry, the duties of which to-day are so manifold.

Now a smaller matter. According to the wording of the history we might assume that General French sent his report to General White *only after* he reached Modder Spruit; that is of course impossible.

The parti-colored uniforms of the troops seem strange to us. In England, as in Russia, these are very noticeable, and were no rarity in Prussia also in 1866.

"The Boer position was on a ridge south of the railway, which afforded a clear field of fire westwards; towards the north it fell off steeply in terraces to the line, while to the south it subsided into an undulating plain, which extended to the railway bridge over the Modder Spruit, and so suggested a turning movement against its left wing. Boer posts were pushed out in front of the flanks to the right beyond the railway, and to the left on the ridge."

15. *An Examination of the Position of the Boers.*

Considered in relation to the route of march, the position was a flank position, and so far a favorable one, as on the side facing the enemy it offered a free field of fire and as the artillery position was at a great distance from the English artillery. (Nos. 16 and 17.) It should be noted also that the Boers took possession of the position voluntarily evacuated by the English in front of their right flank as an advanced post (see sketch); and they also had a similar position in front of their left flank. In the campaign of 1881 the Boers had already shown their preference for advanced positions. "In the defense," says the history, "the Boers held advanced positions with a few dismounted sharpshooters, evacuated them at the proper time and fought the main battle in a position in rear, in which the troops were fully protected from the hostile artillery fire. The fire fight was here carried on at short range with a disastrous effect, and the decisive attack was made by the advance of mounted detachments against the flanks of the enemy."

The question of advanced positions is a material one with us, the more so as not much importance is paid to it in Europe. In another publication (Battles of Advanced Troops, Berlin, 1898) we have endeavored to show through military history how incorrect this standpoint is. Events in Manchuria have supported our contention, and in the latest edition of the Tactical Instructions for the use of students at the

military academy, proper attention is given to it by recommending (par. 469) the employment of weaker advanced troops in close terrain, and adding that stronger ones are "not altogether to be rejected." In the chapter on defense also (par. 464), proper measures are taken for the sending out of advanced troops.

The case in hand, however, does not, unfortunately, justify us in going deeper into this subject, because the question here is one of weaker detachments only. The opportunity to employ the artillery for firing upon the masses concentrating at the Modder Spruit was not taken advantage of. (General Ben Viljoen complains that General Kock did not follow his advice in this.)

The history is silent as to whether or not the Boers here utilized their time, of which they had plenty, in throwing up intrenchments, as they did so well and so quickly in the further course of the campaign. The critic, therefore, may pay no attention to this, but nevertheless it is very instructive, as an academic consideration, to compare the requirements of the Infantry Drill Regulations with the teachings of the Tactical Instructions. The former says (par. 52): "The importance of artificial cover is increased considering the effect of present day fire-arms. Constructed in time, at night, and in the right place, it is valuable for the troops and their commander. A main requirement of artificial cover, however, is that it should be the servant, not the master, of the commander. The latter will be the case when the construction of cover is commenced before we are absolutely clear as to our intentions. A premature throwing up of cover is bad, as it obstructs freedom of movement. A commander requires tactical education to know not only how, but where and when intrenching materials and tools are to be utilized."

Paragraph 2 of the Field Fortification Regulations supports this view.

Paragraph 465 of the Tactical Instructions reads:

"As long as we are not entirely clear as to the disposition and distribution of troops, we cannot begin fortifying the position. The utility of field fortifications to-day is especially great. When time permits we will always resort to it But it should be remembered that to construct trenches we must come out of cover and that we thereby disclose our position to the enemy, if the latter is sufficiently near. Therefore, under certain conditions, it might be better to do without artificial cover if we cannot prevent hostile reconnaissance parties from gaining a view of the same. Otherwise we lessen the enemy's task, and artificial cover, to be of any actual value, requires much time for construction.

"If, therefore, we wait too long to determine with absolute certainty the direction of the enemy's attack, in most cases it will then be impossible to construct cover. Consequently we will often commence too early with the work, and then have our trouble for our pains, since the earthwork will be useless if the enemy comes from another direction. In such cases there is nothing to do but simply evacuate the position. The larger the position and the opposing forces, the less chances are there that the enemy will pass by the fortified position of an army. (Königgrätz-Lettow-Vorbeck, 1866; part 2, page 421; Wörth, Kunz; Gravelotte and St. Privat, Gen. Staff account, part 2, page 669; From the Danube to Plevna, Trotha, page 25.)"

In our opinion this is to be preferred to the requirements of the regulations. The cases in which, in order to keep the position hidden from the enemy, no fortifications are thrown up, should, however, be only those where no flat trajectory artillery fire is to be feared. (No. 36.)

"After watering their horses the Imperial Light Horse and a squadron of the Fifth Lancers advanced from the right to drive off the Boer outposts, so as to secure a position to the enemy's flank, and to reconnoiter towards Dundee. French proposed to hold the adversary's front with one battalion and to attack his left flank with nine companies and the dismounted Imperial Light Horse. The field batteries were to come into action between these two attacks in order to prepare the way for the assault. On the other wing the remaining squadron of the Fifth Lancers and that

of the Fifth Dragoon Guards, supported by the fire of a battery, succeeded in driving back the enemy's posts north of the railway and in ascertaining the extent of his position on that flank. Colonel Ian Hamilton was entrusted with carrying out the infantry attack. Two of the battalions had been well schooled in India in fighting against the frontier tribes."

16. *Consideration of the Measures Taken for Battle by General French.*

In general they are to be designated as good. The watering of the horses was a measure of great importance, which General French, during the succeeding course of the campaign lost sight of, to the detriment of his animals.* As six hours had elapsed since the commencement of the retrograde movement, it is to be presumed that the animals had also been watered before.

It was doubtless correct for cavalry and mounted infantry to take possession of the advanced positions on the left flank and carry out an effective reconnaissance, near as well as far. That would screen the movement of the detachment, enable the commander to reconnoiter personally, give the infantry a chance to advance under cover in column of march by utilizing the small depressions in the terrain, and would also allow the artillery to go into position near the enemy at the proper time. It goes without saying that the artillery, if necessary, had to support the mounted troops in driving off the hostile advanced troops.

The history distinctly states that the terrain favored the *euveloping* of the hostile left flank. That fact might have led to the intention of making nothing but a flank attack and at the same time insure the line of retreat. Without entirely committing ourselves, we find it easy to understand why General French gave the preference to the enveloping movement. It allowed him to bring his numerical superiority better into play, and to utilize to the fullest extent the advantages of combined attack and of concentration of fire. He was, moreover, opposed to an enemy of whose exact strength he was ignorant, who was very mobile and who—and this argued against an attempt to envelop the hostile right flank—might receive reinforcements at any time; all these were reasons which had to govern him in placing his line of retreat beyond danger. For this reason also the artillery, which could go into position only on the hills southwest of the Boer position, had to have a guard.

*From February 12th to March 13th his cavalry division lost over 2,000 horses.

The sending to the left flank of the two squadrons and the seven-pounder battery (this is omitted on the sketch) was entirely correct. By this we screened our own movements, deceived the enemy, did not hold him at the decisive point, attacked him in the flank or almost in rear, gave more impetus to the reconnaissance towards the position and towards the important roads to Dundee and Newcastle, protected the railroad, telegraph, and line of communications with the detachment of General Yule, and especially threatened the hostile line of retreat. (See 53.)

According to our F. S. R. (par. 279) the appearance of *single* batteries is the exception. This was an exceptional case, for on account of the numerical superiority the artillery did not have to be confined in a single space; the French artillery regulations have done away also with that requirement.

The grouping of the entire command was fortunate. The center of gravity of the infantry attack was naturally the detachment operating against the flank. That detachment therefore had to receive the most of the infantry and especially the mounted infantry (see 39). Harder to answer was the question whether the seven companies of the strong Devonshire battalion or one of the two weaker battalions should form the frontal detachment. The latter two would have been sufficient had General French assigned them a more passive role, for instance the protection of the artillery and of the left flank, or assigned them a more demonstrative role according to par. 87 Infantry Drill Regulations. By his action in making the frontal detachment stronger, he could

require more of it in battle, and that was consequently to be preferred.

The position of the artillery was in accordance with the terrain. It had the advantage of giving support to both infantry detachments (see 52), of covering the left flank, and did not require much protection; but it had the great disadvantage of being too far away from the hostile position. Of this we shall speak later.

The expression, "to prepare the attack," seems to us incorrect and too one sided. It reminds us that the tactics of the English in this campaign lost sight of the importance of the fire-attack.

We especially condemn General French's directions to Colonel Ian Hamilton to take command of the infantry attack of both detachments. The commander should, under no circumstances, let the main leadership out of his hands; it was his duty to take charge of both separated detachments and to coördinate their actions with that of the artillery. It appears strange that, as shown later (in 50), Colonel Hamilton commanded the battle in the main, while two superior commanders—General White also was present—were more or less spectators. That General French was a cavalryman and Colonel Hamilton an excellent infantry officer may explain the circumstance, but does not justify it.

"Shortly after 4 P. M., while the batteries, escorted by a squadron of the Imperial Light Horse, opened fire at a range of about 3,800 yards against the Boer position, behind which black storm clouds were rising, Colonel Hamilton, taking skillful advantage of cover, led his infantry forward."

17. *Examination of the Going Into Position and Opening Fire of the Artillery.*

If we compare the text with the sketch, we readily see a discrepancy, as the sketch shows the batteries in position at "a", three miles from the hostile artillery. If this was the case, and if the sketch is correct, then we cannot approve of this first position. As the effective range of the English battery only began at 3,000 yards, as the time fuse shrapnel has

an effective range of 3,700 yards, and the percussion is almost non effective at long ranges (see 11d), they could not expect any results from such long range firing.

It is self-evident that the English batteries had to go as close as practicable to the defender's artillery to silence it as soon and as thoroughly as possible. Par. 354 of the F. A. Drill Regulations emphasizes this point: "The distance from the enemy, in which the artillery first goes into position, is to be based on the commander's intentions, the battle situation, the terrain and the weather; it should, in all cases, be chosen as near as conditions will permit * * *" and Par. 291 says: "The distance from the enemy will often be dependent upon the terrain * * *"

In accordance with these paragraphs, the batteries should and could have gone at once to their second position at "b", which, in the main, was but a little over two and one-half miles from the hostile artillery, and could have been reached under cover. Who should be held responsible for the position the artillery took? According to our views, the commander. It is to be presumed, however, that the faulty maps and the clear atmosphere of South Africa were responsible for his error in judging the distance.

According to our regulations, General French had to order the time for opening fire and the point of attack. The question now arises, what targets were there for the artillery? Wherever the history mentions the "hostile position" we should understand that as being a general expression. There was nothing compelling the Boers to expose either their artillery or their infantry to the hostile artillery fire. Their infantry, without doubt, lay behind natural or artificial cover, which could not be seen even with the best field glasses at a distance of over 3,000 yards. This plainly shows how important it is that the cavalry of the attacking party should gain possession of the foreground of the battlefield early in the battle and be in a position to perceive the throwing up of trenches or their occupation, and be able to report their position both in writing (by sketch) and verbally. And for that reason the attaching of artillery officers to reconnoitering patrols is always to be recommended.

To judge from the sketch, the defensive lines of the Boers were situated on the upper declivities of the foremost kopjes. In the situation in which the detachment under Kock found itself this was eminently correct. The enemy was superior, the flank and even the retreat endangered, and there were no reasons for a stubborn defense. The detachment did not need a good field of fire, and had to lay greater value on the practicability of changing their position and of covering their retreat. The position may, therefore, be characterized as a kind of a rear guard position.

The Boers acted differently, and rightly so, in the subsequent course of the campaign in such positions, which they intended to defend stubbornly, as for instance at Magersfontein. Correctly estimating the effect of artillery fire, they placed on the edge of hill crests only trenches intended to deceive, and placed their infantry trenches proper, well covered, at the foot of the hills.

Not having any visible targets the English batteries had to feel their way in the hope of drawing the hostile fire; this, in the present case, was a useless hope, as they only revealed their own position.

Conditions would in no wise have been changed had the trenches of the Boer skirmishers been seen. Not counting at all the long distance, shrapnel would have had no effect on the Boers lying behind stone trenches, and even our time fuse shell, constructed for just that purpose, is not much more effective against such targets, because it requires a very exact knowledge of the range to make it effective, which, in actual war, can seldom be had. Par. 354 of the F. A. Drill Regulations says in this regard: "It should be kept in mind that the firing of large quantities of ammunition against weakly held field fortifications does not pay. This it is believed will be always the case when the battle is divided into a prolonged artillery preparation and subsequent infantry attack. Artillery fire on trenches will be most effective when combined with infantry feeling its way forward and attacking, and thereby compelling the enemy to occupy his lines and show himself. *It is the main duty of the commander to harmonize the gradual deployment of the infantry with the protection afforded by the artillery fire.*

Unless we assume, which we can scarcely do, that the Boers offered themselves, uncovered, as targets for the British shrapnel, the opening of fire by the English batteries from the position at "a" was faulty for more reasons than one. The course of the battle will show us the correct way. (See 22.)

"The First Battalion of the Devonshires was to advance to the left of the batteries against the enemy's front, and the remaining troops were to move against his left flank. Colonel Hamilton remained with the Devonshires, who stayed under cover until the advanced companies of the battalions making the flank attack attracted the attention of the adversary. This was the time for the Devonshires to attempt to cross the open plain."

18. *Analysis of the Planned Attack of the Devonshire Battalion.*

Paragraph 431, Tactical Instructions says: "It has already been shown that an enveloping movement can be effected only if the center (front) is attacked at the same time and the opponent thereby prevented from moving his forces at will. It requires most specific orders and a mutual understanding to harmonize the frontal attack with the enveloping movement. The former must not be started too soon, before the flank attack can become effective, and even less should we wait until the enveloping movement has actually succeeded." The orders of Colonel Ian Hamilton were entirely in accordance with this paragraph.

We have here a miniature representation of the situation of the Guard Corps at St. Privat. It is well known that this corps should have proceeded to the attack only when the enveloping movement by the Saxons had become effective. But contrary to the plan, and without sufficient artillery support, it prematurely broke into a frontal attack. The attack turned into a fiasco about 600 meters from the main hostile position; still the debris of the corps held the atten-

tion of the enemy and aided thereby the flank attack of the Saxons. The battles of Königgrätz and Liaoyang show the same thing on a larger scale.

To apply the above models to the battle at Elandslaagte, however, would be wrong, because smaller forces, unlike armies or army corps, can suffer a decided defeat in an instant. (Thirty-eighth Infantry Brigade at Mars-la-Tour; the Forty-fourth Regiment at Montoy.) The "catching" and "holding" of the enemy in front were of necessity, therefore, postponed.

There is besides, another reason for this: As long as the battalion remained half hidden behind the ridge, its presence being only surmised by the enemy, its approximate weakness was thereby kept concealed, and it possibly held his attention more easily than if it had shown itself by advancing in the open plain.

19. *An Analysis of the Direction of Advance of the Devonshire Battalion and the Battle Extension of the Detachment.*

To judge from the sketch, the front detachment did not attack the Boer left flank, but turned against the center of the hostile position. This might make success of the combined attack, the combined flank movement and the concentration of fire on the point of attack of the hostile position doubtful, and might compel each detachment to make an independent frontal attack.

On the other hand, the chosen direction for the attack had great advantages. The Boers were contained along a broader front, it protected the artillery better and did not mask it, and, above all, no jump was made in the dark.

It was certainly possible that as soon as the English attacking parties came into contact with the extreme left Boer flank, the Boers might suddenly decline a decision, or it might have happened that the two prematurely joined detachments would again face an opponent frontally, who could then have confined himself to the defense of the northern part of the hill, far from the English artillery.

We can also easily imagine a similar advantage gained in the case of a premature joining of the attacking columns advancing against a strong part of the front.

The *battle deployment* of the detachment of General French was greatly extended by the direction of attack of the Devonshire battalion; according to the sketch it amounted to about three miles at the first deployment. If the critic will consult the infantry drill regulations, he will find (par. 115): "Rules for the approximate extension of a front of a brigade in battle are furnished by the experience of war. The battle front of a brigade of six battalions at the first deployment should be from 1,100 to 1,300 yards."

In the case of this detachment, which did not even have the strength of a brigade, should we infer from this paragraph of the regulations that it made a serious error in having too great an extension? We answer in the negative.

The number of yards given in the regulations for a battle extension are to be understood only as applying to extension of commands operating in close connection with larger bodies of troops, and should not form a guide for detachments acting independently, engaging in combat in several separated groups. But the above mentioned paragraph of the regulations concerning the extension of front of a brigade is very often erroneously interpreted in practice with regard to battle tactics. In the first place, the figures given are not meant to be normal in all cases, but are to serve merely as a guide; they are the result of experience, and allow of material variation in both directions (see 21). In the second place, they expressly refer only to the first stage of deployment, which, according to the accepted battle tactics, should be small, while during an enveloping attack the line the troops occupy becomes more and more contracted. It will easily be seen that we must be exceedingly careful how we apply that paragraph of the regulations, when we consider further under what varied conditions brigades have fought in various battles.

19*a*. *Choice of Colonel Ian Hamilton's Position.*

See No. 41.

20. *Consideration of Doing Without a Reserve.*

See No. 39.

"Three companies (360 men) were ordered to attack. First of all, scouts climbed the ridge, then from 350 to 450 yards in rear came a thin firing line extended to about 700 yards, which was again followed at a similar distance by the extended supports. The remaining four companies of the battalion remained at first under cover and then advanced by companies in column of route."

21. *Examination of the Battle Formation of the Battalion.*

It was according to up to date views. The "scouts" recall the requirements of the old French regulations; at the present day they perform the duties of the reconnaissance in the immediate vicinity in front. It is strange that our drill regulations for infantry recognize only the battle patrol on the flank; it might be well, however, to charge "the weak skirmish line" sent to the front with the important duty of reconnaissance. The *Tactical Instructions* say in regard to this: "Patrols sent to the front for reconnaissance in the immediate vicinity have to supplement or entirely perform the reconnaissance duty of the cavalry. They are utilized to reconnoiter the enemy, to secure against surprise, to drive off hostile patrols, to screen our front, to reconnoiter roads of approach, to observe the effect of the artillery fire, and to protect the commander riding in front."

