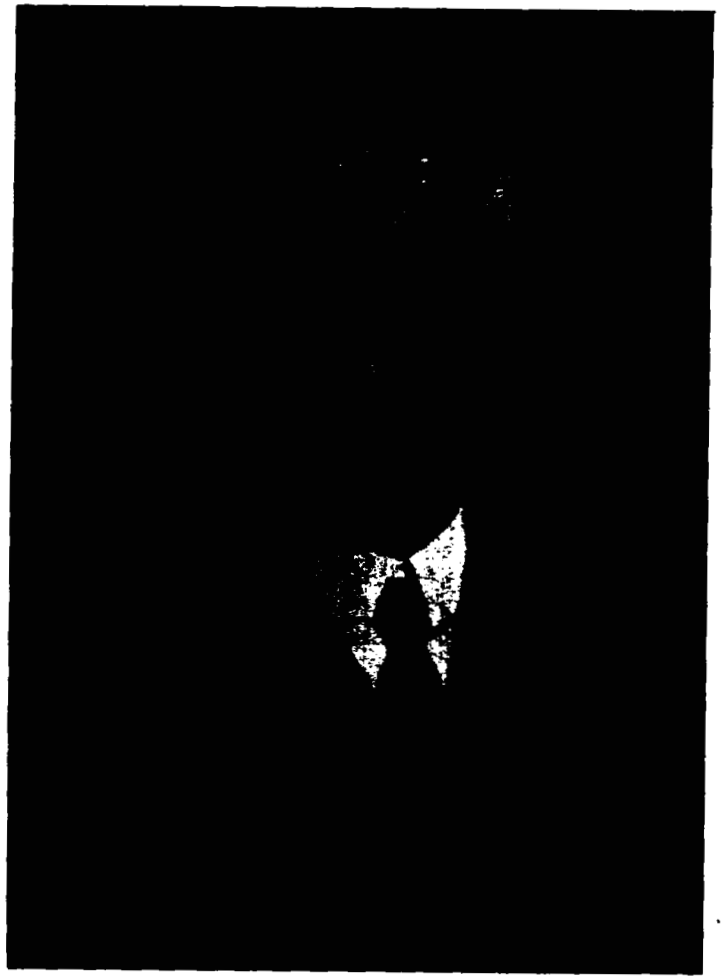

Robert Shaw Oliver

ASSISTANT SECRETARY OF WAR.

Robert Lawton

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PEACE TRAINING OF OFFICERS.

[illegible]

BY MAJ. EBEN SWIFT, [illegible]

THIS day is a notable one in the history of Fort Leavenworth. From humble beginnings some twenty-three years ago, the school has passed through many changes, generally for the better, until now we have a class which comes from nearly every corps and regiment, each member bearing the certificate of his commanding officer that the best man is sent. The Staff Class also have won their places by the hardest kind of competition. To belong to such a representative body is a high honor. The best work, the greatest zeal and the most conscientious performance of duty are assured from the first. At last the old kindergarten has disappeared and in its place a military university has risen. For such an institution a great future should be assured, making use of the best experience of others, and not forgetting what we have ourselves learned.

This is an appropriate occasion to outline something of the course in the military art, explain the aids upon which

we will rely and point out the great objective which we wish to attain. So much of the methods are new, so flexible are our rules, and so broad is all military doctrine, that these matters must be approached with unusual care.

The idea of turning out trained soldiers from a university is, I know, ridiculed by many, who fail to see the analogy between other professions and our own. No one refuses to recognize the graduates of the schools of medicine, electricity, law, engineering and others, as competent in their professions, but it is natural to ask the question, "How can soldiers obtain the necessary practice in their profession, which in all peaceful arts is so easy to secure?" Inability to solve this question as wars became rare, caused the military art to fall behind other arts and led to some of the greatest failures in history. It was maintained that the theory alone could be learned in time of peace, so that when war actually did occur the armies found themselves overwhelmed with knowledge that was fine in peace but useless in war.

The Germans had their attention directed to this matter by their own misfortunes, and decided that if a school of war were not possible the next best thing was to make their peace training come as closely as practicable to the actual condition of war. Under the guidance of the greatest of modern generals, who in the years preceding his great successes was commonly called the "Schoolmaster," new methods of giving the practice were introduced in the schools and the army. Then after three successful wars in six years the old fallacy that "war alone teaches war" was dispelled. The chasm between practice and theory was bridged at last—an undertaking which was long supposed to be impossible in our profession, although easy in others. It cannot be said, however, that the world ceased to view the university soldier with surprise and suspicion. It is a part of the slow development of a great idea. From the club of primeval man to the magazine rifle of to-day the changes have not been rapid. The idea of a flank attack was as slow to dawn upon the human mind as the forging of metals was to be comprehended by the artisans. The art of issuing a field order to a large command

came more slowly than the steam engine and almost as late as the telephone.

The practical test of the new method wrought the third revolution in the art of war in one hundred years. Frederick the Great had inherited a ready-made army. It had been trained in time of peace to a high degree of proficiency without especial reference to its usefulness in war, but he found at once that he could march all round his enemies and strike where he pleased. His victories quickly proved him to be the greatest soldier of his time, and his army became the accepted model for the world. Military men of every nation made pilgrimages to his maneuver grounds at Potsdam, Spandau and Berlin, and sought eagerly for the slightest bit of information about his methods. A system of parade ground maneuvers, which leaves out of question the terrain, cannot fail to strike us as strange at this day. Frederick had only been dead twenty years, and his army still contained some of his best soldiers, when the Corsican captured his capital. A new master had come who knew the relation between the ground and the battle, a matter which had been ignored until then. This single idea developed by a man of wonderful mental and physical capacity placed the French nation at the front of the world. Then we began to follow blindly the ways of the French soldiers, adopted their words into our military vocabulary, and for fifty years studied Napoleon Bonaparte. Since the battles of Metz and Sedan we have turned again to the Prussians.

Our own military history, great as it has been, does not encourage us to ignore these lessons taught by foreigners.

A certain regiment on our frontier in the spring of 1861 contained about thirty-five officers. It was a good regiment and had been officered with great care. In a rather small way its experience had been great, for it had much active work chasing Indians over a great expanse of country. Within a few months, at least half of the officers of that regiment were generals of the line, and four of them were soon at the head of great armies. When it came to applying their previous knowledge to greater questions than came up at a frontier post or on an Indian scout, they found themselves

without experience, instruction or precedent. It was a year and a half before the troops which they organized and commanded were capable of really good work, notwithstanding all the aid that money, patriotism and ability could bring to help. At the present day the country will expect quicker work than that. It is absolutely necessary, now that modern methods are beginning to be developed all around us in the world, and when readiness for war is the first requisite of a great State.

Do not understand that I am holding before you the glittering prospects of rank that came to those officers in 1861. Such an occasion is not likely to occur again, and, in fact, it is a part of our work to make it still more remote. But in any emergency requiring a great army, a large number of staff officers of the rank and age of this very audience, would be required for all commands. The last hundred years have given such cases as a Gneisenau for a Blucher, a Moltke for a king, a Blumenthal for a prince, and, to take a better example from our republican form of government, a Koerner for a political chieftain. How much we ourselves owe to Von Steuben we will probably never tell. These are the kinds of places which Fort Leavenworth graduates will be called to fill.

As I have intimated, the early experience in the Civil War was a painful one. The first battles excited the risibilities of the world, and are said to have brought from the greatest soldier of the age the cynical remark, that he was not paying attention to the war in America, because he was not interested in the maneuvers of an armed mob. Whether true or not, that statement well expresses the common idea then held of our military efforts—an idea that was not dispelled for years. The sad experience of the first Bull Run was not improved nearly a year later when the battle of Shiloh showed every fault of raw troops, notwithstanding all the efforts at drill and discipline which had been applied by the best soldiers we had. Without entering into the disputed points concerning Shiloh, we cannot fail to agree on the facts, that one army passed several days forming line of battle within sight of the opposing camp, that a commanding general was not able to

bring up a command six miles away, and that at the close of a day of battle only about ten thousand out of more than eighty thousand who started in, were on the line of battle. The Army of the Potomac passed under the command of its fourth commander before the purposes, uses and organization of cavalry received attention. Artillery was not in a better condition. Such things appear strange to amateurs as well as to professional soldiers. But it is also strange that the magnificent Roman armies should have been fooled and ruined by the simple stratagems of Hannibal, or that the Grecian generals should have been confounded by the newness of the idea of a flank attack. A new idea in war is as slow to arrive as any other momentous event in the history of mankind.

Not the least of our sad experiences during the Civil War was the fact, that many excellent officers were ruined before they had a fair chance to learn, while others whose mistakes were just as great were permitted to go on and learn. The point of greatest importance for us to consider is the fact, that ALL had to learn. No man ever jumped into the field of battle, fully armed and equipped, like the dragon's brood in the fable.

Time went on, and at the end of four years our armies were equal to any that history knows of. In maneuvering and in marching, the leaders and the troops were unsurpassed. In the tables of losses we find a record that will not soon be equaled, if we are to regard the South African and Manchurian campaigns as evidences of the tendencies of modern war. It was an army formed in the school of experience, such as Napoleon found in his hand at the end of the wars of the French Revolution, and with which he was able to fight Europe for twenty years. It was such an army as a Hannibal or an Alexander inherited from his father. Such armies of course are perfect in their way. The process by which they learned may not be improved upon. If war were the common state of mankind, we might continue to rely upon the same school and to believe that no other would suit.

The adoption of a suitable system of peace training did not come quickly. It was years before it was evolved, and it

was the result of many independent lines of thought. Some ideas ran into extremes as in Kriegsspiel, for instance. It was long before it was possible to harmonize them all into a consistent system in which each had its place. The term "deductive system" or "applicatory system," best describes the whole. It had its inception in the necessity for supplying troops in time of peace with more of the experience and training which they get in actual war. After learning the theory, it was thought best to apply it to various concrete cases, which were made as practical and real as possible. Tactical schemes were worked out, based on probable and real military situations. The principle and the application were given at the same time, and thus both were firmly fixed in the mind.

In working out this idea it soon became apparent that the new system possessed some decided advantages, which might even be claimed as affording better instruction than the old school of experience in actual war. In peace we can learn one element of one problem at a time, turning from one to the other in order. In war the ground, the troops, your own decisions, the orders of your superiors, the killed, the wounded, are crowded upon you at once with a thousand variations. It is like taking the university course without having studied the primer. The greatest difficulty in peace training is in the length of time it takes to acquire knowledge in this way. The variety of situations is so infinite that no ordinary school course could do more than indicate the general object and character of this kind of study. We may only begin by producing a small variety of situations, presented and applied in such a way as to make the lesson like real experience. To form the "military eye," as it were, to develop a proper habit of thought and action, and to render decisions quickly and accurately, we must rely on practice and intelligence before the highest result will be reached. In the same way that the habit of the drill ground is carried into battle by well disciplined troops, we hope to see the maneuvering habit burned into the soul of every man who is called to command.

The applicatory system has its value for troops, but its

value for those who exercise the higher duties of command is greater. Here it is possible to reproduce in the section room almost exactly the conditions of a real campaign. In fact, we can take an example from history and work it out from our own point of view, aided by the light of experience and criticism. We shall lack the sense of responsibility, the excitement and the physical strain. We gain by being able to submit our decisions to the test of criticism and study. In the real campaign we have not the time to digest our experience. In the imaginary campaign we exclude every matter that would tend to divert the untrained mind from the particular subject in hand.

The results of the new methods are startling indeed. We might expect nothing but success from a nation which for centuries had bound her best and brightest men to the trade of war. But when the Chilians, the Turks and the Japanese, adopting these ideas under good instructors, astonish us by their military proficiency, obtained in a marvelously short period of time, we must seek for the cause in the correctness of their system of training. We must realize that wars are to be conducted by peace-trained soldiers, led by peace-trained generals, who are assisted by a peace-trained staff. Under this careful system we must learn how to develop safe leaders for our troops. Brilliancy of the old kind has little of its old chance in these days of intrenchments and long-range artillery. Promotion is slow and men do not reach high position in youth, but veterans of forty years of peace service will take the field with all the confidence of men who have fought in a hundred battles. This has been done often within the last forty years. It is the modern development of war. Perhaps under the new tests we may reverse the old maxim, that "In our profession the fittest do not survive."

The field maneuvers represent the supreme effort in time of peace to show an army ready for war. They form the graduating thesis of the applicatory system of instruction. In them the troops as well as the leaders show all they know about their profession. But as field maneuvers are merely a necessary preliminary to real war, so must they also be pre-

ceded by a careful course of elementary training. Without it the maneuvers would be as unsatisfactory as war itself without preparation. The leaders would show vacillation and indecision in every form. The troops would be placed in false and unreal positions, which they would be quick to discover but unable to remedy for themselves. The whole would lose the character of a military exercise and degenerate into an old time "sham fight" or "militia muster." To teach a man to swim let us not throw him into deep water before he can paddle a bit in the shallows.

Taking account only of the duties of officers, we may divide them into two classes—those conducted indoors and those conducted in the open. In the first class are map problems and map maneuvers; in the second class are staff rides or terrain exercises and maneuvers. I will discuss them in the order named.

Officers joining with nearly four years of service may of course be presumed to be familiar with the drill book, the regulations, and the ordinary field service of troops.

Starting out on the broad principle that education consists in thoroughly learning one thing at a time, we place map problems at the head of the practical course. The map problem is simply a problem, admitting of a written answer, solved by the aid of a map. The questions are such as require a study of the map, and, under the usual conditions of service, would be solved by the commanding officer and his staff. It is natural that the map should call for our first attention because we ordinarily see it before we have a chance to examine the ground which it represents. An early experience is thus obtained of the difficulties which are encountered at the beginning of every military operation. It is better than the corresponding experience in active service, because you have nothing to divert you, plenty of time to make up your mind, and full opportunity to discuss and criticise. It is supposed that training of this kind develops the judgment in such a way as to lead to prompt and rapid decisions. The mind is led into the same channels it would follow in active service; you study long over some order that would perhaps be given verbally and

without preparation, and when the day of action comes, men will say that you are filled with quick and happy inspirations in the field. A great soldier has left on record the statement, that it was not genius that revealed to him the sudden and unerring solutions of military problems that often astonished the world—it was long study. "I brood upon the map," he said. The study of the map, then, helps us to give the proper direction of events, and to formulate definite plans of action. In other words, it is a study of orders.

We will have a large number of map problems with solved solutions: after that there will be problems for original discussion and solution. At the completion of this you will be able to solve most of the ordinary situations and issue proper orders to meet them.

One step further than the map problem is the map maneuver, or the Kriegsspiel of the Germans. It is simply an exercise where we show the operations of war by the movement of small blocks, representing troops, over the surface of a map. It supplies an idea of the moving incidents of the campaign and those matters which depend upon the factors of time and space, and the various relations between the troops and the ground, such as the ployment and deployment of lines and columns, rates of march, the capacities of defensive and offensive positions to commands of a certain size. Having, therefore, filled the mind with some military situation: having formed your plan and issued your orders, and made your dispositions, the whole may be tested by map maneuvers.

The original idea of the Kriegsspiel and, in fact, the leading idea of every practice of this kind, up to a recent date, was to make it a "battle exercise," in which decisions were given as to the actual loss in killed and wounded, the effect of fatigue and demoralization, and the influence of chance on the final result: in fact, all modifying factors that could be thought of were duly considered. It made an exceedingly complicated system, requiring much study and practice. Its many difficulties limited its use to a few localities where there were exceptional advantages in its favor. Recent improvements in weapons of war and important

changes in methods of attack and defense have caused doubt to be felt as to the accuracy of former rules under the latest conditions, and gradually the battle idea has become eliminated from the exercise. This simplifies it greatly and leads to its logical use as an aid to instruction. We will use it as an exercise simply in maneuvering troops up to the moment of actual contact. Prior to this the small combats of minor importance are settled in a general way by the decision of the umpire. As soon as the plans of both sides are developed and there only remains the final test of battle to decide the result, the screen is removed and the umpire discusses the final situation.