According to our ideas, the forming of a thin skirmish line was correct, inasmuch as the battalion had to expect long range infantry and artillery fire when crossing the open plain. Major Löffler, in his Quarterly Journal No. 3, page 403, insists on this thin skirmish line, which can also take over the above mentioned duties of scouts: "The first requisite of tactical leadership is never to be taken unawares by hostile fire; to prevent this we know of nothing better than a thin skirmish line thrown several hundred yards to the front of the main force. At the moment this thin skirmish line first draws the fire—or in case there be none, when the hostile line has been seen and reported—the *entire* remaining force *must still be outside* the range of the enemy's fire, either covered by features of the terrain or, in the absence of cover, which is rare, protected by the distance. Only then is it possible to send in the forces in accordance with a concerted plan and with due forethought; in other words, to preserve freedom of action."

We need not be afraid to deploy immediately a sufficiently dense skirmish line, which must be firm in its determination to advance as far as possible and to withstand the hostile fire. Whether or not it reaches in this effort the line of scouts ahead of it, is a secondary consideration; the single scouts will have found cover in the terrain sufficient for their own protection.

It is not in accordance with our regulations that the supports of the Devonshire battalion followed the line in open order. But the highest authorities in our army give a certain amount of freedom in this connection, and the *Tactical Instructions* say: "Within effective range of fire, in open terrain, companies in close order can only move in exceptional cases."

But the distance—350 to 450 yards—is entirely correct; the 220 yards distance which our drill regulations prescribe to avoid possibility of a single bullet hitting two ranks at the same time, is to-day insufficient, considering the flat trajectory of modern small arms.

The keeping of the battalion reserve under cover at the start and the manner of its advance also must be acknowledged to be correct. The *Tactical Instructions* say: "Infantry can utilize the march column formation on the battlefield and keep that formation up to the very moment of entering the battle. Concentration, taking up positions of readiness, deployment for attack, and the utilization of reserves, is facilitated if the infantry remains in march column, in that the several brigades, regiments, battalions, and even single companies, can be drawn out to one side and placed, according to the features of the terrain, either alongside of or behind each other. Columns of sections are best suited for movements within the zone of hostile artillery fire by increasing the difficulty of the artillery in finding the range

with sighting shots, especially if the heads of columns do not march on the same line and the columns preserve large intervals. Only where the terrain is unfavorable for the above formation do we utilize company columns, and even then dense formation should be avoided.

Of course, it is necessary in using this formation that the troops are not under infantry or enfilade artillery fire, as in the case of batteries reserved by the French from the artillery duel, called *batteries de surveillance*.

Where this danger is present, and that is mostly the case at the beginning of the battle. we will do well to allow larger detachments to advance, in open terrain in close column, only after the mass of the hostile artillery has become engaged with our own. That this is likely to be the case in future battles, though in a decreased measure, we shall discuss in No. 22.

The *extension of front* of the seven Devonshire companies seems too great. (According to the sketch, about one mile; according to the text of the history, 700 yards; which latter seems more correct.) According to our views the battle front of a battalion, after a few detachments have been made, should not be more than 450 yards. And even that may be too much. Had, for instance, the Devonshire battalion been compelled to advance across the open against an equal opponent, *i. e.*, against a dense skirmish line with supports, then even at 450 yards extension the formation would have had insufficient depth. The lines of the Guard Regiments Nos. 1, 2 and 3, at St. Privat, did not have more extension than that, and there only very thin lines got to within 700 yards of the hostile position. There, of course, the *manner* of the advance was the principal fault.

In the present case, however, we must acknowledge the correctness of the extension of the Devonshire battalion. It is not a question here of an equal opponent, but only of dispersed groups of skirmishers, whose flank is in imminent danger, and who could be kept under fire by superior artillery. On the other hand, an advance with a smaller front would have had many disadvantages, amongst others that of offering the defender the advantage of a concentrated target.

Paragraph 87 of the Infantry Drill Regulations is applicable to conditions of this sort: "Regulations do not give instructions or points of view for battles of all kinds and descriptions; they do not apply to containing or false attacks or demonstrations, which must be separately determined by the commander in each case, as no two situations are alike. The formation and the extension of front and depth will rest with the decision of the commander."

"The two hostile guns endeavored in vain to check the infantry advance. When within about 1,100 yards the skirmishers halted and began to fire volleys at the enemy's position, and the latter replied along his whole front. The batteries utilized this opportunity to change position by advancing about 1,650 yards. The supports, under cover of the now more effective artillery fire, which silenced the Boer guns, reinforced the firing line, and advanced at quick time until within about 750 yards of the enemy."

22. *Review of the Combined Action of the English Infantry and Artillery.*

The advance of the Devonshire battalion is not entirely in accordance with Par. 82 of the Regulations, in reference to a planned attack. It says: "At the start the artillery should strive to gain fire superiority; it has to open the road for the infantry attack." This was here impossible, because the attacking artillery was unable to engage the opposing artillery; the infantry only succeeded in doing that by its advance. It is an illustration of the views of General Rohne: "It (the infantry) must advance against the hostile position with the knowledge that it will thereby draw the fire of the artillery."

Pars. 443–4 of the *Tactical Instructions* are very instructive, although applicable to this case in part only:

"* * * The commencement of the *infantry attack* can, as a rule, not be delayed until our own artillery has gained the fire superiority and is in a position to hold down the hostile artillery with a part of its batteries and to fire on the hostile infantry and the point of attack with the other

part. Such a definite superiority of one artillery over the other, will in future seldom be the case. It is rather to be assumed that, like the infantry battle, so also the artillery duel will sway from side to side; at one point we may gain a certain superiority; at another we may with difficulty hold our own; at still some other point the sudden appearance of new batteries may change the entire aspect of things. Batteries having shields are hard to silence completely. And therefore, the infantry can not always wait for a decision in the artillery duel * * *.

"The battle of the artillery and infantry will not take place hereafter, one after the other, but alongside of one another. If the attacking infantry has completed its deployment as far as is desired, it can then start to utilize time, while the hostile artillery is busily engaged with our own. Should the enemy, in spite of this, fire on our infantry with part of the batteries engaged with our artillery, or with a newly appearing battery, then our infantry's movement will for the time come to a standstill, but the hostile batteries which have hitherto been partly or wholly concealed, will be forced to leave their cover and to come to the ridge of the hill; a change which is not easy and which may lead to the annihilation of those batteries * * *."

Of this more in No. 24.

23. *The Devonshire Battalion Had a Total Loss of but Four Officers and Twenty-nine Men. How is Such a Small Loss Accounted For?*

A. The losses by artillery fire could be but insignificant:

1. The battalion advanced in invulnerable formation.

2. The average space covered by shrapnel bullets at 3,300 yards range is about sixteen yards. The two guns, therefore, covered a space of about thirty-two yards; that means but the twenty second part of one of the three echelons of the first line.

3. The two Boer guns stood under cover, and could probably not fire directly on the approaching skirmishers. Firing on approaching targets is difficult.

4. The shrapnel bullets do not place a man *hors de combat* when their velocity is less than 110 or 140 yards.*

B. Losses by fire of the Boer infantry:

See No. 26.

24. *On What Should the English Artillery Have Fired During the Advance of the Devonshire Battalion?*

Paragraph 312 of the F. A. Drill Regulations says, in italics: "Without regard to possible losses that object must always be fired on which is the decisive point on the field of battle." This rule is still unassailable, and every one must acknowledge that the silencing of the hostile artillery is of the utmost importance to the successful outcome of the battle. But gun shields and covered positions are instrumental in causing the artillery duel to take a hesitating and indecisive course. This shows that in such cases artillery may without doubt direct its fire on other targets and not only (as required by regulations) on formations *in close order*, when the artillery duel is indecisive. The combined action of infantry and artillery, as illustrated for instance in No. 22, is thereby made easier. The French regulations are radical in this respect by directing that only a part of the artillery is to engage in the artillery duel, while the other part lies in concealment, as *batteries de surveillance*, to fire on any part of the enemy showing himself in the open, no matter what arm.

Conditions at Elandslaagte were very much simpler for the English artillery in so far as it was not fired on at all. It, therefore, could direct its fire on just that object which seemed the most dangerous for the infantry. This object at the start was the hostile artillery, later on the hostile infantry. In case both objectives could not be reached, on account of the long range or because they were hidden, then a change of position had to be made (see 17 and 29).

*At Poplar Grove the shrapnel fire, under which the French division got, was without effect because the penetration power of the bullets was so small that men and horses hit by the bullets carried off only swellings. A few unofficial accounts of the Manchurian War give a different account. The German shrapnel bullet weighs ten grains, the French twelve grains.

25. *Consideration of the Employment of the Boer Guns.*

Of the objects offered as targets, the two Boer guns had to consider the English artillery as the most dangerous enemy, because it could enfilade the Boer infantry which faced the English flanking detachment. Weak skirmish detachments were sufficient to attend to the Devonshire battalion advancing across the open field, because their depth was not great. It was, therefore, an error on the part of the two guns to betray their position uselessly by firing on that battalion, especially as they could not expect thereby to gain any material success (see 23). It was of far more importance to look after the English artillery and to catch it while changing position (see 29).

It would have been the best plan to have prevented such a change of position. In this sense, and considering their ballistic superiority, it might have been best to take the English batteries under fire at once and prevent their being moved. But it may have been true that the distance was too great even for the Boer guns.

26. *Inquiry Into the Activity of the Boer Infantry.*

We find in the narrative account that the Boer infantry opened fire only when the English skirmishers had come to within 1,100 yards range and had themselves opened fire. But this is contradicted in the final discussion of the battle, according to which "the Boers had used their rifles up to almost their extreme limit of range." To have reserved the fire would have been faulty, for it was evidently necessary to hold the English center detachment at a distance, considering the Boer weakness and the danger threatening the Boer flank, the more so as the English batteries at that time were firing without any effect from their first position.

If the latter had not been the case, or if the English battalion, as later at Magersfontein and Colenso, had advanced carelessly, then it would have been correct to have held the fire and preserved secrecy in regard to the position until the attacking party had come to within point blank range.

The reason that the English infantry was enabled to move in quick time without material losses (see 36) from 1,100 to 750 yards distance from the Boers, may be attributed to the fact that the English artillery fired with effect from its second position on the Boer trenches, and that therefore the Boer skirmishers had to keep under cover. It was to be expected of the latter that they would take up the fight in earnest as soon as the English infantry came within point blank range, when a decision would be quickly reached, and that in the meantime the English artillery fire would have to be endured for a short time, or until it would have to cease because it could no longer fire over the heads of its own attacking infantry.

If we consider that the two English batteries covered a front of 220 yards, according to our regulations, and 440 yards according to the French, then a large part of the Boer sharpshooters could have fired without danger.

The small losses the English sustained may further be ascribed to the tenuity of the skirmish line and to the small number of defenders, who for the most part consisted of courageous but raw German and Dutch volunteers from the mining districts.

27. *Was It Correct for the English Skirmishers to Halt at 1,100 Yards From the Enemy?*

Paragraph 82 says: "The general rule is for the advanced line to get as close to the enemy as the terrain will permit, before opening fire." Considering this rule and the small loss of the English, we might conclude that the skirmish line halted *too soon*.*

Taking into account the flanking detachment, the line could have easily advanced a few hundred yards further, but on the whole its halting where it did must be acknowledged

* Par. 623, F. S. R., was not applicable in the present case: "Skirmish lines moving in the open, and fired on by infantry which is not itself under fire, will suffer considerable losses when within 1,100 yards of the enemy; longer rushes to the front will, therefore, as a rule, be practicable only if well supported by fire."

to be correct. The line had principally to consider the point so well stated in Par. 354 of the F. A. Drill Regulations, which unfortunately is not mentioned in the Infantry Drill Regulations, namely: "It is the main duty of the commander to harmonize the gradual deployment of the infantry with the protection afforded by the artillery fire." The infantry had made good forward progress; had thereby forced the enemy to show himself, and it was now the task of the artillery to gain a position from which it could keep down the hostile artillery and infantry fire, principally the former. (See 29)

28. *The Volley Fire of the English Skirmishers.*

This is not in accordance with German views. The reasons are well known.

29. *The Change of Position of the English Batteries.*

As a general rule, the movements of infantry in open country are carried on under the protection of artillery, either firing or in readiness to fire. According to this rule, the English batteries acted correctly in so far as they could reach the hostile guns and skirmishers. Could this not be done, and that is to be presumed here, a change of position had necessarily to be made, as soon as it was ascertained that the range was too great. Only then could the Boer guns and sharpshooters be taken under fire while they were firing on the advancing infantry, and the latter thereby effectively supported. The expression in the history, "the batteries utilized this opportunity," is consequently not easily understood.

30. *Who Should Have Directed This Change of Position?*

In the case in hand, it was merely a question of a change of position, as provided in Par. 340, F. A. D. R., because it was not of much importance, and only necessary for "better effect or cover." Such changes of position can be ordered independently by the artillery commander; in all other

cases, where the change would be a material one, the commanding general would have either to give or to approve the order.

31. *How Should the Change of Position Have Been Executed?*

In this case it was best to bring the two batteries simultaneously into a new position, and not—in accordance with F. A. D. R., Par. 341—by sections. The reasons are obvious.

32. *What Should Have Been the Objective of the Artillery in its Second Position?*

This should have been, without doubt, the hostile artillery, even if it were not in plain view. Up to 1,100 yards the Devonshire Battalion did not require any support against the hostile skirmishers. Only after the hostile artillery had been silenced should the infantry positions be taken under fire. Under cover of this fire and continuous observation of the Boer guns, the English skirmishers could then advance further to reach their objective, as we show in Nos. 36 and 42.

33. *How Should the Infantry Positions Have Been Fired On?*

By firing by sections. (See No. 26.)

34. *What Should Have Been the Course of the Artillery Duel?*

According to the sketch, the artillery lines were separated by nearly 4,000 yards, a distance at which even the most modern guns do not easily gain fire superiority (see 11a). In this case the numerical superiority was not so great as to justify the hope of gaining the victory very early.

How should the Boer guns have acted, in view of this? The answer will be seen in No. 45.

35. *In Considering the Artillery Positions, Should We Take the Text of the History, or the Sketch, as Being Correct?*

The text must be considered as erroneous concerning the positions of the artillery. According to it, the first position was at 3,850 yards; the second was 1,650 yards closer, therefore at 2,200 yards. The last position is said to have been within 2,100 yards, which cannot be correct, for artillery would not change a hill position for the sake of 100 yards.

Even the explanation that the scale of the sketch is wrong is not correct, for from (a) to (b) the distance is actually 1,650 yards. Of course, it is possible that, in addition to the text, the sketch may also be wrong.

For all this, the history is to be held less responsible than the English sources.

36. *Consideration of the Further Advance of the English Infantry.*

The advance of the skirmishers from 1,100 to 750 yards seems to have been made, and properly so (see 27, 32), only after the English batteries had begun firing from (b) on the Boer skirmishers. Consequently they were but little or not at all fired on (see 26). Under these favorable circumstances, they could and should have advanced at quick time, according to our Infantry Drill Regulations (Par. 47): "If it is possible, considering the effect of the hostile fire, to advance *without halting*, that should be done under all circumstances, and consequently, in maneuvers, the advance by rushes should not begin at long distances, nor should it be exercised as the only manner of crossing level terrain."

There is room for argument, however, in that the skirmishers again halted too soon. The hostile fire, as is shown, did not interfere with the advance, which remained too far away—750 yards—to gain a fire superiority, or to endanger the enemy sufficiently to cause him to show himself above his trenches as a target for the shrapnel of the artillery. This is required by the F. A. D. R, Par. 354: "The shaking of hostile points of support can take place only after the hostile artillery has been defeated. The concentration of fire on

points, important according to location, or according to the views and intentions of the commander, must take place in connection with annoying adjacent points, and the further keeping down of the hostile artillery.

"It should be kept in mind that the firing of large quantities of ammunition against weakly held fortifications does not pay. This is usually the case when the battle is divided into a prolonged artillery preparation and subsequent infantry attack. Artillery fire on trenches will be most effective when combined with infantry feeling its way forward and attacking, and thereby compelling the enemy to occupy his lines and show himself. *It is the main duty of the commander to harmonize the gradual deployment of the infantry with the protection afforded by the artillery fire.*"

There may, however, be an excuse for the English infantry halting as soon as it did, in the fact that the hostile artillery had not at that time been silenced. But consideration of the flanking column should have caused the line to advance nearer to the enemy.

It seems premature for the skirmish lines to have been reinforced by their supports at 1,100 yards. But we must consider that the English skirmish lines would only then have reached our regulation density, and that it is perfectly correct to form denser lines when we desire to gain the fire superiority at effective distances, in order not to engage superior forces with inferior. Furthermore, there was nothing in the present case to compel the English skirmishers to gain ground in the so-called "Boer manner."

37. *Based on Nos. 16 to 36, a Thorough Description Should be Given of the Supposed Course of the Battle.*

Such a task is exceedingly instructive and suitable for winter study. Our questions and answers show how much can be read from and between the lines of a short report of a battle.

"The advance of the turning force was greatly facilitated by the bursting of the long threatened thunderstorm."

38. We have here an addition to the chapter on frictions

and chances, which, as Clausewitz says, "are never taken into proper consideration on paper," but which have to be considered carefully by the critic.

"The Imperial Light Horse, Gordons and Manchesters soon mixed themselves up into one single, thick firing line, which advanced in continuous rushes of about 40 yards. as laid down in the regulations, against the enemy, who was effectually held fast in front and flank."

39. *Consideration of the Advance of the Flanking Group.*

The premature *mixing* of all the troops, and the advance in a *single* line can not be called good. It undoubtedly occurred by the nine companies of Gordons and Manchesters rushing into the widely extended line of the Imperial Light Horse and carrying that line forward. It would probably have been better if the two battalions had been put into one line alongside of one another, and the Imperial Light Horse had been kept back as French's reserve. It could then, later on, according to necessity, have supported the first line, and could have more effectively attacked the enemy in his rear, cut off his retreat, or opposed counter attacks (see 43 and 44). In the present case, however, the attacking group might have done without the regulation depth, and the commander might properly have had as his aim the preparation of a Sedan for the weak and isolated Boer detachment.

The history criticises in a similiar manner the employment of the mounted infantry at Magersfontein: "The cavalry and mounted infantry were employed solely as infantry, but, much as their support may have been desired in that capacity, it would certainly have been better if the mounted troops, with machine guns and the battery of horse artillery, had been sent to act against the flank and rear of the Boers. Even if their dismounted action were justifiable until the arrival of the guards, it was no longer so when a sufficient force of infantry had been brought up, and the attempt could still then have been made to operate against the flank and rear of the enemy. This might well have succeeded, because the latter had left their horses a long way to their rear."

That the English line advanced *without halting* in short rushes, may have been in accordance with the situation, and may have been in harmony, especially with the advance of the frontal detachment and the activity of the artillery, which could effectively enfilade the south front. But we should remember that flank attacks can not and should not take such a rapid course in all cases, and also that with them the less the attack is aided by the element of surprise the more important becomes the necessity for careful fire preparation.

"The batteries advanced simultaneously to within 2,100 yards of the Boers."

40. *Consideration of the Advance of the Batteries.*

This may have been necessary because the storm shortened the view, and it is possible that the range was still too great even for the English guns. Under normal conditions and considering the effect of modern arms, it is not to be recommended as a general rule to stop firing at such a critical point, to change a high position for one in the valley, and thereby run the risk of the fire of the hostile artillery appearing at a new point. For these reasons, if a change is made, it should at least be done by sections.

The requirements of par. 347, F. A. D. R., that single batteries, for material as well as moral reasons, should accompany the infantry attack to the most advanced and effective position, do not apply in this case, but rather par. 346, which says: "It is of advantage if the point of attack can be taken under fire from a position allowing direct fire, or from a flank position; for then a change of position will be unnecessary, as long as the main factors of proper fire control—discernment of friend and foe, scattering of the projectiles, observation of hits, etc., preclude the endangering of our own troops."

"Colonel Hamilton, who had hitherto commanded the frontal attack, now betook himself to the right wing and ordered the assault."

41. *Consideration of the Method of Command.*

In No. 16 we have emphasized the fact that each one of the battle detachments should have had a special commander. As the flanking detachment was the stronger and of more importance, Colonel Ian Hamilton should have gone to it much earlier. Then the attack at that point would have probably run a smoother course.

It is strange that nothing appears here or later of the part taken by the actual detachment commander. General French should have retained for himself the disposition of the Imperial Light Horse, should have directed its movements, and should have also directed the coördination of the infantry and cavalry detachments with the artillery. His station was with the artillery at the start, later with the right flank.

This case teaches also the importance of giving cavalry and artillery commanders training in the command of mixed detachments.*

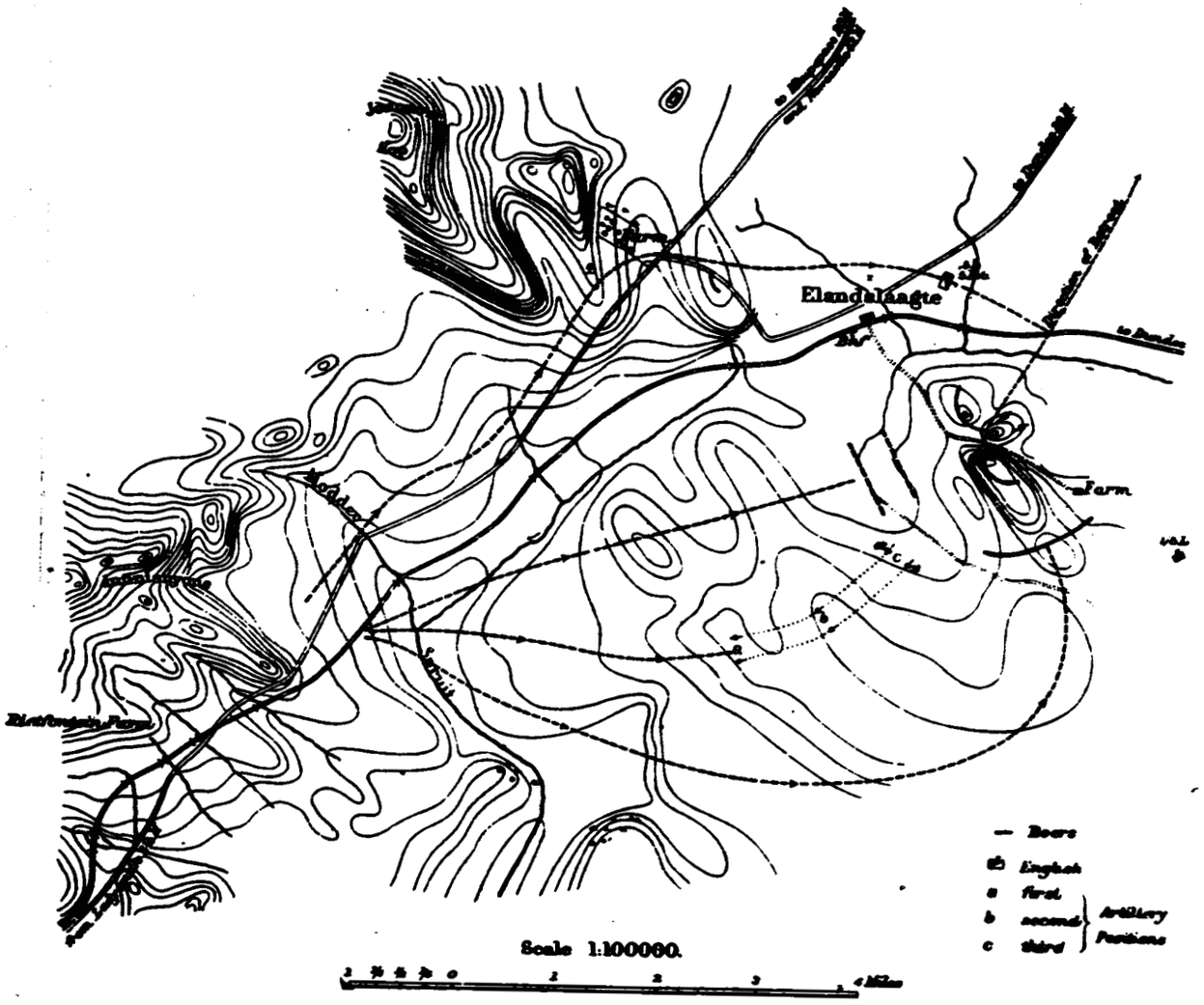
"The skirmishers had to traverse a distance of about 300 yards to reach the position. The signal was taken up along the whole line which, firing as it advanced, succeeded in penetrating into it. The two Boer guns had again been brought into action to repel the charge, and they were captured."

42. *Analysis of the Charge.*

The distance of the charge, 300 yards, may be considered typical. The infantry should not interfere with the possibility of the artillery's firing on the hostile infantry position up to the actual commencement of the charge. Under favorable terrain conditions, as was the case here, and when there is a good view to be had, the artillery of the attacking party could fire very well over the heads of the infantry at that distance. Should this be impracticable, its own interests demand that it should remain farther to the rear. French writers give for a battle on level ground 550 yards for this.

*In England maneuvers of the arms combined in variable terrain are rare.

ACTION AT ELANDSLAAGTE.



That more ground has thereby to be covered in the final charge is of little importance if the demoralization of the enemy is made more complete and our own powers for the last effort are correspondingly saved. For the rest, the infantry must, for the same reasons, be prepared in such cases to receive here and there a shrapnel. In this sense, on page 67, the history criticises an occurrence in the battle of Paardeberg: "* * * and it was a particularly grave error that the battery on Signal Hill, which had at first, by its very effective enfilade fire against the Boers at the river bend, rendered such powerful aid to the advance of the Nineteenth Brigade, should have at once ceased firing as soon as some of its shells fell by mistake among the ranks of the Highlanders."

The French instruct their artillery to fire in such cases obliquely over the infantry, thereby at the same time enfilading the hostile line; and we find the same in par. 346 of the F. A. D. R., cited in No. 40. This refers especially to the situation of the English artillery at Elandslaagte, which could fire from its own position on the south front of the Boer infantry without endangering its own troops.

That the attack was carried out along the *entire line* simultaneously, the center included, was correct.

Firing during the charge is, according to our regulations, the exception. But many have different views as to that. Among the latter is General von Boguslawski.

43. *Inquiry Into the Reappearance of the Boer Guns.*

Concerning this matter pars. 359 and 360, F. A. D. R. say: "* * * but as soon as the opponent begins the decisive attack the entire artillery must, without waiting for orders, again open fire with all guns on the hostile infantry without regard to the hostile artillery fire. Even single batteries, suddenly appearing at a new point, will be found of especial advantage in this.

"If the attack succeeds in spite of this, then a part of the artillery must prevent the hostile artillery from being brought into the captured position, while the remainder must concen-

trate its fire on the assaulting infantry of the opponent, in order to, in conjunction with the reserves, drive the enemy from the position. This is one of many battle situations in which a stubborn holding fast until the last moment is necessary, and is full of honor even if the guns are lost."

If in spite of these paragraphs we still have our doubts as to the correctness of the reappearance of the Boer guns, it may be attributed to the fact that we criticise the manner of the Boer warfare along broad lines, and that disapprovingly. (See 44.)

"While one portion of the Boers, by holding up white flags, showed that they wished to surrender (an action which caused the British to sound the 'cease firing'), another Boer detachment of about fifty men made a counter attack. This was at first successful; the guns being temporarily retaken, but the English officers again managed to lead their troops forward, and finally drove back the enemy in a northerly direction. Here he came across the two squadrons which, having approached nearer and nearer to the battlefield during the action, now attacked the fugitives at a gallop and rode them down."

44. *Discussion of this Phase of the Battle.*

(*a*) The Boers can not be blamed for surrendering, as there was nothing to be gained by a continuation of the struggle. The counter attack could not be foreseen. (See, however, No. 45.)

(*b*) The signal, "arms at rest," on the part of the English seems to indicate obsolete views concerning the end of a battle.

(*c*) The counter attack of fifty men is perceived to be a sign of decision. That it was undertaken at all proves to what extent danger to the guns may increase the resistance of even the infantry. This should not be overlooked. Its temporary success shows how easily victorious troops can be thrown into confusion, and points out the importance of having reserves in close order, even if but weak, during and after the execution of the charge.

(*d*) The attack of the cavalry deserves approval. It may be assumed that the squadron of the right flank also was utilized in a similar manner. But the retreat of the mounted Boers was a scattering of single riders in a large field. Therefore, in this case the assault—more correctly the capture—was to be preferred to the fighting on foot. In the case of orderly retreating infantry, fighting on foot would not only be less costly, but also more effective, than charging mounted, because then we would not interfere with the pursuing fire of our own infantry, and we could also in that case break off and renew the battle at will. It appears strange that the cavalry, with its attached battery, did not *during the battle* harass the enemy in the rear, especially his guns and led horses. It is to be assumed that the small advanced detachment (see sketch) on the right flank of the Boers kept it from that, and thereby performed a valuable service.

"The Boer detachment was thoroughly beaten."

45. *Consideration of the Boer Manner of Warfare.*

General Kock should be charged with aimless maneuvering. In face of the superiority of the English, especially in artillery, which was doubtless well known to him, in face of the formation for attack, leading to his enveloping, the outcome of the battle could not have been in doubt. There was no reason at all for seeking battle at Elandslaagte. The costly containing of General French's detachment on this day did no good to any other body of Boer troops, and the task of cutting off the retreat of the detachment of General Yule could easily have been carried out farther to the north. Had then the detachment of General French followed, it would have risked the danger of being cut off. The Boers' defeat had a disheartening effect on the entire army, and on the vacillating population of Cape Colony.

As, however, General Kock accepted battle, he should have utilized the mobility of his command to its fullest extent. As soon as the opposing flanking detachment had committed itself to the attack, he should have considered his position only as a trap—leaving there a few sharpshooters with

plenty of ammunition—and with the main part of his command, inclusive of guns, should have taken up a new position on the hostile right flank. Could this movement have been executed secretly, it might have led to a successful counter attack; in any case, much time would have been gained, and the Boers would have withdrawn themselves from the envelopment.

"The British buried 60 dead, found 150 wounded, and took 184 prisoners. The Boers give their loss as 62 killed and 104 wounded; 36 per cent. and 54 per cent., including prisoners. The English loss was trifling; it amounted to:

	Killed.	Wounded.	Total.	Per cent.
Officers	5	30	35	23
N. C. O. and men	50	175	225	7.5

The Gordons and the Imperial Light Horse had suffered most, having been crowded together in a small space during the assault.

46. *Remarks on the Losses.*

To page 37 of the history we will add the following:

The loss of the Imperial Light Horse must have been keenly felt, especially as the horses, whose riders had fallen, had to be led. This fact doubles the losses in the cavalry. Mounted infantry, the horsemanship of which is not required to be of such high standard, can be more easily recruited.

In consequence of their colonial wars (page 25 of the history), the English are inclined to consider even small losses as great misfortunes. Fear of loss is, of course, wrong for a continental army.

The ratio of dead to wounded is as one to three, as is generally the case.

The difference in the amount of losses as given by the English and the Boers may be explained by the fact that the latter had colored servants with them which they did not consider as being participants.

* * *

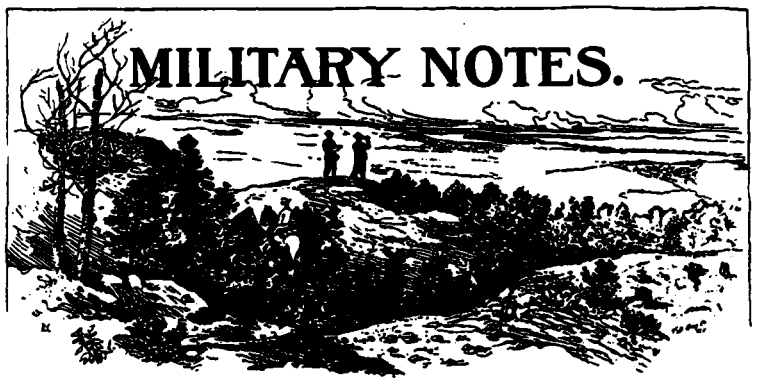
The following comments of the history, as well as the final outcome of the battle, are quoted verbatim, without comment:

"As regards tactics and training, the British force had shown itself quite on a par with its adversary. The Boers were pressed energetically in front and flank, and succumbed to the power of concentric infantry fire at very short range, which was effectively supported by a superior number of guns. On the extreme right wing individual fire had been the rule throughout. The heavy loss of officers is nothing strange for the first day a force is in action; this happens in all wars. But the loss of men was unexpectedly small, notwithstanding the fact that the Boers had used their rifles up to almost their extreme limit of range. The First Battalion of the Devonshires, skillfully led across the bare plain, only lost four officers and twenty-nine men, and the employment of the cavalry against the flank and rear of the enemy is worthy of all recognition. In spite of this success it appears not to have been possible to join hands with General Yule at Dundee; he learned, on the day after his success at Talana Hill, that the Boers had been reinforced and were preparing to surround him, and he decided, therefore, to avoid this danger by a rapid retirement to Ladysmith.

"General White had witnessed the action at Elandslaagte. On the way back to his headquarters he received information that strong bodies of the enemy were advancing along the Harrismith-Ladysmith line of railway. As, with his divided force, he did not feel equal to coping with them, he approved of the decision of his second in command, left behind in camp, to recall General French's detachment from Elandslaagte. With his troops united he hoped to be able to resume his original plan of campaign. The mounted troops moved off from the battlefield at Elandslaagte on October 22d, at 3 A. M., and the infantry followed by train at 6 A. M. and later.

"General Yule began his retreat at 9:30 P. M. on the same day; he marched at first in a southeasterly direction, and only reached Ladysmith on the 25th, with his troops com-

pletely exhausted. The Boers had followed the retreating British columns and occupied positions round that place, General White, notwithstanding the two victories of Talana and Elandslaagte, not having been able, owing to his forces being scattered, to prevent the junction of the separate hostile columns as they debouched from the mountains. He could not know that the news of these victories had induced a number of doubtfully inclined persons to abstain from joining the Boers."



OUR REPRESENTATIVES AT SAUMUR.

THE following letters, copies of which have beeen furnished by permission of President Roosevelt by Captain Frank McCoy, Third Cavalry, A. D. C., will be of interest to our readers:

THE WHITE HOUSE,
WASHINGTON, March 23, 1908.

My Dear Colonel Mazel:

On behalf of the American government I wish to thank you heartily for the constant and unfailing courtesy extended by you and those under you to the American officers who have been at the Saumur School. From all who have been there, I have heard not only that they have been treated with every official courtesy, but that they have been received with a personal kindness and friendliness that has deeply touched them. Moreover, without exception the officers feel that they have profited immensely by their attendance at the school, and they are filled with enthusiasm for, and

admiration of, what one of them, in a letter, calls "the splendid horsemanship shown alike by the highest and lowest among the French officers whom" they have met. I have been so much imprest by their uniform testimony to the benefit they have received, and the great courtesy and consideration with which they have been treated, that I desire to send this word of personal thanks.

My cavalry aide, Captain Fitzhugh Lee, is to go to you this summer. He is a grand-nephew of the great Confederate General, Robert E. Lee, and I hope you will like him.

I venture to send you herewith a photograph.

With renewed thanks, believe me,

Sincerely yours,

THEODORE ROOSEVELT.

Monsieur le Colonel Mazel,
Commandant l'Ecole d'Application de Cavalerie,
Saumur.

* * *

(TRANSLATION.)

SCHOOL OF APPLICATION FOR CAVALRY,
SAUMUR, July 12, 1908.

Colonel Mazel, Commandant of the School of Application for Cavalry, to Mr. Roosevelt, President of the American Republic:

Mr. President:—You have had the kind consideration of sending to me, along with your photograph, a private letter in which the School for Cavalry at Saumur, which I command, is commended in terms that have gone to the hearts of the corps of officers of the school.