A full discussion of the so-called war-game had better be reserved for another occasion. At present it is sufficient to say that this kind of instruction is officially recognized in most military countries. In many of them it is an obligatory part of the military education of officers, and in its simpler forms it is used for the indoor instruction of non-commissioned officers and men. These things therefore are claimed for the maneuver on the map:

1. It supplements previous exercises by practice in map reading.

2. It has the advantage of presenting the whole situation and not a limited portion of it to the view.

3. It gives practice in issuing, interpreting and executing orders.

4. It gives practice in showing the principles and application of strategy and tactics. In the same way it is a useful adjunct to the study of military history.

5. It gives practice in making quick and accurate decisions. In the application of principles it shows in a few hours operations that would ordinarily consume many days.

The next form of exercise has been called war ride, staff ride, terrain exercise, and so on. The troops are still imaginary, but the map is replaced by the real ground. The officers work out their problems in the open. In this way they come to understand the relations between the ground and the map, they see the limitations that exist in the picture of ground given by the very best map, and they verify

the principle, that while general directions are given from the map, the details must be left to the commander on the ground. The troops remain imaginary, because the idea is still to develop and persistently to cultivate a perception of the capabilities of the ground itself, a quality which is all important and exceedingly rare. It means an ability to grasp the military features of a landscape, just by looking at it, to conceal your own designs and to discover those of the enemy from slight indications, to make proper dispositions for every emergency, to select an objective and not to lose it. It is evident that the presence of the troops would tend to divert the attention, and that the tendency would be to devote one's self to the personal direction of the troops. There are good reasons why troops need not be present in preliminary exercises of this kind.

The exercise may be conducted under a dozen or more forms. In all of them the object is to visit some piece of country where the various conditions of military study are imagined just as if the landscape were full of troops. For instance a detail of officers could ride out and select ground for future battles in the neighborhood, just as German staff officers are said to have done in France before the War of of 1870, and just as we know that the Confederate General Johnston did before he retreated on Atlanta in 1864. On a smaller scale we might indicate how we would defend a village, attack a wood, cross a river, ascend a height, or search a country for another force.

Next come maneuvers, in which the officers assume command of troops in the open. Here again we proceed ordinarily through several stages of instruction and practice. At first the enemy need not be indicated, or he may only be outlined by flags and a few men representing larger bodies of troops. Now for the first time you have to consider the powers of the troops to undergo exertion. The practical application of this is that the energy of troops can be reduced more by fatigue than by the fire of the enemy. Where we lose one man by a bullet, we shall lose three or four from fatigue or other disorganizing causes.

Finally opposing forces are introduced, the fire is represented by blank cartridges, and we endeavor to represent the conditions of hostile contact. The guiding principle for officers will be that tactical skill in officers of low rank will be necessary to success. By tactical skill is meant the ability to judge correctly and to maneuver properly over varied ground. An easy self-confidence and a readier assumption of the leadership of men in trying situations will replace the hesitation, contradictory orders and delays of the man who has never tried his powers before.

So far we have considered only the value of experience gathered by each man for himself and by himself. There is still another kind of experience which we should learn to use, and that is the experience of others. The causes of the triumphs and disasters of the past form a class of study which will best lead us to an appreciation of the meaning of strategy. In former times these subjects were made the bases of elaborate treatises, logically arranged, with principles boldly stated and examples cited to fit each case. The fault of such a system is in the fact, that this strategy is often an afterthought of the ingenious commentator who quotes the case, and that historical incidents can generally be found to illustrate almost any kind of a principle. The old idea of teaching the art of war as a doctrine is now changed. The higher theory as taught by the books is put aside, and we study the campaigns first and pick out the strategy afterwards, thus reversing the former method. Here, then, we have another brilliant example of the study of principles by their application. "Study attentively," says Napoleon, "the campaigns of the great masters." That wise advice was not understood for a long time. It was his own practice, as we now know, but the added importance of the study of military history in the curriculum of the war college is a recent idea.

Here, then, are the general principles upon which we expect to lead to an appreciation and knowledge of the higher duties of commanding men, a knowledge which at the least will fit you to act as staff officers and to aid in carrying out the will of a commanding general. Lack of time will prevent the full development of the course for both classes,* as

this school has not yet reached the point where all preliminary study has been had in the garrison school; but this plan will be consistently followed as far as possible.

It would be easy to adopt a course of study, filled with the military pedantry of our own and other ages, and this is a common error with those who attempt military study. Likewise, as all arts and sciences are brought to assist in modern warfare, we might supplement our previous studies by technical work, which would undoubtedly be of use. But none of this would fill the greatest void in our education, and practice us in the hardest duties of our office, or prepare us for the exercise of our wisest and soundest judgment. Military study must include not only the direction of troops as fighting bodies, but all the arrangements concerning their marching, rest and safety, their organization, equipment and supply. It involves the translation of these ideas into proper orders, it covers the collection and record of all operations. Not the least of its objects is the preparation of problems, the conduct of field maneuvers, and the duties of umpires. Our goal is the leading of troops; our ambition is to learn the art of commanding men.

The wars of our day have changed in character. No longer waged in the name of religion or to satisfy the jealousies of reigning houses, they now result from great national movements, aims and ambitions. The consolidation of nations on racial lines makes greater the national interests involved, and probably adds to the bitterness of war. The advance of civilization may not be an unmixed blessing to humanity. It makes new conditions necessary to national existence. Such are a market for surplus products, work for all workers, room for the overflow of population. In meeting these conditions, diverse interests will clash and war will result, with ever increasing skill and ever growing armies and navies. Whether the wars for the rights of colonization and trade will reach us in our day, is hard to say. We may be sure, however, that greater efforts than ever before will be made to attain the ends of war, and that the problems of military men will be correspondingly great.

*The Staff Class and the Class of the Infantry and Cavalry School.

SHALL SUBORDINATE OFFICERS LEARN THE BUSINESS OF GENERALS?

To the Editor of the Cavalry Journal:

IN the *Army and Navy Journal* of February the 20th appeared an article by Major Bingham of the Corps of Engineers, criticising the tendency in our service to teach a general's business to officers of subordinate rank. Among some old papers pertaining to the Lyceum conducted at this post in the winter of 1897–98, have been found the following documents, which are self explanatory and so peculiarly applicable to the discussion inaugurated by General Bingham that I send you a copy for publication in the JOURNAL:

"POST LYCEUM,
"FORT APACHE, ARIZONA, Jan. 3, 1898.

"MEMORANDUM:

"At the meeting of the Lyceum last week I submitted for discussion at this session a proposition to adopt certain problems for solution as a part of the Lyceum course. Two of these were on Indian and four on civilized warfare.

"During the past week the proposed problems on civilized warfare have been criticised upon the ground that they deal with subjects with which persons of our rank are little concerned. That ancient and respectable (?) dictum, that we should content ourselves with studying our own duties (presumably on the parade ground) and not aspire to a knowledge of the business of a general officer, has been cited as a squelcher to this proposition. It is a pity that in this day of reviving interest and enthusiasm in acquiring a practical knowledge of a soldier's actual every-day duty in time of war, this illogical bugaboo and stumbling-block to progress cannot receive a decent burial. It has long been a corpse, after a harmful and unjustifiable existence.

"I presume it will not here be thought impertinent seriously to consider whether the study of strategy is not studying a general's business; and whether a general should wait

until he becomes a general before undertaking to learn his business. History is crowded with instances where, upon the outbreak of hostilities (and war generally arises unexpectedly), the mantle of general officers has immediately fallen on colonels and lieutenant-colonels. The history of our Civil War furnishes instances where this mantle fell upon many officers who were captains, several who were lieutenants (but lately cadets), and at least two who were doctors when the war began. Such responsibilities, devolving upon them in a totally unforeseen manner, found them none too familiar with the nature of their obligations.

"But, ignoring entirely the exceedingly remote possibility that any of us will ever be struck by such lightning, let us assume (what is not true) that it is a general's business alone which these problems are calculated to teach. Then let us address our discussion to the more practical question, how we are to fit ourselves to render, in time of war, creditable service as staff-officers to our generals.

"Does a general do all of his own work, or most of it through his staff officers? Who works out the innumerable practical details of tactics and logistics upon which his orders are based? Who draws up the drafts of the orders themselves, and sees that all the details covered thereby are carefully explained to subordinate commanders? The general commanding a large force cannot be everywhere at once to give information and correct mistakes. Upon whom does he rely to do this? There are few military geniuses, like Napoleon and Von Moltke, who never need assistance or advice. With whom does the average general most frequently counsel, even concerning his strategical purposes? Can a general expect valuable service or sound judgment from a staff-officer who knows nothing about a "general's business?" Where ever in war the government needs one general, there it also needs from ten to twenty well trained staff-officers.

"I will acknowledge that during my service of twenty years I have several times encountered in service periodicals articles voicing criticism similar to that I am now replying to. It has seemed to me that such critics have always ignored the considerations I have just mentioned, but this was natural, as those who have presumed to publish criticisms have generally been among the class who have the least knowledge of the instruction really most needed by army officers. Possessing generally no practical experience with the army, they are *practically* ignorant of the state of instruction in the army at large.

"The field exercises we have been having for a number of weeks are the solution of simple military problems, involving the duties and responsibilities of majors, captains and lieutenants. The entire available command participated in them, they covered all the terrain immediately surrounding the post, and each has been assigned to a designated officer for discussion before the Lyceum. This discussion will cover so well the ground of simple problems, with our command, on the terrain covered by our Lyceum map, that additional elementary problems limited to the same command and terrain could not be more than an approximate duplication of those already assigned for consideration.

"To maintain interest, it is highly desirable to have something different, and I know of no more important subject pertaining to actual war, as well as to field exercises, than the proper preparation and form of field orders. I think I am well within the limits of conservative judgment, when I announce a conviction that the very great majority of our officers are deficient in knowledge of this important subject. As the problems here proposed in civilized warfare deal very largely with the preparation of field orders in proper form, I think they are pertinent and appropriate.

"Though the assumed force seems disproportionately large when compared with our present personal probabilities in the way of command and responsibility, the orders required for the operations of such a force will contain only such provisions as are equally required in orders regulating the operations of smaller commands.

"Another reason for assuming a force of considerable size, may be found in the impossibility of establishing a proper tactical system of outposts, with a force the strength of ours, for a post situated as is Fort Apache.

"An accurate knowledge of the proper form and contents of a field order is necessary to all officers, regardless of their rank, for though it be possible an officer may never be called upon to issue an order, all must necessarily have to receive and interpret them. Now the method pursued in teaching the art of reading maps is to teach the art of making them, and I believe there is no better way of creating capacity for properly interpreting orders than teaching how to make them.

"Few have either the time or inclination to complete a thorough study of such a tedious subject voluntarily. They must be driven to it by an exacting responsibility or special assignment. Interest must be aroused, or the necessity must be great, before the subject can be pursued with that degree of zeal and enthusiasm which produces successful results. I know of no better place to make a beginning than in the Lyceum. The scope of Lyceums must necessarily widen as time passes, and I see no good reason why our Lyceum should be limited to following in the wake rather than proceeding with the van of progress.

"There can be no possible doubt that a knowledge of this subject should be acquired prior to the commencement of war. In support of the assertions and sentiments set forth in these remarks, I desire to read you a few extracts from a lecture on this subject delivered by Captain Eben Swift, Fifth Cavalry, when he was an instructor in the art of war at the Infantry and Cavalry School, in 1895."

The above memorandum was signed "J. F. Bell, Lieutenant, Seventh Cavalry." Though still a lieutenant when the war with Spain broke out only *three months later*, this officer was a brigadier-general of volunteers in less than two years after his Lyceum argument.

The problems were adopted and solved by the Lyceum. Copies of them are enclosed herewith, together with a copy of Lieutenant Bell's solution of one of them.

Very respectfully,

GEO. B. RODNEY,
First Lieutenant, Fifth Cavalry.

FORT APACHE, ARIZONA, November 15, 1894.

PROPOSED PROBLEMS

FOR SOLUTION BY LYCEUM AT FORT APACHE, ARIZONA TERRITORY.

INDIAN WARFARE.

General Situation.

It will be assumed that the Chiricahua Cattle Company in bringing in a herd of cattle to this post stops for the night on the south bank of Black River, in the vicinity of a camp of Indians on a hunting expedition from the San Carlos Reservation. On arrival at the post the representative of the

company reports to the commanding officer that during the night some of his cattle disappeared and that after a careful search their trail was found and followed into the ranchería of two Indian families, where a part of the meat was found. There were about seventy-five Indians in the entire band, twenty-five of whom were well armed, able-bodied bucks, the rest being old men, women and children. Two of the young men acknowledge taking the cattle, but refuse to make reparation, claiming the cattle by way of remuneration for the privilege of passing through their land. The other members of the band support them and refuse to allow their arrest by the cattle men.

Problem No. 1. Special Situation.

These facts are reported to the Agent at San Carlos, who requests the commanding officer at Fort Apache to send out and arrest those two Indians and confine them in the guard-house at Apache until he can send after them and investigate the case. It is known that they are in an ugly mood, and will not permit arrest in the usual way by a few men or by Indian scouts. The commanding officer concludes to send a military command.

Required:

1st. An order prepared in due form, directing the duty, showing the constitution of the command deemed proper to send, and covering all other details necessary and proper to be covered in such a case.

2d. A written memorandum, setting forth in detail the methods to be followed in conducting negotiations with the Indians and in making the arrest, showing clearly such precautions as should be taken to provide for a contingency of treachery or resistance.

Problem No. 2. Special Situation.

The occurrences described in Problem No. 1, and other troubles with cattlemen, result in hostilities, and the Indians of both the San Carlos and White Mountain reservations conclude to go to war. As a preliminary, however, it is agreed to make a secret preconcerted attack upon Fort Apache for

the purpose of plunder and of releasing the two imprisoned Indians. The telegraph lines between Carlos and Holbrook are cut and the Indian concentration takes place at night, unknown to the military authorities. A friendly Indian arrives at the post, reports the state of affairs to the commanding officer, and informs him that the post will be attacked within an hour on all sides at once.

Required: Written reports setting forth:

1st. Best dispositions of the available force of the post to resist such an attack.

2d. What should be done to give the alarm to the surrounding community, and how this can best be accomplished.

3d. Assuming that sufficient time has been had to prepare for such an attack, what should be done in anticipation of a siege by an overwhelming number of Indians, in the way of necessary precautions and preparation of the available force, construction of trenches, barricades, etc., with facilities and material available; their location, material of which constructed, etc.

CIVILIZED WARFARE.

General Situation.

An army of the South (Blue) with a base on the Southern Pacific is operating against an army of the North (Brown) whose base is on the Santa Fé. An advanced brigade of Blues, consisting of the First, Second and Third Regiments of Infantry, headquarters and two squadrons Fourth Regiment of Cavalry, Light Battery "A" Fourth Artillery, Company A, Corps of Engineers and Company B, Hospital Corps, has advanced to Fort Apache and there established a sub-base, or dépôt of supplies.

Problem No. 3. Special Situation.

The Browns begin to advance southward in two columns. One starts at Winslow, probably intending to proceed via Heber and Pinedale to a junction with the other, which proceeds southward on the Holbrook Road. The Blue brigade commander receives orders from his division commander, who is advancing from the south, to leave a small guard for

his post and dépôt of supplies and proceed with the rest of his brigade on an armed reconnaissance of the enemy. He decides to advance in two columns also, one on the Holbrook Road, via Cooley's Ranch, the other via Forestdale and Pinedale to a junction, if desirable or necessary, with the first-mentioned, on the Holbrook Road. Columns of enemy thought to be about equal in strength.

Required:

1st. Division and distribution of troops.

2d. Models of orders to be issued by the brigade commander.

3d. Models of orders to be issued by the commander of each column, showing order of march, composition of each portion of the column, advance-guard, main body, etc.