In reply to your communication, I have the honor to extend, in their name and my own, our most respectful thanks.

I am personally very much flattered by the sentiments of esteem that the officers under my command have been able to inspire in those of their comrades of the American army who have been sent here to share their labors.

These feelings of esteem are fully reciprocated and, for myself, I am glad of having this opportunity of informing you that Captains Henry, Lahm and Short, who have been the representatives at Saumur of your army since I have been in command here, have always set the finest example by their military spirit, their zeal and their professional worth.

Your aide-de-camp, Mr. Lee, who will take the army course of 1908–9, will be especially welcome among us, not only on account of the duties that he has performed under you personally, but also on account of the name which he bears, one that is renowned throughout the entire French cavalry.

Please accept, Mr. President, my renewed thanks and the expression of my most respectful sentiments.

O. MAZEL.

THE FORT RILEY BUNGALOW.

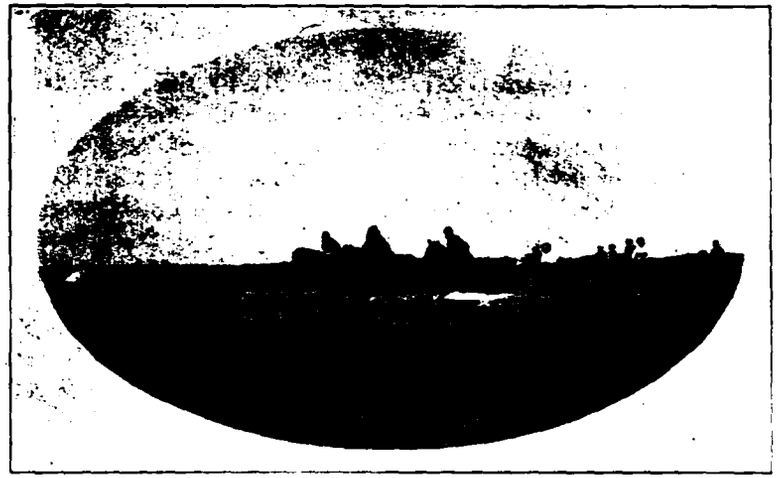
THE accompanying pictures illustrate a phase of outdoor life at Fort Riley that tends to make service at that post attractive.

The Quartermaster Department built a stone bungalow, at the request of the commanding officer, to serve as a nucleus for athletic sports, and to provide a place for the entertainment of visiting teams and players.

The development of athletics for officers has often proved futile, owing to lack of systematic work, rather than lack of facilities. The scattered attempts to play baseball and polo do not result in good team work. Here the sports are concentrated, and a good attendance is always assured.

The bungalow is located about a mile from the post, on the Smoky Hill bottom, across the Kaw River; this distance, instead of proving a drawback, is an advantage, as it furnishes a gathering place for those who tire of seeking exercise within the limits of the garrison sidewalk. In this respect it resembles a small country club.

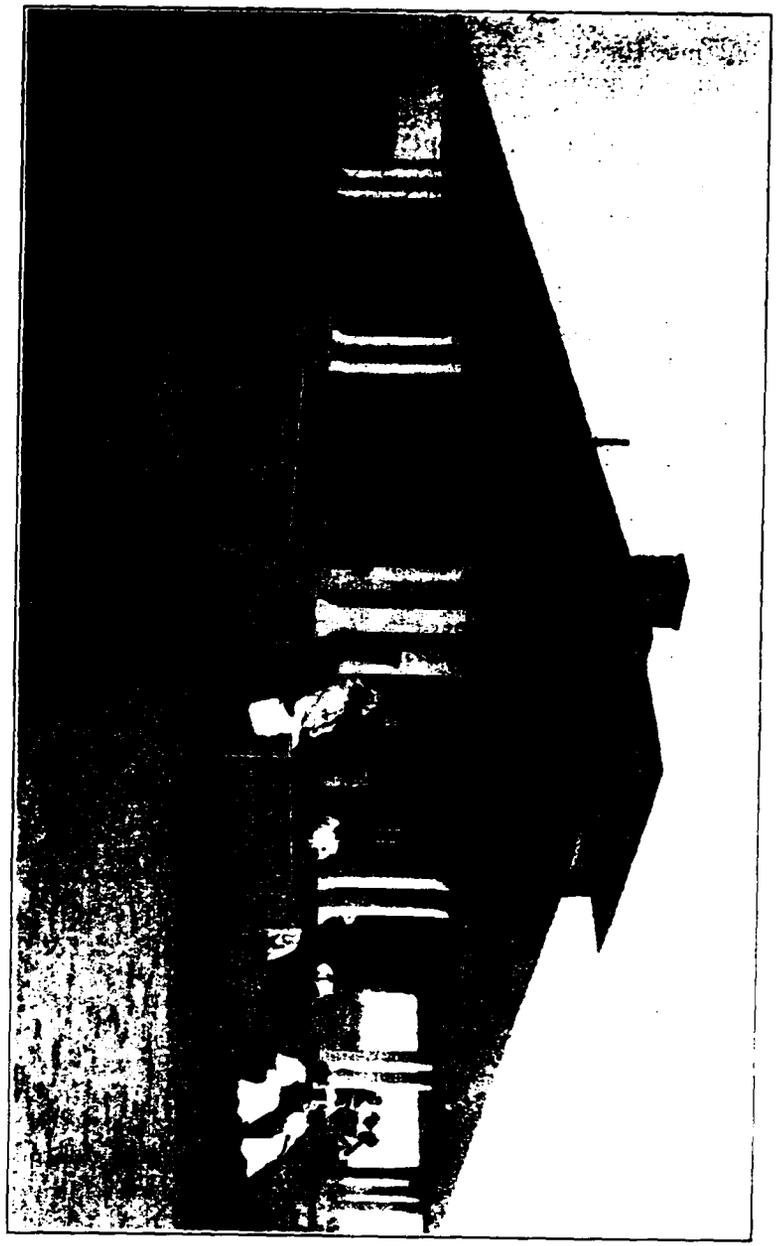
The little house contains a dressing room, kitchen, and a lounging room, where refreshments are served. It is sur-



CROSS COUNTRY RACE—LIEUTENANT DEARMAND, SIXTH FIELD ARTILLERY, WINNER.

rounded by the polo field, golf course, tennis courts, baseball grounds, steeple-chase course, and the traps for shooting clay pigeons.

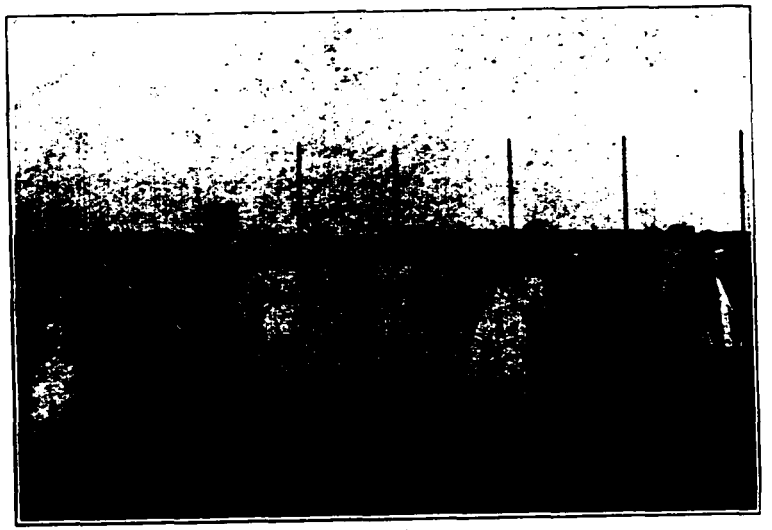
CIGAR AND UMBRELLA RACE—LIEUT. TAULBEE, SECOND CAVALRY, WINNER.



THE BUNGALOW.

The bungalow is available for outdoor entertainments and moonlight suppers, as well as for the regular schedule of athletic games.

The pictures shown here were taken during the "Pay Bill Celebration" last month.



THROWING THE BASEBALL.

The bungalow has proven a success in developing the healthy desire for open air amusements and, in addition, it has helped solve the problem of entertaining guests, distinguished and otherwise.

The photographs were taken by First Class Sergeant C. A. Heckelman, Hospital Corps, and Sergeant F. E. Hughes, Hospital Corps.

W. M. W.

APROPOS OF THE INCREASE IN THE NUMBER OF INFANTRY REGIMENTS.

THERE is no doubt that, to have the infantry bear a proper proportion to the cavalry and light artillery of our army and to allow it to remain at home stations long enough to recuperate from the effects of tropical service, its strength should be increased by about twenty regiments.

It has been recognized as equally true that, to preserve the efficiency of any arm, there must be insured to its officers a reasonable flow of promotion and, in our service, that this flow of promotion be about the same as in the other arms.

A slight study of the army register will show that the cavalry arm is at present suffering, not only from the lack of a reasonable flow of promotion, but also from the discrepancy between this flow and that in the other two arms.

The great mass of the officers of infantry are too young to know from personal knowledge what happened when that arm, after the Civil War, was reduced to twenty-five regiments; but many of the older officers do know what became of the officers who were thus rendered superfluous in that arm, and it is just at the present time, when the cavalry is suffering so seriously from dilatory promotion, that these officers should enlighten their juniors on this subject, and in any scheme for the increase of their own arm endeavor to compensate the cavalry for the check to promotion which its officers suffered through the transfer to that arm of officers from the infantry at the time the latter arm was cut down in 1870.

Let it be remembered that an army is composed of three arms, and that, in its ultimate destiny, battle, success cannot be attained unless each arm is thoroughly efficient, the complement of the others, supplementing properly their action, and constituting a perfect team in the hands of its commander.

The efficiency of the cavalry is threatened by the lack of promotion in that arm and by the inequality between promotion in that arm and in the others.

In any bill for the increase of the infantry, let there be provision for the incorporation into that arm of a certain proportion of all grades of cavalry officers; thus repaying the cavalry for the check to its promotion in 1870, and insuring to its officers promotion more nearly equal to that of officers of the other arms having the same length of service.

J. F. REYNOLDS LANDIS,
Major Sixth Cavalry.

THE NEW BRITISH CAVALRY SABER.

(From the *Morning Post*, London.)

To the Editor of the Morning Post:

SIR:—The letters which have appeared in your columns on this subject support the theory that the thrust of the sword is more generally effective than its cut; but our military reformers have need to remember that in war theories count for very little, and practice for a great deal. National idiosyncracies should be consulted in the choice of weapons; a Briton, a German, any man of Teutonic stock, will always naturally use a sword for cutting or slashing; a Frenchman, Spaniard, or Italian will equally naturally use it to point and thrust. Englishmen are generally better at singlestick than with the foils, and German students fight their duels with cutting swords. Napoleon was an Italian, and he advocated the point; his cavalry were trained to use the thrust, and at Waterloo the French cuirassiers used the thrust, while the English lifeguardsmen and dragoons used the cut, and invariably overcame their opponents. With our cavalry the cut is ineffectual, because their weapon is a bad one for the purpose, and because it is kept blunt by a steel scabbard. A Highland man with his claymore would cut, not only through clothes, but through chain mail, and a Turk with his scimiter would take off an adversary's head with one sweep.

The answer to the question whether the cut or the thrust is more effective depends on the weapon and the hand that uses it; a claymore in the hand of a Highlander or a scimiter in the hand of a Turk is as effective in a melée as a rapier in the hand of an Italian. All Oriental nations—Turks, Arabs, Afghans and Japanese—use the cut, and to give our native Indian cavalrymen a thrusting sword would be simply to turn good swordsmen into bad ones. The old broadsword or backsword with which the British cavalry was armed in the seventeenth and eighteenth centuries was an excellent weapon, and so was the saber used later by our light dragoons. The cut-and-thrust sword which replaced these weapons was a compromise which sacrificed the chief advantages of the rapier and the saber in the effort to combine them. The British trooper may be armed with a thrusting sword, but in the charge he is most likely to use it as a cutting one.

Yours, etc.,
F. H. TYRRELL,
Lieutenant General.

ROCKY MOUNTAIN ENDURANCE RACE.

(BY MAUCHLINE MUIR, IN "THE WORLD TODAY" FOR AUGUST.)

From *The Denver Post.*

(The endurance race conducted by *The Denver Post* to determine the best breed of horses in the world, attracted international attention. The race was deemed of considerable moment, and Mauchline Muir, a writer for *The World Today*, was detailed to write of it. In the article reprinted on this page Mr. Muir comments very favorably on the fact that the horses were treated in a very humane manner, and that there was no brutality permitted by *The Denver Post*, which paper promoted the race. He cites this fact in contradistinction of the brutality permitted in the European race from Vienna to Berlin, held some fifteen years ago.—EDITOR.)

* * *

AT 6 A. M., May 30th, twenty five horses shot from the starting line at Evanston, Wyo., to attempt a great endurance race to test the speed, stamina and bottom of the native-bred Western broncho. At 2:30 P. M., six days later,

two ponies came neck and neck across the finish line on Champa Street in Denver, having covered in that time 552 miles across the entire State of Wyoming and down into Colorado. The ponies which divided the honors for first place were "Sam," ridden by F. T. Wykert, of Severance, Colo., and "Teddy," ridden by Charles Workman, of Cody, Wyo. In the interval named, both horses and riders had crossed the Continental Divide, covered an average of 86 14 miles a day, and came in at the finish tired, but in very good condition.

The object of the race was to discover the value of the broncho both to horse breeders and to government officials of the cavalry branch of the army service. To this end the race was thrown open to any horse in the world. Several animals of good blood, notably some crossed with Hambletonian and Morgan strains, were entered, but not one of them came in among the first six who shared the prize money.

Before starting, each horse was thoroughly examined by veterinarians, and a record kept of its weight, age, description, and measurements. This was to furnish later data for comparison. The horses ranged in weight from about 850 pounds to about 1,075. The total weight carried by them was about 185 pounds, including rider, saddle and all equipment. All along the route were established checking stations, where the riders registered upon arrival, and the horses were examined by veterinarians and their condition passed upon before the animals were allowed to continue. Any horse found unfit to travel further with safety was ruled out of the race. As most of the horses were ridden by their owners, the greatest care was taken of them. The result was that the animals which stood the travel arrived in Denver in good condition, which was quite contrary to the facts of the last great endurance race, the one run from Vienna to Berlin, some fifteen years ago. Though the European race was over 200 miles less ground, the two winning horses were practically killed, one falling exhausted at the finish, and the other dying next day in the stable.

The course of the race was along the old Overland Trail, now followed by the Union Pacific Railroad. Evanston is in the southwestern corner of Wyoming, and from that point the trail swept in a long segment of a circle to Cheyenne, in the southeast corner, and thence south to Denver. Everywhere along the route the greatest interest was taken in the race. The news of the approach of the riders was flashed by wire, and all the ranches and little cow towns furnished an enthusiastic contingent to cheer the contestants on their way. Laramie, Rawlins, Cheyenne, turned out their entire populations, and at least 30,000 people lined up and waited patiently many hours for the finish. Every section of the Rockies from which there came a horse and rider had its local patriotism, and wired to the "favorite son" offers of additional prizes if he should capture first place.

The horse "Teddy," known by the cowboys as "that Cody hawss," took the lead from the start, and opened a wide gap between it and the rest of the racers. For the first day two other horses hung to its heels, one of them, a little thoroughbred stallion named "Archie," ridden by Trew, beating the Cody horse into Green River that night after covering 112 miles in about sixteen hours. The second day's travel took them through Point of Rocks and from there across the heavy sand of Red Desert. It was heavy traveling, and though the little thoroughbred stuck gamely to his work, the great strides of the big broncho, pounding steadily forward hour after hour, proved too much for the stamina of the other. "Archie" fell back beaten and "Teddy" trotted into Wamsutter alone that night, having covered 192 miles in two days with no apparent distress. The rest of the riders that remained in the race were from twenty to fifty miles behind Workman.

The leader reached Rawlins shortly after noon on the third day. He rested here for several hours, and before he had left, Kern of Colorado came in on "Dex." He was followed at intervals by Edwards, a Wyoming rider, and Means and McCelland, both of Colorado, the former riding a splendid blooded horse named "Jay Bird." Workman passed the night at Fort Steele, eighteen miles in front of the others. He had covered only sixty-nine miles the third day. From this time the best of the others began to close in on

"Teddy." He reached Medicine Bow (Owen Wister's town, made famous by "The Virginian") nearly two hours before Kern, who was followed by Means and Edwards. Next morning four leaders, instead of one, started out to set the pace from Medicine Bow, on the last half of the journey. The last of the riders left Rawlins at the same time, a good day's journey behind.

Some of the rear guard were already gaining fast on the leaders, notably Casto and Wykert. The latter especially was riding very strong. At one time sixty miles behind Workman, by long night rides and steady going his "Sam" came into Laramie late the same night that Workman, Means, Edwards and Kern arrived. Cheyenne was reached late the same afternoon, Wykert arriving first, followed by Workman, Edwards, Means and Kern, in the order named.

There was no sleep that night for the leaders. Denver was only 100 miles away, and Workman was away on the long trail as soon as he and his horse had finished eating. The others were roused from sleep in the stalls with their ponies to hear the news, and at once threw on their saddles and were away in pursuit. They caught him some miles out of Cheyenne, and a fast pace was set that weeded out, first, Kern on "Dex" then Edwards on "Sorrel Clipper," and lastly Means on his "Jay Bird." At Greeley, "Teddy" and "Sam" were going alone. At Fort Lupton they were still together; at Brighton there was not a rod to choose between them. Wykert's "Sam" was in much the better condition, but "Teddy" hung on and would not fall back.

The conditions remained the same till they reached the outskirts of Denver. It was plain that neither could win from the other without such a gruelling finish as might kill one or the other of the tired horses. It was therefore agreed to divide between Workman and Wykert first and second prizes. The horses, escorted by hundreds of riders and automobiles, rode through the great crowd and across the line in front of the office of *The Denver Post* side by side. The condition prize of $300 was awarded by a unanimous decision of the judges to Wykert's "Sam." Edwards on "Sorrel Clipper" took third prize, Kern on "Dex" fourth, Casto on "Blue Bell" fifth, and David Lee, riding "Cannonball," sixth. All of the ponies were bronchos, or had a large strain of broncho blood in them. They had covered 552 miles in less than a week, and came in still strong and fit. The finish of this extraordinary race seems to justify the contention that for a combination of toughness, speed, and stamina the native Western pony can hold its own against any horse in the world.