4th. Models of orders issued by commanders of the two advance-guards, indicating order of march, duty expected, and such other things as are necessary and proper.

Problem No. 4. Special Situation.

The Blue brigade develops and reports upon the enemy, unites at Fool Hollow, and falls back to Cooley's Ranch, closely followed by the eastern column of Browns.

Required: Written reports embodying:

1st. Model of order to be issued by the brigade commander (Blue) for the movement, showing division and distribution of troops, rear-guard, main body, etc.

2d. Model of order issued by commander of rear-guard, specifying duty expected, order of march, etc.

Problem No. 5. Special Situation.

At Cooley's Ranch the brigade commander ascertains that the western column of Browns is proceeding via Forestdale and Cedar Creek toward Fort Apache, and receives instructions to leave a small containing force at Cooley's with orders to retire slowly, delaying the enemy as much as possible, and with the rest of his command to hurry back and establish outposts for the protection of the post, dépôt of supplies and the Agency Ford, which he is cautioned to prevent being forced or turned, and to hold at all hazards.

Required:

1st. Written reports showing division and distribution of entire force, strengths of different portions of outposts, etc.

2d. Showing location of reserves, supports, pickets, or cossack posts, etc., and of lines of observation and resistance, including such modifications as may be necessary by night.

3d. Such special provisions as are necessary for the regulation of practical details pertaining to division of time, rotation of duties, relief of different components of outposts, etc.

4th. Such minor field engineering operations as might be necessary accessories to the plan of outposts adopted, *i. e.*, location of temporary roads to facilitate passage of troops to and from lines of observation and resistance, and from one portion to another, location and character of field fortifications and line of trenches, and location and character of means of rapid communication, *i. e.*, field telegraph or telephone lines.

5th. Handling of the force appropriate to attacks from the direction of Cedar Creek and Cooley's and from both directions at once.

Problem No. 6.

Models of orders covering the operations and subjects discussed in Problem No. 5.

SOLUTION OF PROBLEM NO. 3.

1st. *Division and Distribution of Troops.*

Assuming that the infantry regiments are organized in three battalions of four companies each: that Colonel A commands the First Infantry: Colonel B, the Second: and Colonel C, the Third; the brigade commander would assign one battalion of infantry to the duty of guarding the wagon train, dépôt of supplies and post, and distribute the rest of his command as follows: A regiment and one battalion of infantry, a squadron of cavalry, a platoon of artillery, half of a company of engineers, and half of a company of the

hospital corps to each of two columns, one to advance via Holbrook Road, the other via Cedar Creek, Forestdale and Pinedale.

Wagon trains would remain at Apache, and pack trains accompany commands to which assigned.

2d. *Orders to be Issued by the Brigade Commander.*

FIRST BRIGADE, FIRST DIVISION, FIRST (BLUE) ARMY CORPS.

FORT APACHE, ARIZONA TER., 1-27-'98, 7:00 P. M.

Commanding Officer, First Infantry:

SIR:

I. The enemy is advancing southward in two columns. One (the western) started at —— (hour) on —— (date) from Winslow in the direction of Heber. It may approach this post from a northwesterly direction or proceed via Pinedale to a junction with the other (the eastern) column, which left Holbrook at —— (hour) on —— (date) and is following the Holbrook-Apache Road.

II. The brigade will start to-morrow on an armed reconnaissance of the enemy.

III. (*a*) It will proceed in two columns. The eastern column will proceed via the Apache-Holbrook Road, and reconnoiter the eastern column of the enemy. The western column will proceed via Cedar Creek, Forestdale and Pinedale and reconnoiter the western column of the enemy.

(*b*) You are assigned command of the western column, which will consist of your regiment and the following detachments, which have been directed to report to you, viz.: one battalion of infantry, one squadron of cavalry, one platoon of artillery, a half company of engineers, and a half company of the hospital corps.

(*c*) You will start to-morrow at 8 o'clock A. M. and establish and maintain connection during the movement with our eastern column.

If the western column of the enemy continues a direct advance upon this post, retire in its front and delay its progress. If it turns eastward, retire in that direction, observing the enemy, and report with your command to me.

(*d*) It is important that you keep me continually informed of the position and movements of yourself and the enemy.

IV. Wagon trains and heavy baggage will be left at this post. Pack trains will accompany commands to which assigned.

V. I will accompany the man body of the eastern column.

Very respectfully,

———— ————,

Brigadier General, etc., Commanding.

Sent by Orderly.

Note:—The order issued to the commanding officer of the Second Infantry, commanding the eastern column, would be very similar to the above, with the exception that the last paragraph of section *c* and section *d* would not be included in his order.

Same date, 5:00 P. M.

Commanding Officer, Third Infantry:

SIR:—The commanding general directs that you detail one battalion of your regiment as a guard for the dépôt of supplies, post and wagon trains, which will be left here until further orders; that you have another battalion report to Colonel A, and that with the remaining one you report for duty to Colonel B.

Very respectfully.

———— ————.

Assistant Adjutant General.

Commanding Officer, Fourth Cavalry:

SIR:—The commanding general directs that you have one squadron of your regiment report to Colonel B. and that with the remaining one you report for duty to Colonel A.

Very respectfully,

———— ————.

Assistant Adjutant General.

Commanding Officer, Light Battery A, Fourth Artillery:

SIR:—The commanding general directs that you have one platoon of your battery report to Colonel A. and with the remaining one you report for duty to Colonel B.

Very respectfully, etc.

Note:—Similar letters to the commanding officers of Company A, corps of engineers, and Company B, hospital corps, requiring them to send a half company each to report to Colonel A, and with the remaining half to report for duty to Colonel B.

The orders contained in the above letters could, with perfect propriety, be given verbally to the persons concerned by the brigade commander, and, in fact, would most frequently be given that way.

SPECIAL ORDERS, } Same date, 5 P. M.
No. — }

With the exception of that battalion of the Third Infantry which is detailed as a guard for the dépôt of supplies, for the post and wagon trains, this command will at once draw and prepare for transportation by packs, ten days' rations and forage, and two hundred rounds of ammunition per field piece, rifle and carbine, and one hundred rounds per pistol.

By command of, etc.

———— ————,
Assistant Adjutant General.

3d. *Models of Orders by Column Commanders.*

WESTERN COLUMN, FIRST BRIGADE, FIRST DIVISION, FIRST ARMY CORPS.

FORT APACHE, ARIZONA TER., 1–27–98, 8 P. M.

DETACHMENT ORDERS, }
No. 1. }

Distribution of Troops.

Advance Cavalry: (Major X)
1 squadron 4th Cav., less 1 troop.
Advance Guard: (Major Y)
2½ platoons of cavalry;
1 battalion, Third Infantry.
½ company of Engineers.
1 detachment Hospital Corps.

I. The enemy is advancing southward in two columns. One started at — (hour) on — (date) from Winslow in the direction of Heber. The other column left Holbrook at — (hour) on — (date) and is following the Holbrook-Apache Road.

The brigade divided into two columns, will start to-morrow on an armed reconnaissance of the enemy. The eastern column will proceed via the Apache-Holbrook Road to reconnoiter the eastern column of the enemy.

II. This (western) column will reconnoiter the western column of the enemy.

Main body in order of march:
Commanding officer and staff.
½ platoon of cavalry.
1 battalion First Infantry.
Platoon of artillery.
2 battalions First Infantry, less one company.
½ company Hospital Corps, less one detachment.
Rear Guard: (Captain Z)
1 platoon of cavalry.
1 company, First Infantry.

III. (*a*) The advance cavalry will move at 7:30 A. M. and, proceeding via Cedar Creek, Forestdale and Pinedale, will find the enemy and screen our march.

(*b*) The rest of the column will assemble at the bridge over White River, at 8 A. M., and the advance-guard will immediately proceed and follow the advance cavalry. The commander of the advance-guard will detach sufficient cavalry to establish and maintain connection with the eastern column during the movement.

(*c*) The main body will follow at 1,000 yards.

(*d*) The rear-guard will accompany the pack trains and follow closely.

IV. Wagon trains and heavy baggage will be left at this post.

V. I will be with the main body.

A,
Colonel First Infantry, Commanding.

Copy by orderly to regimental, battalion, squadron, battery, advance and rear guard commanders.

4th. *Models of Advance-Guard Orders.*

FORT APACHE, ARIZONA TER., 1–27–98, 9 P. M.

ADVANCE GUARD ORDERS }
No. 1. }

Distribution of Troops and Order of March:

I. Van Guard:
½ platoon Fourth Cavalry.
2 companies Third Infantry.
½ company Engineer Corps.

I. Same as 1 of preceding order, and add: Our column will reconnoiter the western column of the enemy.

II. The advance-guard will proceed on this duty to-morrow.

III. (*a*) The vanguard will leave at 8 A. M. and follow the trail of the advance cavalry.

II. Reserves:
2 companies, Third Infantry.
1 detachment Hospital Corps.

III. Connecting Patrols on Right Flank:
2 platoons, Fourth Cavalry.

(*b*) The reserve will follow at a distance of 1,000 yards.

(*c*) The ranking officer of cavalry, with two platoons, performing the duties of connecting patrols, will establish and maintain connection with the eastern column during the movement.

IV. The commanding officer will be with the vanguard.

Y,
Major Third Infantry, Commanding.

Communicated verbally to commanding officers of all subdivisions and to all cavalry officers.

Note.—Similar orders would be issued in the eastern column.

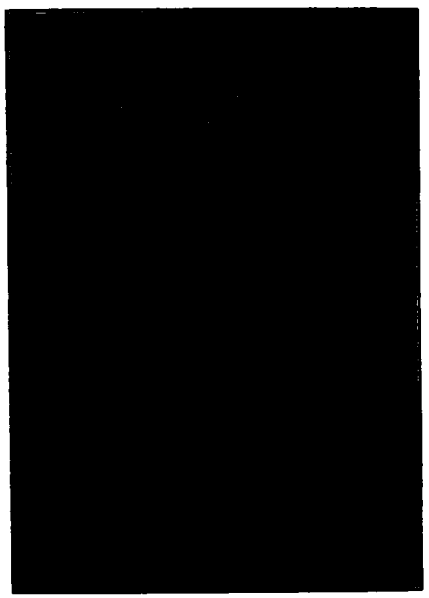
FIVE YEARS A DRAGOON ('49 TO '54) AND OTHER ADVENTURES ON THE GREAT PLAINS.

PART V.

AND now the Kansas War was on. I was acting post wagonmaster at Fort Leavenworth, when one night in May, about 10 o'clock, Lieutenant J. E. B. Stuart, regimental quartermaster, First Cavalry, rode in with a requisition for forage and rations for Colonel Sumner's command, camped southwest of Westport, Missouri. He had ridden from there, thirty-four miles, since noon. The command would be out of forage and provisions the next day, and the order was to have the supplies there in time for issue the day after. I was instructed to have teams in from the nearest train, camped nine miles south, as early as possible. I sent word to the watchman at the stable to bring my horse and wake me at 2 o'clock, which he did.

At 3:30 in the morning I was in nine-mile camp, breakfasted and started back at 4:30 and before 7 we were loading at the forage yard and commissary. At 9 o'clock the train started down the road. We arrived at nine-mile camp, fed and watered the mules, and lunched, and at 1:30 were on the road again. I did not expect to go any further, but Stuart came along just then and said the quartermaster had left it with him, and he wanted me to stay with him all the way through, which I did. The roads were exceedingly bad the last few miles before reaching the ferry, and it was dark when we got the last wagon over the Kaw. The way to Colonel Sumner's camp was over a crooked road little traveled, much of the way through timber and mud holes, with no bridges over creeks and deep gullies. Fortu-

nately, the moon gave a dim light. Several wagons were upset, several trees had to be cut down where the road was too narrow and crooked, and in many places limbs must be cut to give room for wagons to pass. In short, at 1 A. M., after the most incessant toil, we camped near Colonel Sumner's command. I rode with Stuart to headquarters, where he reported his arrival with train and supplies. He loaned me a pair of blankets, and we both lay down in his tent for a nap. I was nearly worn out. Stuart had been a quiet witness of a very hard struggle, and but for his piloting we should not have gotten there that night, for he was the only one of the party who had been over the road.



GENERAL J. E. B. STUART.*

At sunrise I started for my camp about two miles out and overtook Lieutenan Ransom, late General Ransom of the Confederate Army, and said "Good morning," calling his name. He looked at me very sharply and returned my greeting pleasantly enough, but I thought coolly, as we were on the best

*James E. B. Stuart was born in Virginia and graduated from the Military Academy at West Point in 1854. He was then promoted brevet second lieutenant of United States Mounted Riflemen and reported to his regiment in Texas. In March 1855 he was promoted second lieutenant of the First United States Cavalry (now the Fourth), and served as quartermaster of that regiment from July 1855 until May 1857. He became first lieutenant of the First Cavalry in December 1855, and captain in April 1861.

In May 1861 he resigned and accepted a commission in the Confederate service as lieutenant-colonel of a Virginia regiment. His promotion in the Confederate army was rapid, and he was a lieutenant-general commanding the cavalry of General Lee's army when he received his mortal wound at Yellow Tavern. He died May 12, 1864.

Stuart saw varied and active service during the time that he was a lieutenant in the First United States Cavalry. He was in several expeditions and combats with various Indian tribes, and was severely wounded in a fight with the Cheyennes in 1857. He took an active part in the Kansas disturbances of the fifties, and was in Colonel Albert Sidney Johnston's Utah Expedition in 1858. He was at home on leave of absence in 1859, and accompanied Colonel Robert E. Lee as a volunteer aide-de-camp in the expedition to suppress John Brown's Raid.

of terms. I asked where he was going so early, and he said "To Fort Leavenworth." I replied that I was going there too. Just then we crossed a clear stream of water. I dismounted, dropped my horse's rein, and remarked that I would bathe a little and overtake him. He looked askance at me and turned off to ride up to a group of officers' tents on the hill near by. In a clump of willows I took a pretty good bath, wiped myself with a towel that I carried in my holster, combed my hair and whiskers with my fingers, and went on to the group of tents where Ransom had stopped. With him were several officers in front of a tent, seemingly paying considerable attention to me. As I rode up they all laughed heartily. The joke seemed to be on Ransom. He said that he had no idea who I was, but that I was the hardest looking man he ever saw. I was haggard and weary from want of sleep, my hands and face were black with dust and mud, my clothes muddy from head to foot, and my horse and equipment no better. Ransom's description of me was weird indeed, and he declared that he was afraid to ride with me. He had started without arms, and called on Lieutenant Johnson to borrow a pistol. Now that I was cleaned up a little they all knew me. At my camp we got some breakfast and rode to Fort Leavenworth, where we arrived about 2 o'clock. I was as good as new the next day.

Things kept getting worse in Kansas; marching columns and guerrilla bands of both parties (Pro-Slavery and Free State) were moving about all along the border. Outrages were committed by both parties, but the worst feature of the warfare was the raids on homes, ostensibly for political reasons, really very often for robbery and plunder. It

seemed necessary to keep United States troops in camps and on the move as protection to good citizens of both parties and to keep the threatening columns apart. United States troops were stationed near Westport, Franklin, Prairie or Baldwin City, Lecompton, etc. These camps were headquarters from which troops could move quickly when necessary, and must be supplied every ten days with forage and provisions. Something like 100 wagons were required for that purpose, and I was detailed by the quartermaster, Major Sibley, to look after them. Most of the supplies went by Lawrence, crossing the ferry there, when the wagons for Franklin were sent off under an assistant wagonmaster, those for Baldwin City under another, and those for Lecompton, the largest command, under another, etc.

After crossing at Lawrence I generally went on to Lecompton, ten miles, and after finishing there, rode across country to other camps if necessary, returning to Lawrence about the time the wagons from different points reached there, and then to Fort Leavenworth for another ten days' supply. While the teams were not overworked, I was very much so. I never worked so hard and so continuously from May to October as I did this season; five months of exposure and overwork, which would have ruined any man of weak constitution; and it nearly ruined me.