THE ARMY SERVICE SCHOOLS.

WHILE the cavalry branch of the service has reason to be proud of the records of their representatives at the Army Service Schools, and while it is hoped that this fine record may be maintained, it is feared that our cavalry officers generally are not taking advantage of the facilities offered by these schools as are officers of the other branches of the service.

The inference that this is not being done by our cavalry officers is drawn from the fact that but a small percentage of them are on the mailing list of the secretary of the schools, and that therefore they are not availing themselves of this most excellent opportunity to procure a great deal of valuable professional literature at little or no cost.

This mailing list has grown rapidly within the last year, now includes over six hundred officers, and is growing at the rate of five or six per day; but, as stated above, there are but a comparatively few cavalry officers on it.

To every officer on this list are sent copies of all problems, with their approved solutions, lectures, notes, maps, pamphlets on military subjects, etc., emanating from the schools. In nearly all cases this matter is sent free of cost to the officer concerned, and when a charge is made, as in the case of certain books, maps, etc., it is merely nominal, and only sufficient to cover the bare cost of material and labor.

That there is much valuable information, theoretical and practical, being thus disseminated to the army, and that the

Army Service Schools are thereby doing a great, good work cannot be doubted.

It therefore behooves our cavalry officers to get busy and not neglect this opportunity of picking up professional knowledge, even if they never hope or expect to attend the Service Schools at Fort Leavenworth. E. B. F.

Prize Problems.

AT a late meeting of the Executive Council of the Cavalry Association, it was determined to abandon the giving of prizes for the best solutions for problems, after the prizes for Problems Nos. 8 and 9 have been awarded.

This action was taken because of the small number that have entered these competitions, particularly as regards the later ones. During the last year there has never been more than three competitors that have sent in solutions for any one problem.

The Council has reason to believe, from the correspondence had regarding these prize problems, that this falling off in the number of competitors is not due to a lack of interest in them, but rather to a hesitancy in competing against those who had more experience in this line of study.

It is possible that, in the future, when more of our cavalry officers have had special training in map meneuvers, it may be well to try again the experiment, for it was an experiment.

The many suggestions, complaints, etc., regarding these problems show that much interest has been taken in them, and not a few have reported, verbally and by letter, that they study each problem, make their own solutions or draw their conclusions, and then wait for the published prize solution with much interest.

The principal complaint received has been as to the long time elapsing between the publication of a problem and the appearance of the corresponding solution, which has a tendency to detract from the general interest in them. This

great length of time was given in order to permit our comrades stationed in the extreme limits of the Philippines an opportunity to compete, although the disadvantage of so doing was foreseen.

The Council has therefore determined to return to the former plan of publishing a problem in each number of the JOURNAL and the corresponding approved solution in the succeeding number. This will give all who are interested in these studies the opportunity to make their solutions and to compare them with the solution adopted as the most correct one, without waiting so long that their interest has been lost in them.

Also, it is hoped that the publication of these problems will provoke discussions in our colums as well as in the garrison schools and elsewhere that will lead to profitable results.

For a year or more, it has been hoped that we would have another map, covering a larger extent of territory and more varied ground, and thereby permitting a greater variety of problems, but it has not yet appeared, and it will therefore be necessary, for some time at least, to use the same Fort Leavenworth four-inch map.

PRIZE PROBLEM NO. 7.

The Editor Cavalry Journal.

DEAR SIR:—The committee selected to examine the solutions of Prize Problem No. 7, has the honor to report that it finds the solution signed "Atchison Cross" the better of the two solutions submitted, and recommends that the prize be awarded the author. However, the committee is of the opinion that it would have been better to mount the prisoners behind the troopers and make a dash for safety by way of Sheridan's Drive with the entire command fighting only in case of necessity. In any case the detachments sent to Engineer Hill and 17 might have been much smaller and still have accomplished their missions, since their weakness would have been concealed by darkness.

MATTHEW E. HANNA,
Captain Third Cavalry.
A. L. CONGER,
Captain Twenty-ninth Infantry.

In accordance with the above report, the prize for the best solution of Prize Problem No. 7 has been awarded to Captain Howard R. Hickok, Fifteenth Cavalry.

PRIZE PROBLEM NO. 7—SOLUTION BY "ATCHISON CROSS."

1. COLONEL A'S DISPOSITIONS ON THE MARCH TO THE PENITENTIARY.

The following instructions were given and enforced: Every man will wear a white band on the left upper arm; in deployments guide on the right element; keep quiet, and no talking allowed except such as may be necessary, and that only in a low tone; adjust all equipments so that there will be no rattle; keep well closed up in column. All officers' watches were regulated by that of Colonel A. A guide was assigned to each squadron and Colonel A had one himself. The command marched in column of fours and kept well closed up. An advance guard of one troop, which had out a point of a squad, preceded the main body at 300 yards and a rear guard of one troop followed at the same distance. Connecting files preceded and followed the main body. The following small patrols were detached: At 47, one to watch for any Red force that might come from Kickapoo; at 17, one to Prison Cemetery, and one via Sheridan's Drive and a wood road to the woods near the commissary storehouse; from G, one to C, one to Engineer Hill and one to Merritt Hill; and from the Penitentiary, one each to Grant Hill, to 62, and to Metropolitan Avenue at road fork southeast of 70. Arriving at hill 890 just northwest of the penitentiary, the First and Second Squadrons dismounted to fight on foot. Troop "A" made a slight detour to the north and approached the east gate and face from the east, except one squad which was deployed on the north face. Troop "B" went to the south face and gate. Troops "C" and "D" approached the west face and gate, Troop "C" remaining on guard outside after Troop "D" had blown in the gate and entered. The Second Squadron was held as a dismounted

reserve and the Third Squadron remained mounted for all contingencies, and also had charge of the ten Red prisoners captured at Frenchmans.

2. HIS ESTIMATE OF THE SITUATION.

Colonel A's mission, the release of the Blue prisoners confined in the U. S. Penitentiary, resolves itself into two parts; first, the capture of the penitentiary and the delivery of the prisoners, and second, their safe conduct back to the east bank of the Missouri River. The first part Colonel A has accomplished without difficulty. He must now meet alarmed troops of the enemy. His regiment of itself can easily escape, but the released prisoners are on foot and without arms, except such as Colonel A has incidentally captured. These dismounted men add neither offensive nor defensive power to the movement; to the contrary, they detract from mobility, and are almost as defenseless as a convoy of wagons, and must be protected accordingly. Colonel A must, therefore, hold the enemy's attention long enough to allow the released prisoners to reach a point of safety.

Colonel A finds himself almost surrounded by the enemy. Six companies of infantry are quartered in Kickapoo. Of these, about a battalion is now at 17, on the route by which Colonel A advanced. A larger force of infantry, artillery and special troops is at Fort Leavenworth. An infantry brigade is quartered in Leavenworth. Fortunately for Colonel A, the nearest hostile cavalry is at Atchison, about eighteen miles away, and he can rest easy that no mobile troops will oppose him. As all telephone and telegraph wires have been cut, and as the garrisons of the Fort and of the city are just now being alarmed, the alarm was probably communicated by the two sentinels that escaped capture at Frenchmans, though it may have been given by some means that escaped Colonel A's observation. The presence at 17 of the force now there would indicate that the information had reached Kickapoo by some means sooner than it did the forces in the Fort and city. Halting at 17 and sending out patrols would indicate uncertainty as to the direction

taken by Colonel A, the snow having obliterated all tracks. The Red commanders may surmise the object of Colonel A's movement, or they may be still undecided as to that point and as to his present location. In any event, the Red troops are now alarmed. Those at the Fort and in the city will in a short time be out under arms, and will begin active measures to determine something of Colonel A's force and to operate against him. Darkness hinders their reconnaissance, and broken communications will prevent concert of action between the various columns.

The falling snow has favored Colonel A's movements by covering his tracks, at least so far as concerns the Kickapoo force. It is now 5 A. M., and daylight will not come for an hour and a half or more. In returning to Weston, to take the roads through Fort Leavenworth, or to try to force the bridge across the river there, is out of the question. The route by which Colonel A came is now blocked by the battalion at 17. There are two other routes open. One of these is the F–15 road, and thence by open fields to the Missouri River. The other is the Sheridan's Drive and wood roads to North Hill. These routes pass between the enemy's forces now at 17 and in Fort Leavenworth. They are not now held in force, though they may be held by small observation posts. The force at 17 is in a location from which it may move and materially interfere with the march of the released prisoners. The Sheridan's Drive route is farther from it, is on higher ground, affords better concealment on the march, and is the preferable route. If the released prisoners can pass north of the 11–17 road while the enemy is still at 17 and in Fort Leavenworth, the command may be considered safe

Such arms as were captured at Frenchmans and at the penitentiary can be issued to the released prisoners as far as they will go. The dismounted men will, of course, need additional protection of mounted men. In order to insure that the enemy will not advance upon Sheridan's Drive, he must be held near his present locations. The best way to hold the enemy is by attacking him. The smaller the force that can be used for this purpose and be effective, the easier will

its own retreat be accomplished. Two troops attacking 17 and five troops attacking Fort Leavenworth and Leavenworth should be sufficient. The attacks should be delivered in such a manner as to draw the enemy away from Sheridan's Drive, and to mislead him as to the size and composition of the forces attacking him. The darkness favors both conditions. In Fort Leavenworth all is confusion. The troops there are now forming under arms. The lights have suddenly gone out, the power being supplied from the city. This, taken in consideration with the direction in which the Blues were moving when discovered, would indicate to the Red commander in the Fort that the Blues may be interposed between the city and the Fort. An attack on the Fort from the direction of the city will favor Colonel A's plans. At the same time, the troops advancing from the city must be held back. An attack on 17 from the southwest will similarly draw off the battalion there.

From the penitentiary to 11 is four miles. Considering the snow and the effects that their long imprisonment may have had on some of the men, it will take the dismounted men possibly as long as an hour and a half to reach 11. That will be about 6:30 A. M., and the first light of dawn will appear not long thereafter. Considering the circumstances, the movement must be hastened. With seven troops disposed as above outlined, five will be available for duty nearer the convoy. One troop should be enough to guide the convoy, keep the column together, and pick up stragglers. The other four troops should go ahead of the convoy, brushing aside or capturing any posts on the route and taking a position in readiness at 15 to hold off the battalion now at 17, later following the column.

If the troops ordered to act against the forces at 17, the Fort, and the city continue their operations until 6:30 A. M., or daylight, they should have accomplished their mission, withdraw easily, and join the remainder of the regiment. However, in order to obtain success, Colonel A must act quickly, starting off his convoy and the various detachments at once. Considering the start his command will have and the enemy's lack of information and concert of action, Colonel

A should succeed in bringing off his regiment and convoy safely.

3. HIS DECISION.

Colonel A therefore decides to make disposition as follows:

Five troops to attack Fort Leavenworth from the direction of Engineer Hill and Grant Avenue and to delay any forces advancing from the city.

Two troops to attack the battalion reported as being at 17.

One squadron and the machine gun platoon to proceed quickly via Sheridan's Drive to 15 and take up a position in readiness against an advance by the battalion at 17, later following the convoy.

One troop to escort the convoy by Atchison Cross, E, Sheridan's Drive, North Hill, thence to Weston.

The troops designated for the attacks to delay the enemy until 6:30 A. M., and then to withdraw.

These dispositions scatter Colonel A's command a good deal. On account of the number of the separate detachments of the enemy whose attention must be held, this dispersion is unavoidable, and, due to the mobility of Colonel A's detachments and to the fact that they are only required to mislead and delay the enemy, the dispersion is justifiable.

Colonel A has caused the released prisoners to be divided into convenient sections of about 100 men each, to facilitate easy handling and marching. To one of these sections the arms captured at Frenchmans, and at the penitentiary are quickly issued and the Red prisoners captured at the same places are turned over to this section to act as guards. Lieutenant X was placed in charge of this section.

4. HIS ORDERS.

Colonel A then issues his orders verbally to his assembled field officers and troop commanders. These orders, if reduced to writing, would take the following form:

HEADQUARTERS SEVENTH BLUE CAVALRY,
U. S. PEN., NEAR FORT LEAVENWORTH, KANS.

FIELD ORDERS } 25 Dec., 07, 5:05 A. M.
No. 2. }

1. Call to arms has just sounded in LEAVENWORTH and FORT LEAVENWORTH. A battalion of Red infantry from KICKAPOO has halted at 17.

2. Our return to WESTON will begin at once.

3. (*a*) The First Squadron and Troop "E," Lieutenant Colonel B, commanding, will proceed quickly and attack FORT LEAVENWORTH between ENGINEER HILL and GRANT AVENUE, and will oppose any troops advancing from LEAVENWORTH. The enemy will be kept engaged until 6:30 A. M., at which time Lieutenant Colonel B will withdraw his command and join the regiment.

(*b*) Troops "F" and "G," Major C commanding, will proceed rapidly and attack the battalion now at 17 from a southwesterly direction. This engagement will be continued until 6:30 A. M., at which time Major C will withdraw his command and rejoin our column.

(*c*) The Third Squadron and machine gun platoon, Major D commanding, will proceed at once via SHERIDAN'S DRIVE to 15 and take up a position in readiness against an advance by the force now at 17. Orders for the withdrawal of this squadron will be given later.

The enemy must be kept away from SHERIDAN'S DRIVE until the safety of the convoy is assured.

(*d*) Troop "H," Captain C commanding, will escort the released prisoners via ATCHISON CROSS, E, SHERIDAN'S DRIVE, wood roads to NORTH HILL, thence to WESTON.

4. I will be with the convoy until 11 is reached, and thereafter with the Third Squadron.

A,
Colonel, Commanding.

Verbally to assembled field officers and troop commanders. Copy later to Division Commander.

Editor's Table.

THE U. S. CAVALRY ASSOCIATION.

The next annual meeting of the Cavalry Association will be held in Grant Hall at Fort Leavenworth, on January 18, 1909, as provided by our Constitution. It is hoped that all members, regular and associate, will sign and mail their proxies *without delay*, and thereby save your Secretary the trouble experienced last year in securing enough proxies to constitute a quorum and permit the Association to transact its business.

While a few, a very few, did send in their proxies promptly last year, the majority did not, and it was only by an extended correspondence with the larger garrisons that a sufficient number were procured before the meeting. A number came straggling in after the meeting had been held.

It is true that our officers are busy men, and all possibly have other matters of importance on their hands, but this does not apply to our members on the retired list, and, in many cases, to our associate members. However, it will take but a moment to sign and mail your proxies, and, in case a member is on duty with a regiment, the trouble of mailing can be avoided by handing the proxy to the regimental representative of the Association.

The Executive Council of the Association has lost two of its members, Major Boughton and Captain Steele, by reason of change of station, the former having been ordered on duty at the War College, and the latter to join his regiment in the Philippines. They have been active, enthusiastic workers on the Council, and your editor will certainly miss their assistance.

Captains Saxton and Eltinge have been elected as their successors, and it is believed that they will follow in the footsteps of their predecessors in taking an active interest in the affairs of the Association and its JOURNAL.

By the time this number of the JOURNAL reaches them, the regular members of the Association will have received copies of the proposed amendments to the Constitution, and it is to be hoped that they will take prompt action on the same, and return them to the Secretary at once. Regular members only have a right to vote on amendments to the Constitution of the Association.

There are two principal changes to the Constitution that have been regularly proposed, and some minor changes that follow from these two. These are, first, to reduce the number required to constitute a quorum at a regular or special meeting, and, second, to authorize the Executive Council to publish the JOURNAL more frequently, bi-monthly or even monthly, whenever, in their judgment, the finances of the Association and the interest manifested will warrant the change.

The other proposed changes are, as stated, minor ones, and, with a few exceptions, flow from the above mentioned two. Among them are the following: To constitute another class of members, to be composed of the non-commissioned officers of cavalry; to constitute a sub-executive council, to consist of one member from each regiment of cavalry, whose duty it shall be to look after the interests of the Association in their respective regiments; and to give a longer time between giving notice of any proposed meeting or action to be taken by the Association and the time of such meeting or action; this in order to give our members stationed abroad ample time in which to send in their votes or opinions.

Notwithstanding the fact that a *quasi* Chief of Cavalry has been selected and appointed, your Executive Committee has considered it wise to go on with the work of securing signatures to the petition to the President on this subject. This because it is believed that a detailed Chief of Cavalry will not carry the influence that will one having a permanent ap-

pointment and having commensurate rank. It is thought best to attempt to secure legislation on the subject, so as not only to make the office a permanent one, but to give the one appointed rank equal to that of the Chief of Artillery, and to outline and specify his duties and functions.

THE GREATEST CONFEDERATE COMMANDER.

A pamphlet bearing the above title has been published recently, and which is of great interest to the students of the history of the Civil War. It is made up of the answers received to a letter sent by Senator Culberson, of Texas, in the fall of 1907, to forty-three surviving general officers of the Confederacy, asking them to "give me your opinion as to who is entitled to rank as the greatest commander developed on the Southern side in that war."

As was to be expected, a large majority expressed themselves as being unqualifiedly of the opinion that General R. E. Lee was the greatest commander developed in the Civil War. Two gave that rank to General Joseph E. Johnston, two to "Stonewall" Jackson, one to J. E. B. Stuart, and two were undecided. Several stated that, had he lived, General Albert Sidney Johnston might have rivaled Lee as a great commander.

In many cases the reasons for arriving at their conclusion are given, and several give their second and third choice as the great commanders on the Southern side, while many content themselves with simply casting their vote.

Some make comparisons between General Lee and his opposing generals, as does General E. P. Alexander in the following quotation: "Some Confederates may put forward Jackson. But Jackson had an ill-regulated mind. He once favored raising the black flag and taking no prisoners; also during the seven days he shirked all fights possible. (See my Memoirs.) His head was not a level head, and his actions showed it. There is no other Confederate to dispute Lee's title. But Grant will perhaps be claimed by Federal admirers, and, I think, with more justice than the Confederates could claim the title for Jackson. For Grant they could claim the 'turning of Vicksburg' and its capture in '63, and the 'crossing of the James' in '64 (see my Memoirs), both notable problems in strategy."