The last trip I started on was with a train of supplies for some troops opposite Topeka. Having delivered them I was to ride across to Lecompton and then to Lawrence. The train under Mr. Beery started early, but I did not get off until afternoon. I was ill enough to be in bed, but said nothing of it. I rode alone, and was so sick that I could scarcely sit my horse, and afraid to dismount lest I could not mount again. In this condition I arrived at a house on Stranger Creek, east of the crossing near Easton. I did not know the people, but dismounted, staggered into the house, and was unconscious. About 8 o'clock the next morning I opened my eyes and recognized the woman standing over me bathing my temples and forehead as the one I had seen when I dismounted. I felt a little light headed, but my

mind was clear. I imagined, however, that I had been there three days, from Tuesday to Friday.

The supplies in the train were for two commands some distance apart, and I had the papers, invoices, number of wagons to go to each place, the contents of each wagon, etc. The wagonmaster knew nothing about the distribution of goods, and, if this was Friday, they were a day behind and there would be confusion. However, I soon learned that my idea of the time I had been there was but a delirium, and this was Wednesday morning. I had been there from 5 o'clock Tuesday to 8 o'clock Wednesday. This good woman had watched over me all night. Mr. and Mrs. Martin Hefferlin were the people, and I might have died but for their kindness. My fever lasted nearly all night, during which I was quite violent, requiring close attention: and now I was nearly helpless, but my mind was clear. I inquired what time the stage for Fort Riley would pass, and Mrs. Hefferlin said in about an hour. I bundled up my papers and memorandum book, wrote a short explanation and gave it to the stage driver, whom I happened to know, and who promised to give them to the wagonmaster. I found I could not ride, and returned to the fort with Lieutenant Buford (afterwards General Buford) who was en route

GEN. EDWIN VOSE SUMNER.*

*Edwin Vose Sumner was born in Boston in 1797, and educated at Milton Academy. He was appointed second lieutenant of the Second Infantry in March 1819, became first lieutenant in 1823, and was promoted to captain First Dragoons (now First Cavalry) at the organization of that regiment in March 1833. In 1846 he was promoted major Second Dragoons (now Second Cavalry), and in 1848 lieutenant-colonel First Dragoons; and when the First Cavalry (now the Fourth) was created in 1855, he was appointed its colonel. He was appointed brigadier-general in March, 1861, and major-general of volunteers in June of the same year. He died in March, 1863.

General Sumner had his share of wars. He distinguished himself in the Black Hawk War, and took part in numerous expeditions against Indians. He participated in every engagement of General Scott's army in its advance

from Fort Riley in an ambulance. For two weeks I alternately shook with chills and burned with fever, but finally pulled out.

The incidents of this summer's work were numerous, but would be mostly uninteresting now. The history of the Kansas War has been written by many able pens, some truthful and some garbled and exaggerated. My part in it was that of an humble employé of the government. It was not my right or privilege to carry the news from Lawrence, the Free State headquarters to Leavenworth, the Pro-Slavery headquarters, nor vice versa. Of course a great deal came under my observation that might have been useful to either party, but my life was at stake every day if I became a news-bearer in either direction. Both parties contained zealots and enthusiasts who would hesitate at nothing to crown themselves with glory by killing some one on the other side. Most of the men on either side were merely struggling for a principle—whether Kansas should be a free or a slave State—whether they should build homes, as most of them wanted to, in a free or a slave State; and most of both parties were honest, and willing to abide the result of a fair vote; but neither could shake off the element that joined for adventure, for revenge, for robbery, for murder; and that element was a curse to both parties.

I was present at Lecompton when the compromise was effected, and both parties settled down to peace in the fall of 1856. Pro-Slavery and Free State agreed to keep the peace and frown down every disturbing element. Captain Sam Walker was placed in command of a company of Free State men, and Captain John Wallace in command of a company composed of the best element of the Pro-Slavery party—all pledged to act together for the common good and the peace and prosperity of the Territory. Homes became safe, murder and arson were unpopular.

One lovely Sabbath, while encamped near Lecompton, I saw half a dozen houses burning—all belonging to Free State people, who were afraid to remain at home and were at Lawrence. Colonel Cook entrusted to my care a Free State minister who had been captured by the Pro-Slavery party, and whose home was near Leavenworth, and requested me to see that he got home to his family. He was the Rev. J. H. Byrd. I kept him concealed in a wagon, and he got home safely, was in charge of the government farm at Fort Leavenworth during the Civil War, and died on his farm near Lawrence in September, 1897.

On the same trip, while crossing teams at Lawrence, a man of good address and the appearance of a gentleman, asked me if he could ride in one of my wagons to Leavenworth. He was about thirty years old, said he had a family in Ohio, had been looking over the country, and now wanted to go to Leavenworth and take boat for St. Louis and home. I told him he could go with me, and pointed to a wagon in which he might ride. A citizen sentinel pacing up and down the river bank with a Sharp's rifle on his shoulder said, that by General Lane's order no one was allowed to leave Lawrence, hence this man could not go. The officer in charge of the guard was called and the man remonstrated, said he had nothing to do with defending Lawrence from an attack which was expected, that he was a citizen of Ohio and was traveling through Kansas, as any free citizen of the United States had a right to do, and did not want to be drawn into the Kansas War—he would leave the Territory as quickly as he could get a boat at Leavenworth. But the guard said, "No," in a way that aroused the man's anger. Turning to me he said, "I wish I had a good gun or pistol, I believe I would just back on to that boat and see what they would do." I told him to get into the wagon—it would not wait for him—which he did, and the boat was shoved off. The man in charge turned angrily to me and said he would

from Vera Cruz to the City of Mexico, was wounded while leading a cavalry charge at Cerro Gordo, and for gallantry in holding back 5,000 Mexican lancers at Molino del Rey, was brevetted colonel.

In the Civil War he commanded the First Corps of the Army of the Potomac, and was in about all the battles that army engaged in, till General Hooker was placed in command of it. Thereupon he asked to be relieved and was ordered to command the Department of Missouri, but he died suddenly while on his way to his station.

He was twice wounded in the Seven Days' Battles before Richmond, and received his fourth battle-wound at Antietam.

report this to General Lane. I said: "I do not think you need trouble yourself—General Lane doesn't care anything about me—in fact, he doesn't know me." Some gentleman called to him, they talked a while and I heard no more of it. I fed Mr. Byrd and my new passenger as well as I could from my mess and landed them safely, for which they were very thankful.

The ferry at Lawrence was a flat-boat run by pulleys on a rope stretched across the river and fastened to a tree on either side and propelled by the force of the current. The boat was not large enough to hold a wagon and six mules, so the leaders were detached from the team and led around to a shallow ford higher up stream, where one might cross on horseback or with loose animals, but could not cross wagons. A Frenchman, married to a Delaware woman and living with the Delaware Indians on the north side of the river, built a boat and stretched a rope; and when I came along one day he met me two miles north of the ferry and wanted me to cross some of my wagons on his boat. I galloped on and found that he had made a good road and had a good boat that would carry a wagon and six-mule team, with room to spare; so I divided the train, going to the new ferry, about forty rods below the old one, myself with Mr. Lanter, an assistant wagonmaster, while Mr. Beery went to the old ferry. Just as the first wagon got on the ferry, I noticed that the old boat was on the south side and Beery was calling the ferryman. As we were about shoving off, the man who ran the old ferry called to me not to attempt to cross wagons on that (the new) ferry; if I did, he would cut the rope and send me down the river; and suiting the action to the word, he caught up an ax and started at a run for the big cottonwood tree where the rope was fastened. We were now in the stream and rapidly nearing the south bank. Standing on the front of the boat with pistol ready, I warned him to stop, and that if he attempted to cut the rope, I would surely kill him.

The boat landed and he stopped within ten feet of the tree. I ordered him back to his boat, at the same time asking him what he meant. He declared that the Frenchman

had no charter to run a boat, hence, no right, while he had a charter from the Territorial Legislature for fifteen years. On the other hand, the Frenchman claimed that the Dela-

MAJOR-GENERAL JOHN BUFORD.*

wares owned the land on the north side, and had just as much right to land on the south side without any charter as the other fellow had to land on the Delaware reservation,

*John Buford was born March 4, 1826, in Kentucky, and graduated from the Military Academy at West Point in 1848. He was then promoted brevet second lieutenant of the First Dragoons, and the next year second lieutenant of the Second Dragoons. In 1853 he became first lieutenant, and in 1859 cap-

over which he claimed that the Legislature had no jurisdiction. I ended the controversy by telling the Frenchman to cross all the wagons he could, and that I would protect him. I told the old ferryman to get his boat in motion quickly or I would run it with my men, and that the ferry which crossed the most wagons would get the most money. As to their quarrel, they could settle that before the courts or any other place — I knew nothing, nor did I care anything about their rights or the law; here were two ferries, and I was going to use them. I had the teamster of the first wagon drive close to the tree and told him to shoot any one attempting to approach it; and he, that same gentle, quiet, nervy "Bill" Curran, would have done it if necessary. Then I got aboard the old ferry and gave the ferryman one more chance to run his own boat, and just as I was about to let go, he and his man jumped on. He was sulky and threatened to report me to Colonel Cook at Lecompton. I cut him off short with the answer, that I did not care a —— what he did, so that he lost no time with the ferry; and I told Beery to push things with the new ferry, while I stayed with the old one. All worked with a will, but the old ferry lost two

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tain of the same regiment. In 1861 he was appointed major in the Inspector General's Department, brigadier-general of Volunteers in 1862, and major-general of Volunteers on the 16th December, 1863. He died in Washington a few minutes after his major-general's commission was placed in his hand.

There are no names upon its honor-roll in which the American cavalry feel a keener and a juster pride than in that of General Buford. He was an example to emulate from the beginning to the end of his brilliant but too short career. He died at the age of thirty-seven.

From the date of his graduation until the outbreak of the Civil War he was constantly and actively engaged with his regiment on the Western frontier in various Indian wars, the Kansas disturbances, and the Utah expedition. As an inspector he remained on duty about the defenses of Washington during the first year of the war, but was then assigned to the duty his active spirit yearned for—the command of cavalry in campaign. He was severely wounded at the second battle of Bull Run, but in less than a month was back on duty as chief of cavalry in the Army of the Potomac in the Maryland campaign. A history of this cavalry is a history of Buford from the time he joined it till he was borne away from it to die of a brief illness.

Buford chose the field for the battle of Gettysburg, and with his cavalry division held back Heth's Confederate infantry division until General Reynolds arrived with his corps. The Union owes to him, more than to any other man, its victory at Gettysburg.

trips to start with, and in the end the new ferry had six wagons the most. All, more than seventy wagons, were crossed in time to camp south of town before dark, whereas without the new ferry half of them would have camped in the bottom north of the river.

The next day, after finishing my business at the camp at Lecompton, I called at Colonel Cook's headquarters, as I always did before leaving his camp, and there was the complaining ferryman. Having finished his business with me, the Colonel said that Mr. ———— had made serious charges against me. I asked what they were, and the Colonel told the man to state his case in my presence. He did so with a good deal of feeling, but substantially correct, and I so admitted. "Well, what did you do it for?" asked the Colonel severely. I then stated that being in charge of a train-load of supplies for troops in the field, some of whose rations and forage would be exhausted the next day, I came to a river where I had been in the habit of using the ferry, and found another one complete and ready for use. Knowing nothing of any one's rights, and caring for nothing but to use all the means within my reach to get across with the least delay, I had used both ferries, and in doing so was obliged to treat Mr. ———— very harshly; and if he thought I would permit him to cut the ferry-rope and send me sailing down the Kaw River he was much mistaken; and if he ever attempted it again, he would fare worse. "Well, what have you to say to that?" asked the Colonel, turning to the ferryman. The man bristled a little in a loud voice, when the Colonel said, "Stop, sir, stop! You are a —— fool, and I will give you this advice: never try such a thing again on a good soldier. Mr. Lowe seems to know how to move trains to supply troops in the field—that is what he is employed for." The man left, and the Colonel remarked that he did not think I would have any more trouble with that fellow; to which I replied that I did not think he would "balk" again. This made the Colonel smile, and "balk" became a by-word among the officers, applied to any one who failed to move freely when told to do anything.

I crossed many times afterwards, and each ferry worked its best for the most money. The Frenchman generally captured the best of it by two or three wagons. The Frenchman kept the approach to his ferry in perfect shape, so that there would be no delays, and the old ferryman kept up the competition—result, a great saving in time and talk.

I saw John Brown but once. He came walking into Lawrence, looking like a shaggy lunatic. The class of people who shouted for "Captain John Brown" were the negative characters, always ready to be mixed up with any kind of notoriety, though not amounting to anything themselves. The substantial, thinking portion of the populace looked on, shook their heads, and, if they expressed themselves at all, it was an expression of contempt for that class of people. Brown was no hero among them, but was looked upon as a disturbing element. I never expected him to gain any respectable notoriety, and he did not in the Kansas War; and if he had not made the Harper's Ferry raid and been executed therefor, he would soon have been forgotten, or remembered only for his crimes. I do not know of one generous, manly, high-minded act that he did in Kansas, nor one for which he deserved honorable remembrance. On the other hand, his ranting lunacy and bad advice caused many murders on both sides. He was so wrapped up in the idea of the freedom of the slaves, that with others of like ilk he did not hesitate to steal negroes from their masters in Missouri, and this always justified him in stealing provisions for them to subsist upon, and transportation to carry them off. Many poor "darkies" were taken from homes against their better judgment through the persuasion and semi-coercion of the disturbing element who came to Kansas in the name of freedom, and made themselves notorious as border robbers and thieves. This element, with that which came from Missouri to carry the elections and override the will of the genuine settlers, together with the political adventurers, caused all the trouble. No better people ever settled a State than those who came to Kansas to make homes.

A young man, well dressed and well mounted, rode one evening into my camp west of Little Stranger Creek, and told me of a terrible battle that had been fought between Big Stranger and the home of Tonganoxie, a Delaware chief, about half-way between Leavenworth and Lawrence. Though he was not a participant in the battle, he thought his information correct. He said I should find dead men scattered about in considerable numbers; that the Free State and Pro-Slavery forces had met there, etc. A few words about this young man. He took supper with me, fed his horse and slept in my tent, and after breakfast left for Leavenworth, promising to take my advice and leave Kansas, which he did; but after peace was declared he returned, went to Denver and Montana, came back, drifted into the cattle business, became a millionaire, raised a prominent family of worthy people, and died in Kansas City a few years ago. He was always thankful that he had kept away from Captain Miller's band of "peace makers," allied himself with good men and led a good life.

The next morning at a point two miles east of Tonganoxie's house, at a place now called Moore's Summit, after the Hon. Crawford Moore who owned a large tract of land there, I found lying in the road a dead man, about thirty years old, dressed like a respectable mechanic. He lay upon his back, pockets turned out as if he had been robbed, a small bunch of keys near his trousers pocket. He had been shot twice, the last time evidently after he fell, in the top of his head. Evidently a number of horses and men had been there, but after riding in a circle a long distance round, I failed to find another body. Captain Sacket came along and had the body buried. I related the circumstance of finding the dead man, as I went through Lawrence, but no one knew who it was.

On my return a man met me at the ferry on the Lawrence side, G. W. H. Golding by name, and stated that he and three others, Roberts, Zimmerman and Brown (not John) had been driven out of Leavenworth on account of their open confession that they wanted Kansas to be a free State. Golding was a gunsmith, Roberts a carpenter, Brown

and Zimmerman other trades. All had worked at their respective trades and had not been mixed up in any difficulties. They had been notified to leave, and had started to walk to Lawrence. When near Tonganoxie's house, a mounted company of fifty or more men made them prisoners. They told their story and were damned as Abolitionists. Everybody who wanted to live in a free State and wanted Kansas to be a free State for that reason, was denounced as an Abolitionist and a dangerous character. The percentage of Abolitionists among the Free State men was very small. The sentiment of nearly all men from Northern States and many from Missouri and other Southern States, was in favor of making Kansas a free State. They did not care to meddle with slavery where it existed, but wanted the new State free, where they hoped to make homes, because they believed it best for themselves and families. I met men from Kentucky, Georgia, Virginia and Maryland who wanted Kansas to be free, and they were among the best settlers.

The captain of the troop of rangers who captured these men did not want to be encumbered with them, and concluded to leave them at Tonganoxie's house under guard, and four men volunteered to guard them. Tonganoxie had gone off, as many others had, to remain away until the troubles were settled. These four guards with their prisoners took possession of the house. About midnight they started under pretence of taking the prisoners back to Leavenworth, but really to find an excuse for murdering and robbing them. The prisoners were required to walk, one on the right side of each of these mounted men, and at a signal all were shot at. Golding was shot near the left ear, the bullet ranging downward. He fell and bled profusely, but lay quiet, nearly choking to death with blood, for fear they would shoot him again. The ruffians felt his pulse and one was about to shoot him again, when another said, "Don't waste your shots; no man ever bled that much and lived." Roberts struggled some and was shot again. Brown lay still; they felt his pulse and pounded him on the head with the butt of a gun. Zimmerman was pronounced dead. All were robbed (they had considerable money), the robbers

riding off at a gallop. Golding supposed his companions dead, turned over and relieved himself of the blood in his throat, found that he could walk, and finally made his way through the prairie and timber, keeping off the road, and got to Lawrence. Hearing that I had found Roberts and no others, made him hope that Brown and Zimmerman might have escaped as he did. It turned out that Brown was not hit by the shot, but fell and lay still, even holding his breath a long time, and the only injury was caused by the blows on the back of his head. He, too, thought his comrades dead and crept away; but he found that the blows on his head had so affected his eyes that he could scarcely see. In this condition he made his way to the Kaw River, living on green corn for several days, until he was found below Lawrence. I do not know what became of him. Zimmerman escaped badly wounded, but recovered. Golding was the first Free State sheriff of Leavenworth County, and was a useful citizen and good officer. He settled in Labette County and died there in 1895. The above is all there was of the terrible battle described by my friend.

To show the character of the four men who committed this outrage, I happened to know one of them personally, and I suppose the others were of like makeup. This one had been a trapper up the Yellowstone, committed one or two murders up there, and had to get out of the country to keep from being killed by other trappers. I hired him to go to Fort Riley in 1855 and discharged him on the road. He returned to Leavenworth and opened up a headquarters for toughs, his apparent business being that of a saloon keeper. Many men told me that it was only a question of time when he would kill me, if he got a chance. Everybody went armed, and, of course, I was not behind others in having good arms and being prepared to use them. One thing I was pretty safe on, I did not visit the town or tough places at night, and never feared that any man would assassinate me face to face. He might waylay me, but that was hard to do in broad daylight, with a man who was always sober and accustomed to care for himself. But his threats caused me to keep the run of him. One day I met him at the corner of

Main and Shawnee Streets; I was going north, as he came round the corner and turned south with a rifle on his shoulder. I stepped to the edge of the walk, drew my pistol quickly and motioned him to continue on south, which he did. Neither spoke. When he got to Delaware Street, he turned west, and I went on north to where my horse was hitched and rode to the Fort. I never saw him afterwards, but heard the next day that he had joined one of the companies of "peace makers."

In the fall, soon after peace arrangements at Lecompton, which destroyed all the business of irresponsible "peace makers," a promiscuous lot of men were assembled in a saloon in Leavenworth, some drinking, some playing cards, talking over the past, conjecturing the future, etc. My "friend" was of the number—swaggering, swearing and bragging—telling of his prowess, and among other outrages he bragged of killing Roberts. "I did not let my man escape," said he. Some Georgians present had come to Kansas to settle, not to steal or rob, but to settle—preferably to make Kansas a slave State, but to settle any way and make the best of it. In the meantime some of them had become so disgusted with the so-called "Pro-Slavery" gangs, as represented by the "peace makers" above referred to and the crowds that came over from Missouri to carry the elections, that they leaned towards the Free State party as representing the better element, and finally some of them concluded to and did act with that party. One of these Georgians, who had been much disappointed and disgusted, now slightly under the influence of liquor, sprang to his feet, rifle in hand, faced the big ruffian and spoke, as reported to me, about as follows: "You scoundrel! you thief! you characterless murderer! You who had nothing at stake, neither character, home, friends, nor hope for the future, you and others like you have roamed this country to our disgrace and the destruction of all that we hoped to build. By murder, arson and robbery you have made us a stench in the nostrils of all decent men. I am going back to Georgia, but for the sake of my comrades who must stay here and struggle for a living, I am going to kill you, so die, damn you, die!" And he shot the ruffian dead.

During the Georgian's speech the ruffian had braced himself up, fumbled his pistol and acted as if he was going to use it, but the Georgian had the "drop" and would have killed him any instant that he thought it necessary. A friend of mine who was present told me this two hours after in my camp fifteen miles away, and of the scenes and incidents previous to and following the killing. The Georgian's speech caused a sensation, not only among the tough element, who thinned out a good deal afterwards, but among the better element who had looked with suspicion upon all Southerners who came to make Kansas a slave State. Gradually it dawned upon them that there were good men of the Pro Slavery party who would fall into line and work for Kansas any way, build homes and be good citizens. But the Georgian who did the killing did not return home, but found government employment, went with me on the Cheyenne Expedition in 1857, to Utah in 1858, where I left him, and thence to California. Frugal, industrious and honest, he made all good men respect him. Two of the other Georgians who were in the room when the killing was done, worked for me in government business more than two years, saved their money, and made homes in Kansas. Better men it would be hard to find.

At Lawrence, one of my first acquaintances was Lyman Allen. He was in the stove and hardware business, a genial, companionable man. After crossing the ferries, I always went to his office to write my certificate on which the ferrymen collected their pay from the quartermaster at Fort Leavenworth. So that every time I passed through there, going or coming, I saw him. A few days after peace was patched up at Lecompton, I met Governor Charles Robinson in Allen's office. I had seen him frequently as a prisoner at Colonel Cook's camp at Lecompton, but now made his acquaintance for the first time. Having some leisure, and the Governor seeming to want to talk with me, I remained in conversation with him and Mr. Allen until two distinguished leaders of the Pro-Slavery party came in and introduced themselves to

the Governor, who introduced them to Mr. Allen and me. They talked a little, evidently without any very congenial feeling on either side, and treated each other courteously for a few minutes, when the visitors rose to go. After shaking hands reservedly all around, one of them turned to the Governor and said that he had lost a negro man, and had reason to believe he was in Lawrence—he had the man in camp during the campaign and some one had stolen him. He asked the Governor if he had heard of such a man, describing him, to which the Governor replied that he had not. The other man said: "Well, if the nigger does come under your notice, I wish you would try to save him for me," to which the Governor replied: "Well, if I see him." And the gentlemen were off. After they went out the Governor turned to me and said, that he had been informed that each of these two men had declared that they would shoot him on sight, "And now," said he, "they come in here to inquire after a runaway negro, and while both are armed and I am not, neither acts as if inclined to shoot." These men, then young, were among the wealthiest in Platte and Buchanan Counties, in Missouri; both were Union men during the War of the Rebellion, one was a colonel, several terms a congressman, and died a congressman from the St. Joe district in Missouri—one of the ablest men from that or any other State. And so the change referred to by Governor Robinson was not so great, in the light of what followed. When Robinson became governor he made his friend Lyman Allen Adjutant General of the State.

Lieutenant Stuart, acting commissary officer at Fort Leavenworth, found himself with 400 work oxen on hand in the fall of 1856, turned over to him by the quartermaster to be fed for beef. He employed me to take them to Platte County, locate them, buy feed for them, etc., and I was transferred to the commissary department for that purpose. I placed them on the farm of Mr. Daniel Carey, near which I had been the winter before. In the spring of 1857 the oxen were very fat. I had spent a pleasant winter with nice people, and the last of April I returned the cattle to Salt Creek Valley, transferred back to the quartermaster's department, and began fitting up trains for the Cheyenne expedition to be commanded by Colonel E. V. Sumner, First (now Fourth) Cavalry, with Lieutenant J. E. B. Stuart, acting quartermaster and commissary of the expedition. Of this campaign, in which I was master of transportation, I will tell in my next paper, so far as it came under my observation.

THE ORGANIZATION OF A SCOUT AND SHARPSHOOTER CORPS.

By Captain ALONZO GRAY, Fourteenth Cavalry.

FOREIGN armies, to a much greater extent than the American, have organized special corps, which are valuable only in time of war or public danger, or in extended maneuvers. I do not know of any corps organized for the combined purposes indicated in the above heading.

Our army had, and still has, many scout organizations, whose members have no shooting qualifications. During the War of the Rebellion, it had many sharpshooters, without reference to their scouting qualities. It also had individual scouts who were fine shots.

It would seem that a corps organized and trained in time of peace, which combines both of these qualities, would be especially valuable in time of war.

ORGANIZATION.

I would organize this corps into twelve companies of fifty men each, exclusive of commissioned officers. As seldom more than one company would operate together, the battalion organization might be omitted. I would, however, have three majors who would act as chiefs of districts in which three or more companies of scouts might be operating. A colonel and staff should also be appointed, who should look after the equipment and supply. The company officers should be chosen with reference to their abilities, being young enough to be energetic and active, and yet old enough to have some experience; and they should be able to impart the necessary instruction.

The enlisted men before joining this corps should have the necessary disciplinary training, preferably two years in the line. They must be good horsemen, and for that reason would mostly, but not necessarily, come from the cavalry service. The men should first have the disciplinary training, because, in this corps, discipline would be enforced, but not taught.

On many cattle ranches a discipline sufficiently rigid is enforced, so that many recruits might be drawn from this source.

All men transferred to this corps should have attained the sharpshooter's grade before being transferred, unless they possessed some special qualification. In this case, they might be let in with the marksman's grade. In no case should a poor shot be allowed in the corps, no matter what his other qualifications were. Some system of examination should be pursued to ascertain a man's qualifications. The candidate should be able to read and write fluently, but, as many men could not do themselves justice by a written examination, an oral examination is all that should be required. No maximum age limit should be set so long as a man preserved his acute mental faculties. Age usually brings experience.

This organization would differ from the Philippine Scouts in that it would not be intended for garrison purposes. The companies might be allotted to different departments, and, if necessary, temporarily broken up but not disorganized.

PAY.

As the members of the corps would require special qualifications, the pay should be larger than the pay of corresponding grades in the line. Privates should get $18.00; corporals, $20.00; sergeants, $25.00; first sergeants, $30.00; and in addition to this, the usual increase for length of service, and for foreign service. This increase of pay would be an additional incentive to men of high qualifications to join the corps. The principal inducement, however, would be the love of adventure which pervades the entire nation.

UNIFORMS.

This corps should have a special uniform, and of the least conspicuous of all known colors. One of the most important duties of this corps would be to see and not be seen. The test of color should not be made upon a body of troops marching in the distance, but upon the appearance of the color in the grass, in the bush, on the water, when seen at night, in the woods, or against snow.

Some conclusions can be drawn from the color of wild animals. The tiger is undoubtedly, the most inconspicuous of all; but its color would, for obvious reasons, not be suitable for a soldier's uniform. The color of birds, which depend for their safety on concealment, is found repeated in the prairie chicken, bob white, plover, and numerous other varieties of game birds. This color is the one most suitable for the scout's uniform. Shoes with rawhide soles should be adopted, and canvas leggings only should be worn. Leather usually squeaks, and is therefore unsuitable for leggings. No metallic objects of any kind should be used on the uniform. Buttons and all ornaments and insignia should be of cloth. A suitable device would be a bundle of arrows.

ARMAMENT.

The best rifles should be provided regardless of cost. The new Springfield, model of 1904, if provided with telescopic sights, would be satisfactory. A good automatic pistol should also be provided, if such a pistol could be found. The caliber should not be smaller than forty-five. Caliber should be considered in preference to type.

INSTRUCTION.

The instruction should be noted for its individual rather than for its collective value. The men should be schooled in the subject of procuring information. (The subject of security pertains more to the duty of a sentinel.) They should be taught to lie concealed and watch a column of troops pass, and then to give an intelligent report as to their organization and numbers. They should be taught to question countrymen, women, and prisoners; to sift information and separate the true from the false; to trail and to judge the value of signs, such as the tracks of men, animals and vehicles; as well as horse dung, camp fires, the braying of mules, the barking of dogs, etc.

They should learn the military value of terrain and store the knowledge of it away for future use. They should be impressed with the value of localities through which they pass as camp cites for commands of various sizes; and they should remember the value of a piece of country with reference to the facility with which troops can pass through it unobserved.

Scouts should be expert in woodcraft: learn to read the stars, and to ascertain direction thereby, as well as by the moss on trees, the flight of birds, and other natural or artificial signs.

Scouts should know how to find their way in mountains, prairies, darkness, fogs, and blizzards: they should understand swimming and the swimming of horses; they should have a knowledge of the strength of currents, the character of bottoms, and the use that can be made of the approaches. They should also know how to make, at least crude, maps; how to make reports both verbal and written: how to carry messages, and how to destroy, if necessary, those entrusted to them. They will have to know how to live off of the country, how to hunt and fish, how to send signals, how to cut telegraph lines, and, if necessary, how to lie.

Each company should have men of special qualifications, such as telegraph operators, bicyclists, automobilists, stationary and railway engineers, electricians, railway men, linguists, etc.

USE.

The men of such a corps would probably be used in time of battle out in a thin line well to the front, and drawn in when the shock of battle came, and then used as messengers between different parts of the line. They would, as their name implies, scout well to the front, obtaining information of the enemy, bringing in the necessary reports. They might

be used to hang on the enemy's flank and annoy his march. On their reports would largely depend the general's plan of battle, and very probably the success or defeat of his army.

A partial test could be made by organizing and training one company at Fort Riley, and then using it during the field maneuvers. Time should be allowed for thorough instruction before a satisfactory test could be had. If this test should prove satisfactory, then a school of instruction should be established there, where all scouts should be trained before going out for serious work.

MALABANG, MINDANAO, P. I.,
July 28, 1904.

AN UMPIRE AT THE ARMY MANEUVERS.

BY MAJOR GEORGE H. MORGAN, NINTH CAVALRY.

AS the JOURNAL is only read by professional men, I may not be misunderstood when stating that it is worth twenty years of peace to feel the joy of entering into a real campaign with a command of real soldiers, fully organized, equipped and drilled by or directly under one's self.

This joy is tempered, if any of the conditions are unfulfilled, and any officer who has omitted from his calculations that he must expect to be judged as if he were thus perfectly equipped, has either had no experience, has not studied history, or is too sanguine for real work in this world.

There can be no better test to apply to our Regulars or to the organized Militia than the test of simulated war as found in the big maneuvers, as everything up to the point of actual contact may be made as real as the same thing in war itself. The game comes in when we meet the human equivalent of bullets, the umpire; and here at the point of contact is where he ought to be met.

General Bell on the 7th of September or General Grant on the 9th of the same month, during the late maneuvers near Manassas, Va., were not, probably, considering the umpire to the exclusion of all other factors of the problem in hand; and yet, the success of the movement was, under the rules, dependent upon the rulings of the umpire, or upon the importance he might attach to an imaginary division to be placed at any reasonable time in any reasonable position by the division commander.

To illustrate the importance of the study of the genus umpire: On the 6th of September, a troop of Brown cavalry

was enabled to approach a small body of mounted men of the Blue division accompanying a battery of artillery. The Brown troop was dismounted, under cover, to fight on foot, was placed on the edge of a wood within 150 yards of the enemy, delivered four volleys with deliberation, mounted and got away without trouble. Within a half-hour the attack was renewed "cavalry" fashion. The Brown troop was formed, as before, without the knowledge of the enemy, at the edge of a wood, and burst, mounted, out of the cover, within fifty yards of the battery unprepared. The command of the troop commander, "As foragers, Charge," was probably the first intimation the battery commander had of its presence.