Another says: "General R. E. Lee was the grand salient figure of the war on either side, and General Sherman the greatest on the Northern side; and if all our generals had been Napoleons the result would have been the same."

It would be interesting to have compiled the opinions of the surviving generals on the Northern side as to who was, according to their views, the greatest commander on their side during that war. It is believed that no such almost entire unanimity of opinion would result, as was the case among the Southern generals.

THE MACHINE GUN PLATOON.

The article by Colonel Parker that appeared in the July number of the CAVALRY JOURNAL, has brought forth two very interesting replies, which appear in this number. While Colonel Parker's article and the two replies relate principally to the relative efficiency of a machine gun platoon, as organized in our service, and a platoon of cavalry, yet there is room for discussion of the whole subject of machine guns, their use, organization, means of transportation, etc.

That this has been considered more seriously in foreign armies than in our own is evidenced by the fact of the large increase in the number of these guns in every army of Europe and in Japan, as well as the vast amount of literature on this subject that has appeared in the foreign service journals. In none of these journals is there a suggestion or hint that they should be dispensed with as an adjunct to a cavalry command, but, on the contrary, every writer advocates their use and gives examples where they would be considered indispensable.

The following extracts are taken from various foreign journals, principally from reprints in the *Journal of the Royal United Service Institution*, that have recently appeared:

"The *Militar-Wochenblätt* has published the following information with regard to opinions which are current in the Japanese army as to the employment of machine guns. Their employment was, it is known, to have been so profitable that it is of interest to know the Japanese point of view in this regard, where their experience was undeniable, more especially in the battles of Sandepu and Mukden.

"*Moral Effect.*—At less than 1,500 meters the moral effect of the machine gun is superior to that of artillery; whilst the length of the time the shell takes between the flash of its discharge and its impact gives time for the men fired at to lie down or get under cover. The grazing and uninterrupted fire of the machine gun does not give time for this.

"*Ballistic Effects.*—The action of a machine gun may be compared to that of a company of infantry; but its effect is, in reality, superior, for the immobility of the weapon whilst firing ensures results similar to that of picked shots. If the machine gun is provided with a shield, the gunners, feeling safer, will be cooler, and the consequent result even better. Up to 1,000 meters an efficacious fire may be reckoned on. Beyond that range fire may still usefully be maintained on large units or on moving artillery. Cases occurred when fire at 2,000 meters was successfully employed against deep columns.

"*Obligatory Suspension of Firing.*—The bursting of a gun at its fifth shot during the battle of Sandepu may be cited as an example (irregular expansion resulting from the heating caused by firing). There were also frequent cases of extractors breaking. One should expect the weapon to jam about every 300 shots. Broken extractors are inevitable. The jammings are generally due either to insufficient oiling or to dust: but frequently to the awkwardness of the gunner. Owing to these constant suspensions of fire, machine guns should not, as a rule, be engaged singly, and the two machine guns of the same section should be kept together.

"*Gun Carriages and Mode of Transport.*—The machine gun carried on a wagon loses a part of its mobility on the battlefield. It cannot follow the infantry, and consequently escapes from the control of the commander. The noise of carriage wheels, especially at night, betrays its presence. It *is, therefore, necessary that machine guns attached to infantry should be carried by pack animals.* The tripod carriage is superior to the sledge carriage. The machine gun must be carried by hand, for actual work, by making use of the ground.

"*Chance Encounters.*—In such case the advance guard ordinarily endeavors to occupy several advantageous positions to give the main body the necessary time and space for its deployment. This is the moment when the mobility and fire power of machine guns makes them most useful.

"*After Carrying a Position and in the Pursuit.*—As soon as a position has been carried, the assailant should take advantage of the mobility of the machine guns to bring them up to the position taken, to coöperate in the fire of the pursuit, and to guard against counter attacks. The infantry which has delivered the assault is generally too weak for this, and artillery requires time to make its changes of position. On the other hand, the machine guns which have taken part in the decisive action are within effective range, and are thus clearly indicated as the most suitable agents for ensuring the possession of the point carried.

Defensive Action.

"The following are the objects to be sought in the employment of machine guns in the defensive:

"1. Powerful action against the position from which the enemy will emerge for the attack.

"2. Defense of sectors, where it is desirable to maintain a strictly defensive attitude, and to employ a weak effective, so as to be able to have a large body of men available to assume the offensive.

"3. Protection of weak or very important points, where, in consequence of the dearth of space, it is not possible to employ infantry.

"4. For operation against an enemy in places where he is forced to change his formation to a narrow front.

"5. Sweep dead angles in front of the line of defense.

"6. Sweep intervals between two *points d appui* or to flank a *point d appui.*

"It is artillery, and more especially shrapnel, that machine guns have most to fear. But, even if cover has been prepared for them, they run the risk of being reduced to silence, and it is prudent to construct beforehand emplacements for changing to. It will often be the most useful duty of artillery to reduce machine guns to silence.

"*Machine Gun Drill Regulations* —The *Ruskii Invalid* gives the following information regarding the Drill Regulations for Machine Gun Detachments, which have been issued to the Japanese infantry and cavalry:

"Infantry and cavalry have the same type of machine gun, viz., the Hotchkiss. The machine gun used during the later war had shields, which were too heavy and cumbersome, especially in offensive action. The shields have been given up, and the guns must obtain cover by means of the ground.

"The cavalry machine gun detachment consists of eight guns, divided into two sections. Each cavalry brigade has one of these detachments, which may be easily distributed between the two regiments of the brigade. All the *personnel* is mounted. In addition to the seven gunners per gun, as in the infantry, there is a mounted leader to every pack animal, and a leader for the horses of the gunners of each gun. To every machine gun there are four mules, carrying ammunition (2,400 cartridges per animal).

"The machine gun may, for a short time, give superior effects to those of the rifle. It would, however, be a mistake to employ them in a fight lasting for a long time. Fire should not be opened on lines of skirmishers, nor on hostile machine guns, unless one knows the exact emplacement of the latter. Night firing may give good results if aim has been laid during the day, or if the objective is revealed by searchlight. Machine guns should not endeavor to replace artillery, or to enter on a long range engagement with that arm. Should, however, the ground permit of their flank action against artillery, good results may be anticipated. As a rule, the entire detachment is engaged at the same time."

CAVALRY MACHINE GUN DETACHMENTS IN AUSTRIAN ARMY.

"1. *Organization of Detachment.—Personnel* necessary for serving a machine gun: 9 mounted men (1 sergeant in charge of gun, 2 gunners, 2 ammunition carriers, 4 men to lead horses), 4 pack horses (1 for the gun and 3 for ammunition).

"*Cadre of a Section of Two Guns:* 1 mounted subaltern officer, 6 mounted men (1 sergeant major for the 1st and 1 sergeant-major for the 2nd section), 2 connecting agents, 1 armorer, 1 range-finder, 1 unmounted orderly; or per section: 1 officer and 23 mounted men, 1 unmounted man, and 32 horses.

"*Cadre of a 4-Gun Detachment:* 1 captain, 2 under officers (1 for ammunition and 1 for pay), 1 trumpeter, 1 sergeant, 1 saddler, 1 orderly unmounted. The detachment has in addition: 2 6-horsed ammunition wagons and 2 led spare horses. Its total effective is therefore 3 officers, 62 men (5 unmounted), 84 horses (54 saddle, 16 pack, 12 draught, 2 spare), and 2 ammunition wagons.

"*Total Ammunition Supply:* 15,000 rounds per gun (5,000 on the horses and 10,000 on the ammunition wagons).

"*Conduct and Employment of Machine Guns.*—'The *rôle* of cavalry machine guns is to increase the fire-power of the cavalry, to support it everywhere, and to assist it in carrying out its many various missions, both in mounted and dismounted action. The detachments must therefore be instructed in, and imbued with the cavalry spirit.' Machine guns should participate in the decisive action; in the event of success to pursue the enemy with a hot fire, and in case of attack to cover the rally or the retreat.

"On account of the rapidity of the cavalry fight, the entry into line of machine guns in sufficient time is frequently accompanied by very great difficulties. 'At the same time, a commander, animated by the true dashing cavalry spirit, which judges the situation and the ground at a glance, will frequently be able to use his machine guns rapidly and boldly, even when he may have received no orders to that effect.'"

THE BRITISH CAVALRY JOURNAL.

While not intending to form a mutual admiration society between ourselves and the editors of the *British Cavalry Journal*, yet we cannot refrain from acknowledging their kind words regarding our JOURNAL that appears in their July number, and also in again calling attention to the many good things, live cavalry articles, to be found therein.

Their journal is always well printed in clear, large type, on first-class paper, and in a style as to binding and paper that we can not hope to equal, even if we could afford to do so.

The first article in the July number is a precis of the new Cavalry Drill Regulations of the Japanese army, and from which it is seen that this progressive, up-to-date nation, as regards things military, can give us some valuable pointers regarding cavalry, although it is universally agreed that their cavalry was, and presumably is still, poorly mounted, and was not well handled during the Russo-Japanese War.

The simplicity of their drill is to be admired, and they are apparently not burdened with the numerous and useless formations that we have in our squadron and regimental drill, the line, squadron column and column of route being the only squadron formation, and they have but six formations in regimental drill, and similarly for the brigade formations. The total time spent by the writer on the drill ground in executing absurdly useless movements that we have in our drill, squadron and regimental, would foot up to many months, if not years, that was lost to all that participated in them.

The Japanese lay great stress on fire discipline and on mounted action. Regarding the latter, they say: "The weapons of cavalry are the sword when mounted and the rifle on foot. *As a general rule, cavalry will fight mounted*, but when there is little hope of success by mounted action alone, the rifle will be used to supplement it and assist in attaining its aim." "The cavalryman's first weapon is his horse; he should cherish it before his own body, and thus in an emergency he can rely upon it without fear of failure." "The independent duties he is often called upon to perform demand, in the cavalry soldier, an intelligence and a self-reliance superior to that of any other arm."

The other leading articles in this number are: "Famous Cavalry Leaders;" "The French Cavalry School;" "Irregular Troops in the Field;" "Night Operations;" "The Kurdish Militia Cavalry" and "The French Cavalry in Morocco."

RIFLE *vs.* CARBINE.

The idea has been advanced by some of our cavalry officers that a great mistake was made in equipping our cavalry with the rifle, and that we should return to the use of the carbine. They argue that no satisfactory scheme has been devised for carrying the rifle, and none is likely to be adopted that will do away with the cumbersomeness of this arm; that the horse is now overloaded, and every extra ounce of weight is detrimental to efficient field service, and that the small gain in accuracy of fire, which is at the longer ranges only, is more than offset by the extra weight and discomfort to horse and rider in carrying this arm.

The following extracts from the *Militar Wochenblatt* on the subject of the "Cavalry Dismounted Action" bear upon this question:

"Whether it will be possible, after arming our men with a weapon equal to the infantry rifle, to make them just as good cavalry soldiers (not marksmen, for there is already scarcely any difference) must be doubted. It is represented that it is for this very reason that we keep our men for three years; the writer feels sure that every expert will agree with him that it is much more difficult to make a good rider in two years than to train a good infantry soldier in the same time. With this, however, our work is not nearly finished, for besides instruction in riding and attention to matters of detail, which are included in our training just the same as they are in that of the infantry, we have to instruct our men to make the most efficient use of the saber or lance.

"A cavalryman will certainly never regard his horse as a mere means of transport, for in this case he would turn himself into a mounted infantryman, and after the bitter experience the British had in the Boer War, no sensible man still gives a thought to mounted infantry, and therefore the first principle with our splendid arm must and always will be 'The cavalry must in the first instance be able to ride.' This cannot be laid stress on too frequently.

"It certainly sounds very well when it is said that we ought to be able to fight just as well on foot as when mounted, but the way to ensure this has not yet been discovered and is not likely to be."

This question is a serious one for our cavalry, and it would be well for some of our writers to take it up.

HORSEMANSHIP.

The following extracts are taken from articles on this subject appearing in the service journals indicated:

"Horsemanship has received special attention lately in the American army, but it is questionable whether the test to which President Roosevelt subjected his officers produced any practical results in the end. So much publicity was given to the whole business, and so much general attention was drawn to it, that it evoked a good deal of ridicule and good-humored banter from the press, and it has not yet leaked out that the results of the tests led to any material improvements being made in the American methods of instruction in military equitation. Yet the Americans are not without their lessons of the value of effective cavalry in warfare, for it was the absence of Confederate cavalry and the presence of Union cavalry under Buford which made it possible for Reynolds' infantry to seize and occupy that magnificent defensive position which insured victory to the Union arms at Gettysburg, and it was such cavalry which, under Sheridan, culminated in the victory at Appomattox."—*United Service Gazette.*

"He grew into his seat;
And to such wond'rous doing brought his horse,
As he had been incorps'd and demy-natur'd
With the brave beast."

—*Hamlet, Act IV, Scene 7.*

"Many authorities have written on the subject of seats, but few horsemen of the present day could reply if asked the practical reasons which governed the adoption of the various styles of riding from the times of the ancients down to our day. Xenophon advocated a straight legged seat; the knights of old, and later the cavaliers, rode perched on their forks, while the American cowboy does so to this day, and up to seven years ago the British soldier almost stood in his stirrups.

"A firm and well balanced seat is of the utmost importance, and the want of it will never be made up for by any other excellencies of horsemanship.

"Adams, a well known writer of the beginning of the nineteenth century, laid down that there should be three different seats on horseback, in compliance with the needs of all classes of riding; namely, the Haute Ecole seat, with the leg practically straight; the military, with the knee slightly bent, and the hunting seat, with the knee rather higher. If he had lived in the present day he would have added a fourth, the monkey or racing seat, which came to us from America.

"It is a mistake to suppose that the bent knee came in with the stirrup; stirrups were not invented till the fifth century, and were not common in the twelfth, yet according to Berenger, the ancient Eastern nations always rode with the leg bent.

"Xenophon, who was born about 100 years later, seems to be among the first writers on equitation who advocated that the horseman should sit on his fork. Over 2,000 years ago he wrote: 'Whether he uses a cloth,* or rides upon the bare back, we should not have him sit as one who drives a chariot, but as if he were standing erect with his legs somewhat astride, for thus his thighs will cling closer to the

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"*The Greeks used 'clothes' or 'housings,' and not saddles."

horse, and being upright, he will be better able to wield his lance and shield with more force.'

"The medieval knights all used this seat in the lists, for not only did it enable them to put more weight into the thrust, but they were less liable to overbalance backwards after the collision than if their knees had been bent and used as the pivot. Indeed, their high peaked saddles admitted of no other posture.

"The cowboy retains this seat, as it is well suited to his horse and to his work. He has to cross no fences, trotting is unknown to him, and as he pivots on his fork, he can bend and turn at will to sling his lasso. The balance of the body must be more perfect in this position than in the hunting seat, and the rider's weight is nearer to the withers — a most important thing.

"Though Haute Ecole training never seems to have been generally popular in England after hunting commenced over enclosed countries, and is practically unknown in the present day, the majority of writers on the subject of equitation up to about 1850, agreed that the straight legged seat was the best, and the only one to be recommended. It is, therefore, not surprising that up to the year 1900 it was the order of the day in the British army.

"The best position for the rider is that which is most agreeable to himself and his horse. The loosely named hunting seat is certainly the one for all round work; what little discomfort the horse suffers from having to carry the weight further back is amply compensated for by the discomfort and fatigue he escapes when ridden over a rough country, or with his rider bumping to the trot along a hard road.

"The reader will rightly ask why, if the long stirrup is still suited to the cow-puncher, it is not adopted by the polo player? The answer is, that it would do well enough if polo were played in the cowboy's short-seated, high peaked saddle.

"To recapitulate: Fighting on horseback brought in the straight legged seat, and hunting has driven it out.

Mobility, *i. e.*, getting onto the battlefield, is more important than greater efficiency for possible shock action on arrival.

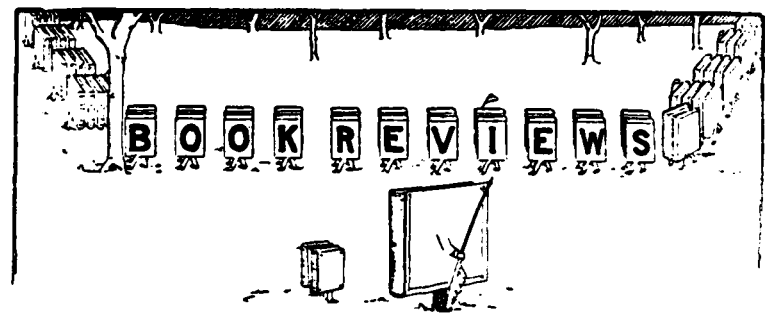
"It has been said that about four-fifths of the art of horsemanship depends on attaining a just seat, and one-fifth on possessing a pair of light hands.

"The writer has not, in his humble opinion, come across a paragraph on the subject of hands of more excellence than the following, written by Lord Pembroke, in 1761:

"'Delicacy in the use of the hands, as well as in the use of the legs, may be given by the teacher to a certain degree; but 'tis nature alone that can bestow that great sensibility, without which neither one nor the other can be formed to any great perfection. A hand should be firm, but delicate; a horse's mouth should never be surprised by any sudden transition of it, either from slack to tight, or from tight to slack. Everything in horsemanship should be effected by degrees, and with delicacy, but at the same time with spirit and resolution. The hand which, by giving and taking properly, gains its point with the least force, is the best; and the horse's mouth, under this same hand's directions, will also consequently be the best, supposing equal advantages in both from nature. This principle of gentleness should be observed on all occasions, in every branch of horsemanship. Hard, bad mouths may appear soft and good to an insensible hand; so that it is impossible to form any judgment of a horse's mouth by what anybody tells you of it, unless you know the degree of sensibility and science that a person is possessed of in horsemanship, or ride the horse yourself.'"—"*Seats and Hands*," *in Journal of the Royal Artillery.*

* * *

"A cynic once made the remark, perhaps not quite devoid of truth, that no horse has a sufficiently good mouth to be perfectly controlled by a snaffle, and that no man has good enough hands to ride a horse on the curb."—*Journal of the Royal Artillery.*



Notes on Field Artillery.*

The title to this little volume announces its purpose, and the endeavor of the author appears to have been throughout to explain in simple, non-technical language what field artillery is, what it can do and how it does it.