The umpire with the battery was not much impressed by the earlier attack, as he judged the Blue loss to be five men. From the second and faulty attack he adjudged a loss of one third to the battery. I was compelled to give a loss of seventy-five per cent. to the troop, as it unexpectedly ran into a heavy infantry support. The troop commander, of course, thought his action was justified. He had been with troops at maneuvers before, and his judgment may have been better than mine, of course; and this brings me to the point of this paper.

Granted that subordinate commanders have a chance to get a practical exhibit of the smoothness in work of their machinery at maneuvers, should we add the missing factor of danger, by encouraging the cavalry charge or, as has been suggested, by giving each side a few ball cartridges?

In my opinion, there was no question as to the relative efficiency of the two attacks as described above. Why not consider it a game to the extent that if a commander of cavalry gets his force into a position where he considers a charge practicable and desirable, he may "form for attack" and move over about half of the intervening space necessary to be covered, were the attack real, in order that there may be no misunderstanding as to the direction of the attack? Then require him to halt and await the judgment of the umpires. There can be no question as to the dramatic appearance of a cavalry charge, but it has an element of danger to

the attacked, which may well be omitted. The control of cavalry is better illustrated to a cavalry umpire, by checking it in full career, than by running it over the opposing infantry.

The umpires with the cavalry at Manassas were too few. Perhaps due to inexperience, the work was hard and still unsatisfactory to the extent that all of the ground was not covered. The number of officers for this duty should only be restricted by the extent of the available funds. An officer cannot much better get real experience in real war.

The one fact, that there is no real danger from bullets, detracts, in so much from the value of the experience; and some commanders may be unnecessarily rash and daring. This kind of valor must be controlled by the umpire.

The relief, to a veteran with nerves, after the first shock when the point receives the warning that it is expected to stop, and his heart drops back from its extraordinary position, realizing the futility of its jump, may tend to enthusiasm.

It may be proved that it would save lives in a century of war, were we to mix a few real bullets with the harmless (beyond twenty-five feet) blanks; but all classes are not educated up to this point as yet. We must, probably, go on for a few years really enjoying the hard work incident to the army maneuvers because of the joy of being fearless.

But what lesson could the cavalry get at Manassas? The cavalry at the disposal of the division commanders was so inadequate that one might well imagine one's self at the outbreak of a real war and, of course, on the first line. Each side had, on paper, about a regiment of cavalry, but the troops were skeletons, hardly forty troopers each, while the infantry regiments were generally in full strength.

The officers and men of the cavalry were generally well trained in the special work of outpost and contact duty. They took cover well, and were bold and efficient in gaining knowledge of the enemy's movements, etc.; but their numbers were such that they could offer no real resistance to the advance of the heavy infantry lines. The infantry lost in experience from this very fact.

My final conclusion was that under the conditions of the problems, the attacking force in each case should necessarily win; but could one side have replaced an infantry regiment by a full war-strength regiment of cavalry, the preponderance of cavalry must have insured its victory.

A RESERVE FORCE.

By Captain ROBERT D. WALSH, Ninth Cavalry.

ALL governments recognize the advantage of limiting the number of soldiers serving with their regular armies to the minimum commensurate with the public safety. With a small army the expense of maintenance is less, and the number of producers, and consequently the wealth of the country, is greater than they are with a large army. From this arises the importance attached to reserve troops, who, well trained and disciplined, are producers in peace, and in war, soldiers. In our service, the cavalry and field artillery are more closely interested in this subject than the other branches, for it may be said that the number of these troops in the National Guard is so small that they would receive little increase from this source in time of war.

Until the declaration of hostilities between Russia and Japan, we might say that only the Atlantic States were subject to invasion, and that the navy would constitute our first line of defense. The showing made by Japan has been so remarkable that she must be classed as a world-power, even if defeat should be her lot in the present struggle: and henceforth we must look to the Pacific as well as to the Atlantic coast as a direction from which we may be menaced. It is true that the Japanese and ourselves are good friends, but even brothers have been known to become estranged, and fifty years hence historians will possibly write that England and the United States were more concerned in the present war than Russia. In any event, to estimate the true strength of our navy we must consider it divided into two parts: the Atlantic and the Pacific fleets. If our navy were as great as that of England, our land forces would occupy a

secondary position. But now, with all other navies practically concentrated and ours divided, the army must be considered our main reliance to defeat invasion.

In view of recent treaties between great nations, a word may be permitted on arbitration which is now prominently advanced as a preventive of war. Arbitration is as old as justice and has been employed at all periods of the world's history. While in Judea Pompey appointed a commission to settle disputes between the Armenians and Parthians. Even during the time when all men were soldiers, in 1294, Pope Boniface VIII. acted as arbiter between the kings of France and England. When President Jefferson first assumed office, he believed it possible "to introduce between nations another umpire than arms," and that the army and navy were unnecessary. He, however, sanctioned the maritime war against Tripoli, and lack of preparation alone prevented hostilities following the attack of the *Leopard* on the *Chesapeake*. At the beginning of Jefferson's first administration, the war with France being at an end, twenty-one vessels belonging to the navy were sold. During his administration it became necessary to establish navy yards, to add sixteen vessels and sixty-nine gun boats to our fleet, to add six thousand men to the army and to increase the personnel of the navy from 1,400 to 5,000. Such was the experience of one of our own Presidents, who held the theory "that wars were unnecessary and that other means could be found by which nations could settle their differences."

Nations are not as prone to plunge into war as formerly. This is not due to a change of sentiment. The deadly nature of warfare, owing to improvements in arms and the machinery to destroy life, the great cost of war and loss of prestige to the conquered, cause nations to think many times before declaring hostilities. These improvements have shortened the period of warfare, and are the strongest possible argument that our first line should be strong enough, at least, to delay the enemy, until our full fighting strength can be developed.

Our present fighting strength, infantry, field artillery and cavalry, may be estimated at 44,000. Deducting the troops

serving in the Philippines and Alaska, the number of troops which could be put in line of battle would not exceed 30,000. This number is not sufficient to meet an invading army, and with our long sea-coast line we could not prevent that army's landing. In these days of modern transportation, transports carrying each two, three and four thousand men, would form part of the enemy's auxiliary fleet. Water transportation is now the quickest means of moving an army with its supplies. If a railroad line across the Atlantic were in the hands of our opponent, it would be subsidiary to transportation in steamships. The Militia must be moved up a notch and constitute our first line of defense, or that line must be strengthened in some other way. The expedient of filling our Regular companies to the maximum when war is declared simply weakens them at a time when their full strength is most required.

All countries in which large standing armies are maintained increase the number of men available for immediate duty by retaining the soldier in service after his time of active duty has expired. In the German empire a soldier serves first with the colors, then with the reserve, and then with the landwehr or second reserve. All countries which recruit their armies by conscription have adopted a similar system. In the United States no attention is paid to a soldier after his enlistment has expired, though every year large numbers of men are discharged who, if organized, would constitute an efficient force. Soldiers who do not reenlist would often be willing to do so at the prospect of active service, and, if their addresses were known, it would be feasible to organize them into companies and regiments. The argument may be advanced that these men will be found serving with regiments of Militia or Volunteers upon the outbreak of war, and that they will be of great utility in these regiments. I think it will be found that only a small proportion served in the Spanish War. They believe that their knowledge of military life and former service entitle them to some consideration in the appointment of commissioned and the higher noncommissioned officers. Such consideration is seldom shown them.

To illustrate more clearly: Private Lewis Baldwin, Com-

pany K, First Infantry, is discharged by expiration of his term of enlistment. He does not reënlist, but would be glad to do so in the event of war. He selects Philadelphia as his place of residence, goes before the recruiting officer in that city and takes an oath of enlistment to serve in the Reserves for the period of three years. He thereby pledges himself in case of war to serve as a soldier the remainder of his enlistment or be considered a deserter. He is then assigned to a company and regiment, and reports at the headquarters of his organization. He is to report in person or by letter at stated times and to notify his captain of any change in his address. Should his new residence be distant from his former one, he may be transferred to another regiment, or his orders may be complied with by his reporting on the outbreak of hostilities at any one of certain designated places—the object being that the individual may not be hampered in any way in his civil life, and that when needed the Government may have a trained soldier ready to enter the ranks.

As a recompense Private Baldwin is annually paid $20. In addition, the headquarters of the regiment is fitted up as a regimental club, with reading rooms and a gymnasium. A discharged soldier of good character joining a Reserve regiment would find himself among friends. Men in search of employment would be assisted by their comrades, and the chances of a discharged soldier's making a success in civil life would be increased. That there is a tendency among discharged soldiers to band together, is shown in the formation of the posts of the Grand Army, of the societies of the Spanish-American War, and in the formation of the garrisons of the Army and Navy Union. With the Government's assistance these Reserves should become efficient reserve organizations, and the total cost would be about equal to what economical Switzerland pays one of her militiamen. To ensure success the service should be made attractive, and the Government should render the assistance required to make it so.

The field officers and one-half of the captains should be detailed from the regular service. The latter from among the lieutenants, and the field officers from grades above that

rank. By detailing half the captains from the regular forces they would bring to a reserve regiment the newest methods and customs of the service. The detail of this number of officers from the regular forces may properly be objected to as reducing still further the number of officers for service with their proper regiments. This is a valid objection, but one which cannot be considered in the present article. It may, however, be suggested that the depletion of regular regiments of officers for various staff and other duties, for which in our service there appears to be no remedy, might be compensated for by the appointment of a sub-lieutenant in each organization to hold his commission for a limited period and to be appointed from the enlisted men of the regiment. All remaining officers of the reserve regiments should be selected from among its members, there being a limit as to the time they should hold their commissions—this with a view to retaining comparatively young men as company officers. Noncommissioned officers should also be appointed. In fact, a reserve regiment should be so prepared that it would be ready to move with only short notice.

In time of peace one of the field officers should be in command of the regiment and in charge of its headquarters. He should be assisted by a sufficient enlisted force to perform the clerical work and properly care for the headquarters, gymnasium and reading rooms

Twenty-six years may be taken as the average age at date of discharge of soldiers serving their first enlistment, and twenty thousand of these men are discharged yearly. Only those of good character should be permitted to serve in the reserve. The average soldier should be capable of rendering service up to forty years of age. Perhaps the greater portion of discharged men reside permanently in cities, but the regimental headquarters while situated in a city, should embrace the surrounding territory, or in some cases the entire State.

It is not proposed to enter into full details as to the formation of these regiments. Whether they should be issued arms and uniforms, take part in maneuvers, what service they should render annually, what should be the qualifica-

tions of officers, etc., etc., can only be determined by experience. It is certain that discharged soldiers now form clubs for social amusement and mutual benefit, and it is believed that this tendency, properly fostered by the National Government, would result in the formation of a well drilled and efficient reserve. It is, however, useless for the Government to ask service without giving in return a recompense.

As to the number who would enroll themselves, perhaps one in five would do so, perhaps one in seven. It is believed that 30,000 would be about the ordinary number, which would give a force equal to that our Regular Army could put in the field. An army of 60,000 would still be small numerically to oppose an invading army, but it would be better than 30,000.

REMOUNTS.

A PLAN FOR PROVIDING SUITABLE HORSES FOR CAVALRY AND ARTILLERY PURPOSES.

By Major LOYD S. McCORMICK, Seventh Cavalry.

THIS important subject has for a number of years engaged the attention of all European nations. In most of them the fact is recognized that some inducement is necessary in order to keep the supply up to the standard, and equal to the demand. Different nations have adopted different methods in order to accomplish these results; but all the methods have in view a means by which the government may readily supply itself with the animals needed under the ordinary conditions of peace, and also equip itself in this respect, when preparing for war, more promptly and with more serviceable horses than it could, if their breeding should be left to the accidental results which follow the course adopted by the great majority of farmers, from whom nearly all horses must be originally obtained, unless the government should raise its own horses.

That the mounted branches of the European armies have greatly profited by this encouragement on the part of their governments, is well established by the reports of officers who have had a chance to see the public horses of these nations and observe their performances in the field. With such proofs in front of us, it seems strange that the United States have never made any effort to encourage the breeding of an animal suitable for either cavalry or artillery purposes. As to original cost the horse is far ahead of any item of individual equipment; and when his daily expense is added to that original cost, there can be no question as to his being by far the most expensive article of our equipment, except, of course, heavy guns. Why then should the supply be given

so little consideration, when by a moderate amount of encouragement we should have in the United States the finest army horse in the world? It isn't that he is considered an unimportant factor in our army, for nothing is written or said to substantiate that idea.

Without cavalry and artillery able to live under the hardest and most wearing service, an army is almost helpless when not besieged; and that is not the condition to be considered. Of two opposing armies, equal in all other respects, the one with the best cavalry and artillery will, in all probability, win the battle; and in the pursuit, will be able still further to cripple the one with weak and broken down horses. A comparatively small mounted force can, then, more than repay its government for any reasonable effort that was made to put it on the best footing.

This brings us to a consideration of what is necessary in a good cavalry horse; for this paper will deal more directly with that animal. The description given in paragraph 1142 of the Army Regulations (1901) is that of an almost perfect horse; and if such horses could be readily supplied under existing conditions, nothing more could be desired. When we look for such horses in our ranks they are so scarce that the sample is lost sight of, and we have to satisfy ourselves with an indifferent animal, and wonder why specifications are made when the material supplied under them so rarely follows more than the most salient requirements, and frequently does no more than touch even them. What officer ever joined a troop without a lasting search for even a fairly good mount? I think every cavalry officer has had the experience of serving with a troop in which he could not find a horse with anything but the most back-breaking gaits. The horse probably stumbles once or twice in every hundred yards, and has no ambition not induced by an application of the spurs. And as for appearance, the officer is glad if his mounted duty leads him into seclusion.

I admit that a great many of the traits found in cavalry horses are forced on the animals by their riders, and that it is rare that a well mannered horse is found in the ranks. This, of course, will continue to be the case until the officer and soldier, particularly the latter, are instructed to such an extent as to realize that the horse is a willing animal and that his best efforts are secured without excitement or abuse. The presence of manners, even if our horses had them, will not, however, altogether compensate for the natural defects of conformation and action so often found. To assure satisfaction in these respects attention must be given to the breeding, and this can only be productive of good results when such attention is regulated by some well proved system. This phase of the matter will be taken up later.

From the results of the present method of supplying our horses, I think it only a fair conclusion, in which I believe all cavalry officers will agree, that the horse described in paragraph 1142, Army Regulations (1901), will rarely be found among those owned by the government. And the impression grows stronger each year, that such horses are not readily found in the United States. The few that are raised find a ready market among civilians who enjoy riding a good horse and have the means for indulging in that pleasure. And until the supply is perceptibly increased, the army may get all possible satisfaction out of occasionally watching a real saddle animal ridden by its owner.

By saddle animal I do not mean what is known as a gaited saddle horse; although I do believe that if our cavalry horses were bred from fox-trotters, and our officers and men taught how to ride them, we could break all records for distance traveled in the field and for condition of both man and horse during and at the end of a campaign. The fox-trot does not in any way interfere with the regular walk, trot and gallop. It is merely a gait between the fast walk and the pounding trot, at which the horse can continue for almost as many hours as he can at a walk, and cover about one-third more distance. It is easy for the horse and for the man, and at the end of the day the horse will be comparatively fresh and the rider will not have had every bone in his body pounded until it is sore. He will be fit for something if occasion demands it in the way of guard or night work of any kind. Do not confuse the fox trot with the dog-trot, for they are as distinct as the trot and gallop. The

fox-trot is peculiar to the United States, and a cavalry command mounted on fox-trotters could make its marches of thirty and thirty-five miles every day with less grief to horse and man than we can at present make twenty and twenty-five miles. Any saddle-horse man will confirm this statement. Such an ability would be a supreme advantage to an army. To secure it, however, would take several years' attention—probably ten or fifteen, and the experiment will not readily be made in this country.