The necessity for such a work has long existed in our service. The majority of our officers have been wont to consider field artillery a purely technical arm of the service, whose functions on the field of battle were to get into position and shoot, and whose tactics did not extend beyond finding a position within good artillery range from which the enemy might be seen and fired upon. This idea has led in the past to serious misconceptions of its functions, and on the few occasions within recent years, when the guns have been used in our army, the artillery commanders have been sometimes so hampered by orders limiting their actions or so neglected in the whole matter of information and orders as to render them unable to accord the proper support to the other arms.

*"Notes on Field Artillery for Officers of All Arms." By Captain Oliver L. Spaulding, Jr., Fifth Field Artillery, U. S. Army. Published by the U. S. Cavalry Association, Fort Leavenworth, Kansas. 1908. Price, $1.25; if desired without maps, $1.00.

The lessons of the Russo Japanese War, though this was fought with guns whose fire was only "*accelerated*," and the advent of the rapid fire materiel have so clearly developed the fact that field artillery is not only a technical but a tactical arm, that it has become apparent to all students of tactics that a commander who fails to utilize his artillery to the best advantage is likely to risk defeat or to attain his object only after disproportionate losses to his infantry.

Moreover, when we consider the increased power of the new materiel, a battery of four rapid fire field guns being able to develop a greater volume of fire than six batteries of six guns each of the old materiel and to distribute that fire to better advantage, both in front and depth, the necessity to a commander of a good working knowledge of the tactical employment of field artillery becomes more important than ever before.

The subjects of materiel, methods and tactics have been treated very extensively by a number of foreign writers, notably Rouquerol, Langlois, von Rohne and Aubrat, and very detailed studies have been made of reconnaissance, the occupation of positions, control and direction of fire, etc., but the average cavalry or infantry officer will not care to wade through the mass of technical matter in their works for the limited information he desires.

Captain Spaulding's book seems to supply admirably just what these officers require The opening chapters acquaint them in clear, concise language with the general characteristics of the arm, its classification and organization, giving here and there historical examples which add to the interest of the text, and closing with a summary of the organization of the field artillery of foreign armies which cannot but be of value to everyone.

The chapters on materiel, methods of fire and drill regulations are clear, intelligible, and do not go into unnecessary detail. The diagrams materially assist the text, and in some cases more clearly explain the principles of construction than would an examination of the gun itself.

The chapter on tactics, the most important in the book, is necessarily short and rudimentary. The tactics of field ar-

tillery can be expanded into volumes, just as can those of the other arms; in fact, volumes have already been written on the subject, and no doubt the future will produce many more.

The idea has been to give the reader a good general conception of the role which field artillery will play in battle, how it comes into action, its duel with the opposing artillery, the diversion of its fire to the enemy's line of battle, its support of the advancing infantry until the last moment when it can safely fire on the hostile position, and its action after a successful assault or a repulse. The order and sequence of events might be criticised, since there is no determinate type of combat, each case admitting of a number of solutions; but it is safe to say that, should the critic attempt to produce a more satisfactory solution, his work might be subjected to as much criticism as the text.

The last chapter deals with the concrete case, at present the favorite method of demonstrating tactical principles. In the first case, a tactical situation is given of field artillery with a small command, and the resulting problem is solved. This problem has already been published in a volume of "Studies in Minor Tactics," and is used in the course of instruction at the Fort Leavenworth Service Schools.

Following this are six problems in artillery fire and maneuver tactics, based on the maps of Forts Leavenworth and Riley. It is to be regretted that two maps are necessary with the book, but it should be taken into consideration that as yet we have but few maps, and those of limited area, on which such problems can be solved. Moreover, in the solution of map or terrain problems, it is well to have a variety of topographical forms, lest we be led to deduce general principles from special cases.

In conclusion, the book seems to fulfill the purpose for which it was written—that of making the cavalry and infantry better acquainted with the arm which will be their powerful auxiliary if properly used; and it is hoped that the field artillery may be the greatest gainer by this better understanding, through the bond of interest and cordial cooperation which it is desired to establish.

Staff Rides and Regimental Tours.* This is a new book of 495 pages on the method of conducting staff rides, and is exceedingly valuable to one who is to act as director or assistant.

"Staff Rides" is a somewhat generic term applied to military studies or exercises on the ground by officers without troops. As such it is manifest that they can be made to illustrate, and enable officers to practice, any kind of military operations in the field, from the movements of a patrol to strategical and tactical operations on a larger scale, including the problems of logistics and sanitation incidental thereto. Logically, however, the term should be limited to those terrain exercises held for the instruction of staff officers. Tactical rides or walks to enable officers to study how companies, battalions and regiments would actually be handled under given conditions, the author calls "regimental tours."

With a clever director, staff rides afford a valuable means of educating officers, and should form a part of the scheme of instruction at every post.

Including the *terrain exercises* of the School of the Line, staff rides now form a part of the progressive course of *practical* instruction at the Fort Leavenworth Service Schools. This instruction begins with map problems, and is carried through the terrain exercises of the School of the Line, staff rides in the Staff College, and the war game and field maneuvers in both schools, the Signal School coöperating.

The great drawback is the great amount of work involved, and the difficulty of finding officers who are really skillful directors. It is so much easier to work map problems and practice the war game, that we are apt *to find no time* for the more strenuous outdoor work.

In the introduction the author discusses the methods of imparting military training, and gives examples of what staff rides enable officers to study. For example:

1. The preparation of plans of campaigns.
2. The organization of systems of intelligence (information).

*"Staff Rides and Regimental Tours." By Colonel R. C. B. Haking, of he British Service. Hugh Rees, Ltd., London, 1908. Price, 8s. 6d. net.

3. The organization and defense of the base and line of communications.

4. The study of strategical and tactical situations from day to day—reconnaissance, marches, halts, camps or bivouacs, etc.

5. The preparation and issue of orders.

6. Transportation.

7. Supply.

8. Discipline, prisoners of war, etc.

9. The sanitary service.

And many kindred questions enabling instruction to be given to all classes of staff and line officers.

Chapter II is devoted to the preliminary arrangements for a staff ride.

In Chapters III to VII the *preparation of the scheme is discussed.* This is unduly elaborated. Any able officer with a good imagination can devise some scheme on any piece of ground. Judging from the space the author has given this subject, one might infer that Englishmen are as unimaginative as they are sometimes said to be.

The remainder of the book is devoted to studies exemplifying methods of conducting different staff rides. Situations are given and the officers required to solve the many problems that can be based thereon. The chapters on appreciating (estimating) the situation, and on orders, are especially interesting.

A packet at the end contains numerous small sketches and other matter explanatory of the text. The book is well written, and a good production of the bookmaker's art.

After reading the book, one wonders if English officers are as energetically studying the art of war as Colonel Haking implies—the work having grown out of experience. If so, they will not again, so long as this strenuous work continues, be subject to the criticisms which followed the Boer War.

D. H. B.

Report of the Santiago Campaign.*

For the first time, this official report of the late lamented Wagner becomes public property through private publication, and some new light is thrown on the mistakes of the Santiago campaign, which the military student will do well to remember.

Early in June, 1898, Colonel Wagner was directed by the Major General Commanding the Army, to establish a bureau of military information, in connection with the headquarters of the army in the field (Tampa, Fla.), and by subsequent (confidential) orders he was directed to proceed to Santiago, open communication with General Garcia, and consult with General Shafter in regard to his duties.

Reading between the lines of Colonel Wagner's intensely interesting report, the reader will not fail to note that Colonel Wagner's efforts to carry out the instructions of the Major General Commanding the Army, were not very heartily seconded by the commander of the Fifth Army Corps, although the latter had been enjoined to afford "every facility" for carrying out those instructions. The reconnaissance work was claimed by the Chief Engineer of the corps; General Shafter refused to make use of the clerical force and secret service funds at Wagner's disposal; and his assistant, Captain Anderson, was detached. Not willing to remain an idle spectator, Wagner offered his services as volunteer aid to General Lawton, which offer was promptly accepted; and thereafter he had charge of Lawton's reconnaissance work. Previous to the battle of July 1st, Colonel Wagner reconnoitered on foot as far as the Ducrot House, about two miles beyond our outposts, and from his notes drew a rough map, showing a new trail which was subsequently used by Ludlow in moving upon El Caney.

In brief, Colonel Wagner's comments are as follows:

Embarkation.—There was much confusion and delay in loading the transports; clothing was unsuitable; supply of-

*"REPORT OF THE SANTIAGO CAMPAIGN." By Arthur L. Wagner, Lieutenant Colonel, U. S. Army, Assistant Adjutant General. Franklin Hudson Publishing Company, Kansas City, Mo., 1908. Price $1.00.

ficers were inexperienced; shipping quartermasters failed to mark on cars the character of the contents; the private traffic on the Plant System running into Tampa was allowed to interfere with important government business; the transports were deficient in quantity and unsuited in quality; and, in general, there was lack of a carefully thought out system.

Landing.—The choice of a landing place was judicious, but some provision should have been made for communication between fleet and shore, and for proper reconnaissance. The landing was effected with much difficulty because there was but one lighter with the transport fleet; and although by sunset of the first day Wheeler's command had been landed, not a single horse or mule was ashore—a fact which materially affected subsequent operations.

The Advance.—The regiment designated as advance guard for Lawton's division was not ready, owing to delay in preparing breakfast for the men, and the march did not begin until thirty minutes after the appointed hour. This, in Colonel Wagner's opinion, caused the advance guard to miss meeting, and perhaps defeating a Spanish battalion at Siboney. As there was not a single mounted man with the entire command moving forward at this time, the hostile battalion was able to escape. At Siboney, Wagner took pos session of the first Spanish flag captured in Cuba.

Las Guasimas.—Colonel Wagner comments adversely on General Wheeler's action in moving forward to attack the Spaniards at Las Guasimas; Lawton was to have been in advance, and Wheeler, Kent and Bates were to follow in the order named. The army was first to be concentrated at Siboney, and there supplied with the requisite rations and ammunition before beginning a forward movement; this plan was disarranged by Wheeler's march to Las Guasimas.

The action at the latter place, and the hurrying forward of Lawton's command to Wheeler's support, seriously affected the supply question, as no food supplies were ready to be sent so far to the front, and Young's brigade also needed ammunition. There was, therefore, for some days, a serious lack of supplies, including medical stores. One of the most serious drawbacks was lack of tobacco.

The Battle.—Colonel Wagner criticises the lack of proper reconnaissance, which was not sufficient to locate the enemy's position, or gain adequate knowledge of the ground over which the attack was to be made. It could easily have been effected by half a dozen officers' patrols, but nothing of this kind was ordered, although there were doubtless many competent young officers who would have been more than willing to undertake such duty.

Colonel Wagner considers the plan of battle, an attack on El Caney, a subsequent independent attack on San Juan, and an envelopment of the San Juan position by the El Caney troops, "as good as any that could have been devised." But its faults lay in its execution, and these, the writer ascribes primarily to lack of proper reconnaissance of the ground west of El Pozo.

Although three days' rations were ordered supplied the troops before the battle, this order does not appear to have been carried out.

El Caney.—The fire from Capron's battery upon El Caney was "feeble;" his guns were unopposed by artillery, and remained at long rifle-range from the Spanish position; the artillery fire was scattered too much, and failed to properly prepare the infantry assault until very late in the day.

The order of the corps commander to withdraw Lawton's entire force from in front of El Caney is incomprehensible. If it was necessary to attack El Caney at all, or to mask it, it was certainly necessary to leave adequate force to hold the Spanish force in check.

San Juan.—Preceding the battle, it became necessary for Generals Kent and Hawkins to ride forward under fire and make a reconnaissance—"which should have been made before by others." Consequently, the troops "pushed along blindly, not knowing where they were going, and, owing to the lack of intelligent orders regulating the march, the road was distressingly crowded"—the parallel columns of the infantry and cavalry divisions moving on the same narrow route.

The disastrous balloon reconnaissance brought about a loss of from sixty to one hundred men, and the sole result

accomplished was the discovery of a narrow trail to the left, which should have been located by a small patrol. For the first, and perhaps the last, time in military history, a balloon was seen on the skirmish line.

Referring to the Seventy-first New York Volunteers, Colonel Wagner states that they became demoralized, refused to move forward, and many broke in panic to the rear. General Kent and his officers formed a cordon for the purpose of stopping them, but, finding this impossible, they were ordered to lie down in the thicket, and the Third Brigade "marched over their prostrate forms."

The separation of the Rough Riders from the troops in the rear, and the regiment's march of about half a mile to the right flank, is ascribed by Colonel Wagner to the "hazy orders to establish connection with and lend assistance to Lawton."

"In the battles of the 1st of July," the writer says, "the part played by the artillery was very disappointing to the army. The smoke of Grimes' battery rendered it an easy mark for the enemy's guns, and its fire ceased after about three-quarters of an hour; Best's and Parkhurst's batteries then took position on the firing line, and the artillery was again in action at intervals." * * * "The services of the Gatling battery were conspicuous and of great value."

Aguadores.—Regarding General Duffield's demonstration against Aguadores, the writer says: "The operation was generally regarded as a failure, though its success seems to have been problematical from the first. If Duffield's command could have been landed on the west side of the river, it could have taken the enemy in flank, and doubtless could have effected important results."

After the Battle.—Referring to the round-about night march of Lawton's division on the night of July 1-2, Colonel Wagner says:

"I have never been able to understand the cause for this movement, nor has anybody who was in position to know ever explained it to me. It seems to have been undertaken from a fear of a heavy attack on Lawton's right. * * *

"Owing to illness resulting from fatigue, and heat prostration, General Shafter was unable on the 1st of July to exercise the influence on the course of battle that a commanding general is ordinarily expected to exert. Early in the day he took his position on a high hill, near his headquarters, in order to get a better view of the field; but, unfortunately, the nature of the country was such that an unobstructed view could not be obtained, nor, owing to the general use of smokeless powder by the two contending armies, could the course of the battle be traced by the lines of smoke, as might have been done a few years ago. In the afternoon he rode to El Pozo, but, owing to his illness, was compelled to return to his headquarters. His physical infirmity thus prevented him from being present with the troops, and the peculiar topography of the country rendered it impossible for him to gain speedy information in regard to the condition of affairs at the front. As a result, his aids were compelled in some cases to give important orders on their own responsibility; the subordinate commanders were in many instances compelled to act upon their own initiative; and the confusion was greatly heightened by the lack of knowledge of the terrain over which they were operating, and also by the fact that the brigades and divisions were newly organized, and had had no experience in operating together."

The above is quoted in full, because it has been a matter of some controversy just what control the commander of the Fifth Army Corps exercised over the battles of July 1st; the facts quoted above materially agree with the testimony of many other eye witnesses.

General Comments On the Campaign.

Colonel Wagner believes it was good tactics to combine a front and flank attack, and that if these attacks had been timed to occur simultaneously, the Spanish position would have been carried without serious loss. The great defect in carrying out the plan was *the lack of reconnaissance*, resulting in putting Kent's and Wheeler's divisions in a position where they were prematurely under both infantry and artil-

lery fire, while supposed to be awaiting the result of Lawton's attack on El Caney.

"It is a curious fact," says Colonel Wagner, "as illustrating the difference in the magnitude of the military operations in the two wars, that the loss of the Army of the Potomac at Fredericksburg was almost equal to the total strength of our army at San Juan–El Caney; and it is also worthy of note that the percentage of loss of the assailants in the Cuban battle was nearly as great as in the unskillful and desperate front attack made by Burnside nearly thirty years ago."

The author believes that Kent's and Wheeler's divisions should have been kept out of the battle until the result of Lawton's fight at El Caney was decided, even if that were not completed until July 2d. Lawton, he believes, would have been fairly safe from attack from the direction of Santiago, and if so threatened, it would have given opportunity for our divisions in reserve to strike the Spaniards in motion, instead of behind intrenchments. El Caney once taken, and Lawton on the Spanish left flank, the hostile trenches on San Juan and Kettle Hills would have soon been untenable. The Spaniards would undoubtedly have fallen back to their interior lines near the city, and a regular siege have ensued.

Smokeless Powder.—Colonel Wagner's observations led him to believe that the *morale* of the men was improved and not impaired by the use of smokeless powder; the absence of bewilderment and confusion caused by smoke more than compensating for the clearer view of the casualties of battle.

The Artillery.—"Much disappointment was felt throughout the army at the inefficiency of our artillery." It was insufficient in numbers, and it was handicapped by its black powder ammunition. Tactically, the artillery showed a disposition to fight at long range.

Cavalry.—It is doubtful if any other body of cavalry in the world could have performed the dismounted work that was so well carried through by the cavalry division in Cuba. "It is to be regretted that there was not in the army of invasion a greater number of mounted troops. * * * I have no hesitancy in saying from my own knowledge, that a force of cavalry used on reconnoitering duty would have been of inestimable value, and I am satisfied that if a single mounted troop had been with Lawton on the morning of the 23d of June, the campaign would have been opened with the capture of a Spanish battalion."

Infantry.—The experience of the campaign demonstrated the fact that it was unwise to have skeleton battalions in infantry regiments, unless such battalions are to be in excess of the actual fighting strength desired for war.

Tactically, the field exercises held at army posts for some years preceding the war, was in evidence in the adaptation of the tactics to the ground. In some cases the first battalion formed the firing line, the second battalion in reserve; in others, the whole line was deployed immediately. The squad system of leading was used by the Seventy first New York alone, and Colonel Wagner doubts the practical advantages of the squad system in moving into battle.

Ammunition.—The fire discipline of the regular regiments was excellent, in large part due to training in field exercises and to target practice. The total expenditure of ammunition on July 1st did not exceed one hundred rounds per man.

The solution of the question of supplying ammunition to the firing line, seems to have been found at Santiago in the words, "pack-mules and courage."

The Krag-Jorgensen rifle proved itself a thoroughly satisfactory weapon; the Springfield rifle, using black powder, was not only in itself an inferior weapon but resultantly ruinous to *morale*.

In general, Colonel Wagner thinks the troops should have carried intrenching tools; the uniforms worn by our troops were unsatisfactory; the efficiency of the pack-trains was a matter of general comment and invariable praise; there was a distressing lack of facilities for transporting the wounded to the rear, and the lack of anything like a systematic mail service was seriously felt.

Comparing the relative efficiency of the Line and Staff at Santiago, Colonel Wagner tells us frankly that the former was greatly superior to the latter.

"The Staff consisted of a heterogeneous aggregation of officers, some of whom had had experience in the regular staff departments in time of peace, many more who had been taken from the Line to perform duties to which they were not fully accustomed, and many others who had been commissioned from civil life outright, without any special training in their staff duties, and in some instances without any military knowledge whatever. I know personally of a number of cases where newly appointed staff officers, holding the rank of assistant adjutant general, inspector general, etc., were provided with assistants in the form of able lieutenants of the regular service, who instructed them in their duties, and performed the greater part of their work."

As to the enemy, the defense of the Spaniards was characterized by courage rather than by skill. They could have made a more stubborn rear-guard defense between Siboney and Santiago; and their small patrols could have caused great confusion at night, by energetic action. The Spanish trenches were of good profile, but were often mistakenly placed on the actual instead of the military crest of the slope.

Colonel Wagner's report makes interesting reading. His frank criticisms are the criticisms heard at the time from the lips of the men behind the guns, and in all essential particulars, are only too true. The Santiago campaign is not yet so far distant that we cannot take these mistakes to heart, and see that they do not occur again. The truth sometimes hurts, but its ultimate effect cannot but be beneficial.

The responsibility for seeing that these errors do not recur in our next over-sea expedition, rests primarily with our General Staff. The engossing duties of peace should not crowd to the wall the foremost reason for the establishment of a General Staff, which is preparation for war.

C. D. RHODES,
Captain, Sixth Cavalry.

Stuart's Cavalry in the Gettysburg Campaign.*

The historians of the Civil War have worked up quite a case against General J. E. B. Stuart and the Southern cavalry in the Gettysburg campaign. With much unanimity they have ascribed the Southern disaster to faulty use of cavalry, because Stuart disobeyed his orders by proceeding on a raid in rear of the Federal army, and because he was absent until after the battle began, and did not keep General Lee informed as to the position of the Federal army. This view has received powerful support from the official reports and from the writings of various prominent officers on the Confederate side

On the first point, the evidence is to be found in General Lee's two reports, dated July 31, 1863, and January, 1864, and in the letters of Lee and Longstreet, dated June 22 and 23, 1863. From a comparison of these data some curious facts appear. First, that the report of July 31st does not correctly give the orders or the movements of Stuart. On June 23d, Lee at Berryville ordered Stuart to leave two brigades of cavalry with Longstreet in Virginia, and to join Ewell on the Susquehanna with three brigades. This order was sent to Stuart through Longstreet, who, in forwarding it, directed Stuart to take the very route he did take, and to cross the Potomac in rear of the enemy. Another letter informed Ewell that Stuart was to join him, and the order plainly required Stuart to move in advance of the two armies. But General Lee reported that: "General Stuart was left to guard the passes of the mountains, and observe the movements of the enemy, whom he was instructed to harass and impede as much as possible should he attempt to cross the Potomac. In that event, General Stuart was directed to move into Maryland, crossing the Potomac east or west of the Blue Ridge, as in his judgment should be best, and take position on the right of our column as it advanced." Further, the report says: "General Stuart continued to follow the movements of the Federal army south of the Potomac,

*"STUART'S CAVALRY IN THE GETTYSBURG CAMPAIGN." By John Mosby. Moffatt, Yard & Co., New York. 1908. Price, $2.00.

after our own had entered Maryland." It is not necessary to comment on the historical accuracy of these statements, or to attempt to reconcile them with Stuart's orders. The report of January, 1864, partially corrects the first, but makes a number of inconsistent statements. It speaks of Stuart being directed to place himself on the right of Ewell; and a little further it says that Stuart was instructed to lose no time in placing his command on the right of the main column as soon as the enemy moved northward. It speaks of the damage to be done by Stuart in rear of the enemy, and says that he was expected to report the enemy's movements as soon as they crossed the Potomac. The plain meaning of this is that Stuart was supposed to be in two places many miles apart, at the same time, and that he was expected to communicate with Lee when the Federal army was in the way.

In both reports it is stated that it was impossible to ascertain the intentions of the enemy on account of the absence of the cavalry, and we are led to infer that the battle of Gettysburg was brought on and resulted from that ignorance.

So far as Stuart himself was concerned, the answer is to be found in the orders which he obeyed. There were, however, two brigades left behind by Stuart with orders to follow the Confederate army on its right and rear. Why these brigades were absent at Gettysburg, why they remained in the passes of the Blue Ridge after Hooker's army had left their front, why the passes north of the Potomac were left unguarded while those south of the river were guarded, are questions which have never been satisfactorily explained. In view of Stuart's explicit instructions that they should follow the movement, we may perhaps agree with the author that the responsibility lies with some high commander who retained them south of the Potomac.

In further support of the complaint about the cavalry, the reports say that preparations were made to advance on Harrisburg, but that on the night of the 28th, a scout brought the first information as to Hooker's crossing the river. Lee's letter book, however, shows that Ewell was ordered to turn back before the 28th, that Lee knew of Hooker crossing on the 27th, and Colonel Mosby proves that the scout incident

probably did not occur at the time and place stated. The story of the scout is always given in connection with criticism of Stuart, but as Lee certainly knew of Hooker's movements on the 27th, it is no longer of importance.

What information Lee had between June 24th, when Hooker put his army in movement, and the 27th, when Ewell was ordered to return, we cannot say. It is not reasonable to suppose that Hooker withdrew his army from Lee's front and marched on a parallel route a few miles away, and that Lee should have been in complete ignorance of it all. When Lee was at Hagerstown he was not more than nine miles from the Federal corps at Boonsboro.

In order to fix responsibility upon the cavalry it seems to be necessary to believe that Lee ordered the march on Gettysburg. It was so stated in the report of July 31st, but not in the later report. If he ordered a march on Gettysburg he was deprived of his cavalry in an important movement, so it seems to be argued. But if Lee ordered a march from Chambersburg on Gettysburg, he would have been marching more than 50,000 men on a single road against an enemy when several roads were available. General Lee's generalship does not deserve such an imputation. As a matter of fact General Lee did not order the advance on Gettysburg until after the battle had begun, and this fully accounts for the loose way in which his concentration was made.

The battle of Gettysburg seems to have begun by the common error of converting a reconnaissance into a battle. The officers responsible were A. P. Hill and Heth. They began the battle without orders, and after they were deeply engaged Lee supported them with the entire army. This tendency of A. P. Hill to rush into a fight without proper reconnaissance was common with him, and occurred also at Mechanicsville and at Bristoe Station where it failed, and at Antietam where it won. General Lee seldom commented adversely on an officer. None of his most trusted subordinates were free from fault at one time or another, as we see it now. His greatness of heart is shown nowhere so prominently as in his treatment of Jackson in the Seven Days, of

Longstreet and Ewell at Gettysburg, and of Hill on the occasion mentioned. This makes it all the more remarkable that he should have departed from his rule and not only blamed Stuart, but that he did so by such partial and inaccurate statements of fact. The only possible explanation is that suggested by Colonel Mosby, that Lee did not read the reports that he signed.

From time to time it is necessary to revise history and to prove that many accepted ideas are without foundation. Since the Civil War much of this has been done, but seldom do we find a single book in which so many accepted statements are exploded. Much of this new matter is due to careful examination of General Lee's private letter book, the story of which, as told by Colonel Mosby, is interesting. At present it looks as if the history of the battle of Gettysburg would have to be rewritten. EBEN SWIFT.

The Leipzig Campaign.* The author may be said to have had a life-long acquaintance with the events of this campaign. His early years were spent in Germany in districts which had been repeatedly overrun by the French armies, and at a time when he had the opportunity to learn from the lips of numerous survivors something of the inner history of the struggle for German independence. But while this early familiarity with its conditions has enabled him to give color and life to his narrative, it has also, unfortunately from a military standpoint, drawn him into a discussion of numerous political and diplomatic questions which have entailed the omission of many details of the campaign of vital interest to the military student. This is always a serious temptation to the writer of military history; to digress in descriptions of attendent circumstances and allow a few strategic generalizations to pass for the military features instead of marshaling the facts and allowing them to point their own moral.

*"THE LEIPZIG CAMPAIGN—1813." By Colonel F. N. Maude (Late R. E.). No. 7. of the Special Campaign Series. The Macmillan Company, New York. 1908. Price 5 shillings.

A slight bias is also suggested in some passages which may come either from the writer's early sympathies or from a too close reliance upon such writers on this campaign as Holleben and Friedrich. The Prussian is an excellent critical historian of other people's wars, but when his own are in question, loyalty to his army, his people, and his reigning house, appears either to blind him to certain classes of fact or to prevent his speaking the whole truth.

In regard to Napoleon and his mastery of the art of war, the author takes the view that his success was due rather to the intuition of genius than to the results of intellectual study, and that Napoleon himself "never intellectually realized the secrets of his own success," and in consequence, when he was thrown by force of circumstances on the defensive, "his inspiration did not suffice to show him the best way in which to avail himself of the chance given him" by his opponents. This view is difficult to reconcile with the facts in other Napoleonic campaigns.

In spite of these defects, however, the book deserves a cordial reception. It is well arranged; its narrative is clear and sequential, and the ten accompanying maps make it easy to follow the course of the campaign. Taking it all in all it is undoubtedly the best history of "1813" yet published in English. A. L. C.

Military Maps Explained.* The first question that occurs to one on taking up a new book which purports to instruct rather than to amuse is: What need is there for this? Does it fill some recognized gap in our scheme of knowledge, or extend and bring up to date something about which ideas have changed? Or does it, while not presenting anything new, so present old matter as to make it clearer and better available for the student's use? Measured by either test, there is no doubt that the publica-

*"MILITARY MAPS EXPLAINED." By Captain H. E. Eames, Tenth U. S. Infantry, Instructor Department of Engineering at the Army School of the Line, Army Staff College and Army Signal School, Fort Leavenworth, Kansas. Franklin Hudson Publishing Co., Kansas City, Mo. Price, $1.00 postpaid.

tion of the author's valuable little book is justified. The modern development in the art of map making and the multiplication of maps, together with the absolute necessity for their continual use, not as an auxiliary, but as a main reliance in preparing the widely extended dispositions necessary in these days, makes it essential that an officer should be able to read his map as easily as he reads its printed legends. The author says:

"It is, therefore, necessary for all officers to possess a knowledge of map reading; and by this is meant, not an ability laboriously to dig out the meaning of the map, but an ability quickly to grasp the features of the ground from a contoured map. It is not sufficient that the officer should be able to follow a road from the map, or to determine distances; he must also know what the slopes are, the steepness of grades of the roads, the relative heights of hills, etc.; in a word, he must be able to form a perfect mental picture of the ground, and group its features as though he were actually on the ground itself."

He then shows how this facility is to be acquired by taking up the subject under six heads, which will be discussed seriatim.

Conventional Signs.—Two pages are devoted to illustrations of some of the more conventional signs, and comparisons are made with the corresponding French and German signs, with explanatory notes and an illustration of a slope as depicted by contours and by hachures. Appendix I gives a very useful table of names and abbreviations found on German maps, with their French and English equivalents.

The Scale of the Map.—Having acquired the ability to recognize conventional signs, the next essential element of map reading is stated to be the ability to appreciate distances on the map—to grasp the scale. The word appreciate conveys just the idea the author has, which is that the skilled map reader should, by practice, have acquired the ability to measure map distances by eye within a small limit of error. After defining a scale and clearly explaining the preliminary calculations, he shows how the graphical scale is constructed to read familiar units, to make graphical time scales, etc., and

illustrates the use of the dividers and curvimeter in scaling map distances.

The Determination of Directions.—The author may, on occasions, have spoken disrespectfully of the equator, but he gives the true and magnetic meridians their full due. The cardinal points of the compass are explained, as well as the graduation into degrees, and stress is laid on the value of learning to estimate direction as well as distance.

Contouring.—The definition of a contour is illustrated by a drawing of a vertical cut along a canal, the strata all of uniform thickness. The projection on the plot of the stakes marking the limits of each strata are points of their respective contours, and other sections give other points, from which the contour line on the map is determined. Then the relation which exists between steep or gentle slopes and the distances between contours representing these slopes is examined, and the principle deduced which enables one to know at a glance from the map where the slope is steep and where gentle, and where it changes. The discussion is carried further, and by a simple application of mathematical principles, three methods are deduced by which the actual slope in degrees can be read from the map. The author might, perhaps, better have laid more emphasis than he did on the third method, the use of the graphical scale of map distances, for this is easily constructed by the method he gives, and is, in a practical sense, the only method that would be used. Gradients are defined and explained, and among others of their uses, that in determining the degree of slope is described. Table I shows the influence of slope on movements of troops and vehicles.

Visibility.—"Of all the problems which arise in map reading, probably none are so frequent as questions involving visibility. 'Can the bridge at A be seen from the hill at B?'" The author first shows that visibility depends on the general convexity or concavity of the surface, then analyzes the graphical method of determining visibility of one point from another, and also where the line of sight pierces the ground. He follows this with two shorter methods by calculation. A variation of the above problem, to determine how far above

or below a particular point the line of sight passes, is explained, and is also the determination of the area visible from a given point. The author regards this subject of visibility as of prime importance, and gives no fewer than twenty-four pages of examples, each carefully worked out on the Fort Leavenworth map. A study of these examples, using the principles and methods given, should give the student a thorough understanding of visibility problems. In this chapter is a short description of the proper method to picture troops on the map.

Map Reading in the Field.—The final chapter covers the subjects of orienting the map and identifying one's place and closes with some valuable practical hints. There are also forty additional problems covering all the subjects in the text. Several extra maps are included with the book to be used in practice and so avoid defacing the reference map.

It is to be hoped that in subsequent editions, which will undoubtedly be called for, the typographical errors now existing may be corrected. It would make for verisimilitude if the sand strata in Plate 6 were made to form a more natural slope.

This book is timely and valuable. It covers, clearly and concisely, a subject that has not received the attention in our service that it deserves. G. E. S.

Making a Soldier.*

This book comprises seventy pages of discussion and recommendation, covering pretty thoroughly the elementary instruction of the National Guard soldier. It is more an enunciation of principles than a detailed scheme of instruction, and the author has endeavored to fix these principles in the mind by incorporating a system of questions and answers on the text. Discipline, drill, health, habits and records are covered, and the author takes the sound view that the beginning and end of efficiency in each of these is discipline. A number of

*"MAKING A SOLDIER." By Lieutenant Colonel A. C. Sharpe, U. S. Army. The Acme Publishing Company, Cleveland, Ohio. 1908. Price 75 cents.

practical suggestions of value appear under each of the above heads, and the chapter on the soldier's health makes plain to the company commander that his responsibility for his men's physical well-being is even greater than that of the surgeon. This book should take respectable rank among the other manuals of the same type intended for the National Guard. G. E. S.

Hints on Horses.*

This is a small but interesting volume of one hundred pages, covering in condensed form the principal points regarding the care, treatment, purchase, etc., of horses. Throughout the work reference is made to the service of the horse in tropical as well as in temperate climates, and to one who has not had previous experience in hot climates, this book will prove especially interesting and instructive. R. D. W.

Guide to Army Signaling.†

This is another of the numerous shilling hand books from the press of Gale & Polden, which is intended to prepare "Regimental Signalers" in the British army for the annual inspections, at which time their proficiency in these duties are tested. It is in catechismal form and divided into the following sub-heads: Flags, heliograph, lime light, Begbie lamp, telescopes, signal stations, message forms, counting and entering words, station work, naval and military inter-communications, signaling in the field, lines of stations, the prismatic compass and map reading.

E. B. F.

*"HINTS ON HORSES." By Major H. P. Young, late Fourth Bombay Cavalry. Gale & Polden, No. 2 Amen Corner, Paternoster Row, London. Price, 1 s. net.

†"GUIDE TO ARMY SIGNALING, INCLUDING THE PRISMATIC COMPASS AND MAP READING." By Ronald L. Q. Henriques, the Queen's Regiment. Gale & Polden, Ltd., London. Price, one shilling.

The Sword and How to Use It.* This book of seventy-three pages is a practical treatise on the use of the sword or saber by the instructor in swordsmanship at Aldershot. That the author is a master of the art is shown by the fact that he is the champion swordsman of the British army and navy for the years 1906–7–8.

To the very few in our army who still believe in and practice fencing as a grand bodily exercise that cultivates activity and promotes physical development, this work will be of interest and value.

It is well printed on good paper, in clear, large type, and the illustrations are first-class. E. B. F.

The Guardsman's Handbook.† In none of the numerous handbooks for the National Guard that we have seen is there so much of practical importance to the enlisted man of the National Guard as can be found in this little work of thirty-one pages. As is stated in the preface, it is not intended as a technical treatise for the officer, but a simple compilation of the more important points that should be first taught to the recruit.

It is divided into the following heads: A talk with the enlisted man; military courtesy; honors to the colors, etc.; military appearance; and sentry duty. In the first, is fully explained the present status of the National Guard under recent legislation, and much good advice is given that every member of the National Guard should take to heart. The other subdivisions cover the subjects in clear, concise, and simple language. E. B. F.

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*"The Sword and How to Use It." By Lieutenant J. Betts, Master-at-Arms, Army Gymnastic Staff, Aldershot. Gale & Polden, Ltd., No. 2 Amen Corner, Paternoster Row, London, E. C. 1908. Price 2s. net.

†"The Guardsman's Handbook." By Lieutenant Richard Stockton, Jr., late of the Third Infantry, National Guard of New Jersey. Battey & Webb, 1490 Rokeby Street, Chicago. 1908. Price 25 cents. Special prices if ordered in lots of fifty or more.