There are two phases to the remount question. The only one ever attempted in the United States, so far as I know, dealt simply with such horses as were picked up by whatever system of buying was at the time in practice. In former years, beginning while the Civil War was in progress, the horses were bought by cavalry boards. In recent years they have been bought under the contract system, and a more faulty method could not well be devised—faulty, that is, for the army; but ideal for the contractor. These new horses were shipped to some selected locality and turned loose in immense corrals, to which also were sent sick and broken-down horses from the regiments. We saw some similar corrals during the Spanish War, and the chance for improvement for either the new horse or the broken-down one was as near nil as anything on this earth can well be. Beyond a slim chance at getting a portion of his forage and an occasional drink of water, he gave evidence of the acme of neglect. I once served under an officer who had been in charge of one or more of these corrals during the Civil War. I think they were at City Point. From his description of the means at his disposal for caring for these horses, it is not surprising that thousands of them died; but it is surprising that any of them lived.

A remount system depending solely on depots for recuperation of sick and debilitated horses will never, I believe, render a return for the fence enclosing the grounds. During a fast and hard campaign it might be advisable, if practicable, to ship worn-out horses to the rear to such a place, if a sufficient force of competent veterinarians and nurses were at hand to give intelligent care to every horse; but if the depot corrals we have seen were samples of what are to follow, deliver us from such an empty effort. Under ordinary conditions full recuperation should be provided for in the post, either in each troop or at a central plant. In twenty-seven years' service I have seen only one place provided for the treatment of disabled horses, and that place is the makeshift at Fort Leavenworth. I understand that more complete provision is contemplated. Of course such a plant is needed, but its services will be required, to a great extent, by the horses of weak constitution and unsuitable conformation—classes from which we get so many now, but from which we need get none if more good horses were bred and a different method could be followed in buying. Just as the weak men require almost constant attention in our hospitals, so will these classes of horses monopolize the veterinary plant. No one can claim that there is a sufficient supply of horses suitable for our cavalry. Possibly they could be found if the country were raked from all directions, the contractor eliminated, and the purchase money could go direct to the owner of the horse. But as long as the contractor must make a profit of from forty to fifty dollars on each animal, we need not look for much real improvement, no matter how many remount corrals may be established.

To secure results we must do something to increase the number of suitable horses produced, and after having those that are bought properly trained and gaited for saddle purposes, require from both officers and men sufficient knowledge of how to care for them as to preserve their serviceable qualities as long as possible.

To my mind a remount system should deal only with the question of furnishing and training the new horses that are required from time to time. The first thing to do in this line would be to adopt some system under which the farmer would realize that his pecuniary interests would be advanced by becoming a party to the system. This, I think, could easily be accomplished with a reasonable outlay by the government. Five suitable stallions could be bought for not to exceed $500 each. One hundred suitable mares would cost not more than $250 each. These animals would represent

an expenditure of $27,500. The product each year would be about one hundred colts, one-half of which would be horses, and the other half mares. At the end of four years there would be about fifty stallions old enough to be used for breeding purposes. An arrangement could certainly be made with the government of each State to take one of these stallions and locate him in a section in which the breeding of horses was something of an industry. The stallion would become the property of the State, the only conditions imposed being that he should not be castrated, and that the cost of service should not exceed that of the average stallion in that section—barring track horses of all kinds. This would bring him within the reach of the poorest man owning a mare. Each year thereafter an additional three-year-old stallion would be furnished each State on the same conditions.

In a comparatively few years every State would have a number of high-class stallions from which suitable horses for cavalry and artillery purposes could reasonably be expected; and horses of this class are more generally useful in civil life than any others. To prevent in-breeding, each of these stallions should be changed to a different section of the State every four years, and should not repeat his tour in any one section. In the meantime there would be coming on each year about fifty mare colts. A few of the best could be retained at the home plant to replace any of the older ones that proved to be not good producers. The rest could be sold in the market; or better still, to farmers at a moderate price, on the condition that they be bred each year, as far as possible, to stallions whose origin was from the home plant and of different stock. This particular feature could not easily be continued very many years; but before it would become too complicated, the breeders themselves would protect their increase from the ill effects of in-breeding.

The greatest judgment and care would have to be exercised in buying the stallions and mares with which to make the original start, or failure would be inevitable. Frequently the stallion or mare, about which no adverse criticism can be offered as an individual, proves to be weak as a producer;

and for this reason, no animal of either sex should be bought until a sufficient number of matured colts were examined and tested to indicate beyond reasonable doubt that future progeny would possess the qualities which have been proved to be most desirable. Such indication cannot be determined from the appearance, conformation or qualities of the sire or dam, but must be obtained from testing their get after maturity. The selection of these animals would therefore not be a duty very quickly performed, for it would be no small task to find, say twenty matured horses from a certain sire, and examine and test them to such an extent as their owners would permit. Of course the pedigree of each animal bought must be carefully verified and recorded, so that cross-breeding might be followed in the public stable. No one strain should predominate in any two of the stallions, and as many good strains as possible should be found among the mares.

Connected with the home plant, and in time with each State plant, could well be started the real remount depot, the officer in charge being authorized to buy any horse presented that filled all requirements for the cavalry or artillery. He would know the number required at all times, and until that number was on hand he should not be handicapped in any way. His judgment alone, with that of a veterinarian, if he needed one, should govern, and the tests to which his judgment would soon be put should determine when his detail should cease.

The owner would get the full value of his horse; and the benefits of the system would be distributed among all owners who might have occasion to sell one or more horses. Under our present system the profits do not go to the producer, but to the keen buyer who naturally takes advantage of every influence which tends to force the owner to part with a portion of his most valuable assets. If there is anyone who is entitled to the full value of his fruits, it is the farmer. He frequently is brought to the brink of disaster through sickness, loss of crops, fire, etc.; and under just such conditions he is forced to sell some of his horses. The buyer is always ready to take the horse, but he never fails to

get every cent he can out of the unfortunate circumstances surrounding the seller. If there were such a place as the remount depot outlined above, where the man could go with his horse, and where he would get its full value, the additional money so placed would surely be of greater benefit than if it had accrued to the intermediate man.

The officer in charge of the remount system should also be authorized to hire a suitable number of expert riders to train the horses so collected, instead of turning them loose in a corral to hustle for themselves until they are shipped to a command. Such riders can be secured among growing boys and young men who fully understand the practical work. Kentucky and western Missouri are full of such material. The horses should be ridden every day and trained to obey all the aids without excitement or resistance; and also accustomed to equipment of the arm for which they are intended, so that when received by troops they would be acquainted with every sight and sound by which they were to be surrounded. As soon as proper provision can be made after the first year, the officer in charge should be authorized to buy colts that have reached an age at which their qualities are shown; and their training should be begun at once and continued until they are ready to be sent to a command.

With any sort of care and attention the most thoroughly trained and obedient horses would as a rule come from this supply. The colt is easily controlled and if taught obedience from almost the beginning of his life, he never thinks of resisting.

Nearly every foreign country imports horses for the public service every year. At present the United States gets a comparatively small portion of this trade during times of peace. We could have nearly all of it, and it would amount to no small figure. Year by year the countries of Europe, excepting Russia, are more restricted in grazing lands, and necessarily have to look to those countries with extensive lands of this kind for a supply of the animals for whose proper increase wide ranges of pasture are required. South America is being drawn upon to a considerable extent; and even wild, unbroken horses are imported to supply the demand. During the progress of a war this demand is largely increased, and we should have almost a monopoly of the trade. I have seen it stated that during the Boer War England bought about 125,000 horses in this country. Assuming fifty dollars as an average price paid, and it was probably greater, it is seen that more than six million dollars were distributed among the raisers of horses in this country. This is no indifferent amount of cash to receive in return for the comparatively small outlay required. To secure so many horses England had to take almost anything that was presented, with the result that the commands in South Africa were not well pleased with their mounts. There were several side-issues, connected with this large sale, that increased the amount of money brought to this country. It required the employment of a large number of men, the purchase of forage by the train-load, and the transportation lines of the West and Middle West reaped a rich harvest. It is extremely doubtful if a repetition of those conditions would result in so much money being again expended in the United States. Instead, it would probably go to South America and Australia.

We already control the mule market for the world; and there is no good reason why we should not do the same with horses.

A PROPOSED MODIFICATION OF THE PRESENT DETAIL SYSTEM.

By Lieutenant CONSUELO A. SEOANE, Third Cavalry.

EVER since the detail system for the staff departments became a law, we have with some sorrow noted the enthusiastic and consistent manner in which articles by various writers have appeared, particularly in the lay press, condemning the system for the Ordnance Department. We are called upon to notice repeatedly the number of existing vacancies and the improbability of ever filling them. Articles are brought out claiming that the Secretary of War has been won over into admitting that some other system will have to be devised for this department; again we are asked to believe that the Chief of Staff is to recommend against the system. Accepting the above as a statement of the facts, let us inquire and examine into the foundation of this state of affairs. Why does the present number of vacancies exist in the Ordnance Department? Enemies of the detail system say that officers of the line will not prepare themselves for such a technical branch, when, after a course of four years, they shall have to return to the line; and, as a consequence to such a condition, the supply of officers anxious for service in the Ordnance does not equal the demand. One cannot accept such an explanation without adding to it an exposition of the surrounding features and circumstances, and, accordingly, the reply to the interrogation above, would be somewhat as follows: Officers of the line do not prepare themselves for service in this branch because they recognize that it is next to impossible to pass the required examination for entrance; they see officers from West Point who were graduated sufficiently high from that institution to be assigned to the artillery, fail before an ordnance board; so,

instead of seeking admission, the other branches stand aghast and ask themselves, "What do they want?" There is an element of uncertainty and suspense lest the work of preparation may go for naught in almost every examination; and when such examination is surrounded by almost insurmountable conditions, few officers can voluntarily submit themselves to the ordeal.

To an investigating genius there is a vast field open for development from which we could receive much enlightenment; it has never been covered thoroughly. I refer to the psychological aspects of examinations. If a writer of strong idiomatic English, gifted with wit, common sense and the power of exposing the depths of human nature were to undertake this subject and analyze it as a Darwin, a Bacon or a Huxley would have done, we are sure that one of the conclusions he would arrive at would be, that the average person appears before a board of examiners with somewhat of the feeling that historians tell us the two young soldiers had who were summoned before the great Elector of Brandenburg, Frederick William of Hohenzollern. Strong suspicion attached the crime of murder to these young men, and as all other means had failed, in order to determine their guilt they were ordered amidst great ceremony and pomp to throw dice before the great Elector. This was called "an appeal to divine intervention," and the loser at the hazard was to be executed for murder. The first soldier threw two sixes, the highest score possible. On seeing this, the second soldier (Alfred was his name) fell on his knees and prayed to God for protection, saying he was guiltless. Then he threw the dice with such force that one broke in two pieces—one piece turning up an ace, the other a six; the whole die showed a six. This gave him a total of thirteen, and the assembly, filled with astonishment at the wonder, declared Alfred a free man.

Alfred's feeling before he threw the dice is the feeling of a person with an inclination to serve in the Ordnance to-day. He looks at the list of officers who have failed, and if that is not sufficient to deter him, he appears before the board hoping that some divine intervention may pull him through.

A man must be possessed of more than ordinary hope who will resign himself to a year or two of study with only an Alfred's chance of winning. There are few such men.

Again, those whose sympathies are against the detail system may show that the ordeal of examination has been surmounted by officers representing the three arms, and that the above deduction is not along the lines of correct and truthful investigation; but as logical conclusions can be drawn from false principles, and as error can be propagated by false premises, so champions of either side can go on to the end discussing the merits of the system of details.

Major Black, of the Corps of Engineers, believes that, as a means of proving the efficiency of an officer, an examination is a failure. I believe so too, and I purpose to suggest a different plan for selecting efficient officers for the staff corps.

The detail system must stand as it is enacted or go down all together, for if one department is to be permitted to set it aside, it will not be easy to draw the line where others shall stop. There was a time within the memory of young men when the Signal Corps was confronted with the great difficulty of demonstrating that it formed a part of the army, no less a person than the Secretary of War maintaining that the corps formed no part of the national defense. To-day, for entrance into that corps, they also would fix as a standard a prohibitive examination. Other departments will follow in line, until finally there will be no staff department whose threshold can be crossed by an officer of the line; and the detail system will be at an end.

Without further argument, here is the plan I would suggest: Let there be selected each year, or from time to time by any method except examination, such number of officers as may be required to fill the vacancies existing or to occur within a year in the Ordnance Department and let these officers be sent to one of the service schools for a course of instruction for one year. Let the school be the Artillery School or the Engineer School of Application or any other school deemed the most suitable; and if the present course at the selected school be regarded as insufficient for the preparation of an officer for detail to the Ordnance, let there be such addition made to the course as may satisfy this department; but let the course be not longer than a year, and upon graduation let the officer be detailed for a tour of four years with this department.

If this system of *quid pro quo* be substituted for the fruitless examination system of to-day, we shall have accomplished the elimination of the false quantity from the equation; we shall have set aright a system correct in inception, deflected in execution. Under such a system there would be no dearth of officers applying for service with this department, and no further reason for affirming that the detail system is a failure.

THE USE OF THE BICYCLE IN THE ARMY.

By Lieutenant FREEBORN P. HOLCOMB, Fourteenth Cavalry.

THIS subject has been discussed a great deal during late years, but it seems to have been handled by men who have had very little experience in bicycling, and less in the army. One writer will say that the wheel is absolutely worthless for hard service over a rough country; and another, that it can be used to advantage under any conditions. The opinions differ so much, that it is hard to draw any conclusions, pro or con. I will endeavor to show, by actual experience, that the bicycle can be used in a rough country, over almost impassable roads and under the most unfavorable circumstances, and still be more useful in mapping, messenger service and reconnaissance than the horse.

In September, 1896, while serving as a private in Troop B, Eighth U. S. Cavalry, I was detailed with seven other enlisted men, on a reconnaissance and mapping expedition (using bicycles) with Captain De Rosey C. Cabell, First Cavalry (then first lieutenant Eighth Cavalry). The regiment was to go on a practice march from its station, Fort Meade, S. D., to Morecroft, Wyoming, and the scheme was for the bicycle detachment to precede it one day, make a map of the country, lay out the camps, and arrange for fuel and forage for the troops. As I now remember, the orders were to send a messenger back to regimental headquarters each day with a copy of our map, showing the location of their next camp, and a message about the fuel and forage. Our tentage and rations were carried in a light escort-wagon drawn by four horses. Each man was equipped with one blanket, canteen, cartridge belt, pistol, and carried cooked rations for one day in a haversack. The regulation blue uniform was worn.

The bicycle detachment left Fort Meade one day ahead of the regiment. The first day we traveled and mapped thirty miles, camping three miles beyond Spearfish, S. D. The roads were in good condition, and we made the thirty miles in about four hours. The next morning two members of the detachment were sent back to meet the regiment and deliver the map and message. At the same time the remainder of the detachment went on. That day we made thirty-one miles and camped at Sundance, Wyoming. The two messengers joined us that evening, having ridden seventy-one miles, the roads being in good condition. That night it rained and our troubles began, as a wheel is not of much use on a muddy gumbo road. The next morning another man and myself were detailed to take the message back to regimental headquarters. We had twenty miles to ride over the worst possible roads. It was still raining when we started. Our road was mostly uphill, and the wind was blowing a gale in our faces. Could the conditions have been worse? In some places it was impossible to push our wheels in the road, and we rode the greater part of the way on the side-hills. We arrived at Beulah, Wyoming, where the regiment was to camp, in four hours, the distance being twenty miles. Upon arriving at Beulah, we found that the regiment was not there, and, as our orders were to deliver our message at that place, we waited. The regiment did not arrive until late the next day, having been delayed by the rain.

After delivering our message, we started back to join our detachment. The rain in the meantime had stopped, and the roads were fairly good. When about half-way back my companion's wheel broke down and I had to go on alone. Upon arriving at Sundance, where I had left the detachment, I found that they had left early that morning, and there was nothing else for me to do but to go ahead. Shortly after leaving Sundance, I met two of our men riding back with the daily message, and they told me that the detachment had camped about twenty-five miles further on. The road was very good, and I joined them that night, having ridden forty-five miles that day.

The next day we rode into Morecroft, thirteen miles, to await the arrival of the regiment. My cyclometer had registered 139 miles since leaving Ft. Meade, four days before. The regiment arrived four days later and went into camp. After remaining in camp one day, the First Squadron was ordered to march to Devil's Tower, sixty-eight miles from Morecroft, and we were ordered to proceed with them to make the map. This entire trip was over the mountains. The roads were so bad that we left them altogether, and took the bridle-paths. We made the trip and return in three days, mapping the roads or rather the paths, as we went. The squadron took one day longer. The morning after the return of the squadron, the regiment left for home. We were not required to send back messengers on the return trip, and could travel as fast as we pleased. The detachment left as the regiment was forming, and went into camp about noon, at Sundance, a distance of thirty-eight miles. Leaving the latter place the next morning, we arrived at Fort Meade about 5 o'clock that evening, having ridden sixty-eight miles that day. The regiment arrived five days later. The detachment had ridden 396 miles, had been absent ten days and had done all the work required of it under the most unfavorable circumstances. All the distances mentioned above were accurately measured with cyclometers.

This trip certainly shows some of the possibilities of the bicycle. Under favorable circumstances, the average man, with a little training, can travel from thirty to fifty miles a day, seven days in the week, and map the country as he goes. At the end of his journey, he will have traveled farther, have his distances more accurate, and be in better physical condition than a man who attempts the same, or a much less task, on a horse. Especially in the presence of an enemy, the wheel would be useful in making a reconnaissance, as it runs almost noiselessly. Should the wheelman come upon a patrol or detachment of the enemy, he can hide himself more readily than if he had a horse. I do not by any means advocate the mounting of cavalry on bicycles,

but I do say that the wheel is superior to the horse for some kinds of work, under favorable conditions.

With roads such as we have in this country, a bicycle corps, for reconnaissance, map-making, and messenger service, would be a great addition to our army. When the roads are such that the wheelmen cannot operate, the wheels can be put in wagons, and the men mounted on the extra horses, as the wheels will more than pay for the trouble, by one or two days' work in a week. The great advantage of mapping with a bicycle is, that the distances are accurate,—much more so than timing a horse on the road. Should the horse shy or jump at any object, distance is either lost or gained; but the wheel goes right ahead, and its cyclometer registers the distance to a foot. Every cavalryman knows how hard it is to get a horse to trot alone, at a gait of eight miles an hour. To map with any degree of accuracy, with a horse, it must be done at a walk. Then the mapper can only travel four miles an hour, if he is lucky enough to have a horse which will travel at that rate. This is another disadvantage, while with the wheel he can go twenty miles an hour as well as two, and then have his map more accurate.

The popular idea of a wheel for hard rough service, is that it must be a heavy one. On the trip which I have cited in this paper, I used a twenty-pound "Outing" machine, with light racing tires, and never had a breakdown of any kind. However, I would not recommend such a machine for general service, substituting a twenty-five or thirty-pound wheel with heavy cactus-proof tires. In all experiments with bicycles, one of the greatest drawbacks has been the chain's getting out of order, and clogging with mud and sand. This difficulty has been entirely overcome, however, by the adoption of the chainless machine.

In connection with the use of the bicycle in actual service, Captain Carl Reichmann, Seventeenth United States Infantry, military attaché with the Boer army in the field, says: "In the transmission of intelligence, the bicycle played a prominent part. The cyclists did not confine themselves to the roads on which they had the right of way; they made short cuts by following cattle paths, and even rode across

the prairie. During the operations in the Free States in March and April, the number of cyclist dispatch riders was considerable, and they were numerous in the operations east of Pretoria. They could be found at every general's headquarters, and General Botha usually had two or three cyclists at his disposal, in addition to several mounted orderlies. The cyclists did not encumber themselves or their wheels with any special equipment, were dressed like ordinary cyclists (knee breeches and long stockings), and sometimes carried a revolver."

Captain S. L'H. Slocum, Eighth United States Cavalry, who was military attaché with the British army at the time says: "Only a few bicycles were used by the army. They are one of the available and perfected means of rapidly and cheaply transporting the soldier, and bicycles should, I think, therefore form an integral factor in every army. In a country where the roads are generally excellent, as in England and on the Continent, I see no possible reason why a large bicycle corps should not always be well to the front, and in conjunction with a large body of cavalry, render most valuable service."

The following are extracts from the reports of the military attachés to the different European countries, in connection with this subject:

Germany: "It is also significant that the Germans have for the last two years, made good use of cyclists. Those of each army were organized into a company of three officers and one hundred and fifty men, taken from different organizations."

Italy: "On account of the good results obtained at the maneuvers, three new bicycle companies, each having a captain and four lieutenants, will be organized."

France: "Two new bicycle companies are to be organized in addition to the two existing ones. They are to be one hundred and fifty men each."

Russia: "On January 19, 1900, an order was issued fixing the distribution of bicycles. Fortresses of the first, second and third classes, infantry battalions, infantry regiments, artillery companies and detachments of telegraphists, are all given bicycles. The type of the bicycle is left to the discretion of the local higher military authorities, the rigid type, however, being retained, as the folding bicycle has proven unsatisfactory."

Switzerland: "Bicycles were much used by patrols and scouts, and for messenger service in the place of cavalry, which is expensive to maintain in Switzerland. The roads are generally good, and favorable for cyclists. In the route marches, a cyclist marches with the captain, and two or more with the regimental or battalion commanders."

If all European countries can experiment so extensively with bicycles, why cannot the United States? Certainly what we have heard of the excellent services rendered in South Africa by bicyclists, both on the British and the Boer sides, is in favor of the adoption of a bicycle corps in our own army.

One of the greatest drawbacks in the experiments with military cycling, has been the question of equipment. In most cases, the soldier has been required to carry almost the same equipment as a cavalryman. This, of course, impedes his progress. It is unreasonable to expect the cyclist to perform the duties of a cavalryman. He should have his own distinct duties, and should be properly equipped to perform them. In time of war, the cyclist should carry only a large caliber pistol, mapping outfit, and should "rustle" for his rations and a place to sleep. In this way, efficient service can be obtained, but the loading down of the cyclist, and the making almost a pack-mule of him, will never be a success. Every army should have a corps of men, skilled in map-making, and reconnaissance work, and trained in the use of the wheel, as the cavalryman is trained in the use of horses. Cut the equipment down to almost nothing. There is about as much use for a military cyclist to carry a rifle or carbine and a heavy ammunition belt, as there is for a sailor to wear spurs. He must be taught to rely only on a pistol and a clean pair of wheels, for his own safety. He must be taught to disable his machine in case of capture, so that it will be of no use to the enemy.

There should be a school at Fort Riley, Kansas, for a bi-

cycle corps. This corps should consist of a small number of men, picked for the purpose, and commanded by an officer, or officers, skilled in the use of the wheel and in map-making. These men should not be required to drill, but instead, they should have a thorough course of instruction in map-making and map-reading, reconnaissance, and the mechanism of a bicycle. Each man should be taught the simple repairs of tires, and other parts of his machine, which he might be required to make on the road. He should be able to take his wheel apart, and to adjust the bearings, etc., without damage to the threads. This would be useful in caring for the machine after a trip through mud and rain, as no bearings can be made mud-proof. All this instruction would be a matter of a short time, and after a thorough course, a number of men could be turned out who could map at the rate of thirty miles a day (on good roads), who understood the care of their machines, and who had learned to "rustle" for themselves in the field. This detachment should be attached to a troop (or troops) of cavalry, and not required to do any post duty. As soon as the course of instruction was completed, they should be sent to different posts, and be required to map the country in the vicinity of each. This would not only keep the men in practice for mapping, but also keep them in condition for long rides. They should all be sent to the place of the summer maneuvers, and be required to put their work into practical use. After one or two trials at the maneuvers, they would show what they could do, and their work would be excellent, provided they had received the proper course of instruction.

As to the make and style of the machine, equipment and uniform, I will leave it to some one else to suggest. However, I will say, the simpler the better. If this scheme should ever be adopted in our army, it will be found to be an inexpensive experiment.

SUGGESTIONS TO YOUNG OFFICERS.

[EXTRACTS FROM REMARKS MADE BY GENERAL BELL TO STUDENT OFFICERS OF THE GENERAL SERVICE AND STAFF COLLEGE AT THE OPENING EXERCISES ON SEPTEMBER 14, 1903.]

TO those who have been careful observers of the recent trend of progress in our army, there need hardly be pointed out the value of the opportunity which is now afforded you gentlemen. It is my conviction that few incidents connected with an officer's career can lead to greater credit upon his record than graduation with distinction at this service school. It becomes a stepping stone to service at the War College, or on the General Staff, besides leading to possible selection for important duties which may afford opportunity for achieving additional distinction.

A stage in the existence of our army has now arrived when no officer need expect to achieve any considerable distinction without acquiring the reputation of being a zealous practical student of his profession, and industrious and conscientious in devotion to his duty.

The course of instruction you are about to enter upon consists of two kinds—namely, study of theory, with recitations, and outdoor practice in the field. The former is sedentary; the latter involves some physical exertion. They sometimes come at different seasons of the year, and sometimes together. When engaged in the former kind only, it is essential that you take necessary exercise. If you neglect to do so it will not be long before your physical condition will be such that you cannot study properly. You may have sufficient will-power to force yourself to go over your lessons, but you will find it impossible to concentrate your attention or fix the subject-matter of lessons on the mind.

A most important part of an officer's self-education is the cultivation of habits of accurate observation, of careful discrimination in the reading of instructions and orders, and of thoroughness and accuracy in the execution of them. The art of accuracy and thoroughness depends much upon accuracy of thought and diction. One cannot talk or write clearly or definitely without thinking clearly and definitely. Ability to do this can be cultivated only by constant practice. Nothing assists so much in acquiring these qualities as a habit of giving careful study and consideration to the transaction of ordinary routine administrative work. The instructors in this institution are therefore required to make every endeavor to inculcate habits of careful observation and accurate thinking, to the end that student officers may acquire and foster habits of accuracy in the interpretation of orders and in complete and thorough compliance with same.

Officers must expect to be judged by such habits of precision as they exhibit in understanding and complying with directions and orders received during the course of their instruction and every-day duty.

* * * * *

Nothing is so calculated to create a favorable impression of an officer's worth, reliability and usefulness as the amount of pains, thoroughness and system observable in his manner of performing his simple every-day work. These qualities are particularly liable to be taken cognizance of by superior officers when considering or examining reports, indorsements, accounts, proceedings of boards, records of courts-martial, correspondence, essays, etc., etc. An officer who submits a carelessly written, incomplete document, or an indorsement which clearly shows he has taken no interest in, and made no careful study or investigation of the subject dealt with, is sure to create a more or less unfavorable impression upon those who read it. On the contrary, one who has the habit of making clear, brief, pointed statements of all the facts necessary to a complete understanding of the subject he treats, who leaves nothing uncovered in his presentations, who evidently gives careful study and consideration to clearness and brevity of statement, is bound to create a favorable impression of his ability and zeal.

* * * * *

Nothing is more indicative of habits of precision and care than papers which an officer has produced, in which efforts at neatness are evident. In this regard no half-way measures should be employed. A slovenly indorsement, written on paper with ragged edges, pasted on askew, with the lines of writing running in every direction, is indicative of slovenly habits. In preparing indorsements, scissors should always be used to cut the paper, and a ragged or protruding edge should never be allowed to go forward.

* * * * *

In official correspondence, a wise and experienced officer presents all matters in a direct, straightforward, unequivocal, dignified manner. He never deals in subterfuge or sophistry, avoids animadversions upon personal characteristics or motives, eschews sarcasm and ridicule, and shuns the appearance of trying to be keen or smart. He does not try to instruct his superiors in the logic of the circumstances and conditions set forth, or seek to influence their judgment by specious arguments. He recognizes that if a plain, candid, forceful, dignified, dispassionate statement of facts, leaving to his superiors the privilege of drawing self-evident conclusions, is not sufficient to justify his conduct, or establish the correctness of his views, he has a weak case, in which no arguments on his part are going to win with capable superiors. He does not enter into tedious explanations or excuses for sins of omission or commission. If he feels that some explanation is absolutely essential to his own satisfaction, he makes it in as few words as possible.

He realizes that none of us are infallible; that we are all liable to err, and believes that, generally speaking, when one discovers or feels he has not been prompt, has forgotten or failed to attend to a duty, has made a mistake, or has acted inadvisedly or hastily, it is better briefly to acknowledge error by an expression of regret. This course leaves a better impression of an officer's mental caliber and attitude. Nothing conveys so unfavorable an impression of a

person's mentality or disposition as vain and persistent efforts to support an illogical or untenable position by specious arguments or excuses.

* * * * *

A liberal-minded, sensible officer has a habit of attributing to others motives and intentions as praiseworthy as his own. As it takes two to initiate a controversy, he resolves not to be one of them. If a comrade, inspired by illogical resentment, makes the mistake of reflecting upon his motives or conduct, he does not foolishly reply in kind or enter into lengthy and acrimonious rebuttals, but replies with a dispassionate, dignified statement of facts, leaving to these facts his justification, and trusting his superiors to form correct conclusions. Such a course is bound to give him the advantage and create or promote a favorable impression of his character.

Difference of opinion is as natural as difference in the disposition, character, judgment, intellect and ability of members of the human family. There is therefore no occasion for a feeling of irritation, displeasure or discomfort in encountering difference of opinion. There may be ample occasion for regret, but this regret should not be permitted to degenerate into animosity or antagonism.

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So much depends upon the neat and correct appearance of officers, that too much attention cannot be given to neatness of attire.

* * * * *

A good officer is patient, just, and reliable, ambitious to acquire knowledge, conscientious in the performance of duty, possesses a high sense of honor, pride in the service, and confidence in his ability to perform the tasks assigned him. A young officer must acquire a reputation for worth before he can afford to run risks with his military fortune, and even the oldest and most distinguished officers cannot persistently indulge in vices without becoming bankrupt in reputation, in spite of former triumphs and successes.

Excessive drinking and gambling are habits that every officer should avoid. If avoided in youth, they will never

be acquired with age. Both these practices will be prohibited at this school and college, and no officer need expect to indulge to excess in either without receiving correction. Even a moderate indulgence in gambling and drinking will keep one's finances always in a state of pressure. We should endeavor, no matter what our habits, at least to measure our expenses by our pay.

* * * * *

We desire to say a word as to financial ethics. The standard of the army is high, and it is to the interest of every officer to keep it so. Credit is freely extended to officers, on account of connection with the military service, which might be refused the same individual if not so connected. Such credit is an honor to the service and a valuable asset to every officer. It cannot long continue if persistently abused by some officers. Owing to exigencies of the service and unexpected calls for expenditures, which are liable to arise in the careers of all officers, it is, unfortunately, not always possible to avoid debt. But an officer who is conscientious and scrupulous in the discharge of financial obligations can always borrow sufficient money to meet his debts when due, unless he spends his time and salary in extravagant and riotous living.

* * * * *

The custom which is quite universal at this post, of officers saluting each other as they pass, has been observed with much pleasure. It may seem queer that a thing which has always been required by the spirit of orders and regulations should be mentioned as an agreeable custom, but during a very considerable length of service I have never seen this custom so universally observed as it is in this post at the present time. I belonged to the army nearly twenty years before I ever saw two officers salute each other, except when they were not on speaking terms.

The habit of saluting is military, and when officers practice it very generally among themselves soldiers will cease to consider it demeaning, and practice it more cheerfully.

* * * * *

In conclusion, it is desired to invite your attention to a

very practical question. The records of post headquarters from September 1, 1902, to September 1, 1903, have been gone over, and, though the search has not been entirely thorough, it is found that something like 300 communications were returned from higher authority, for correction or further information, and about 360 were returned from post headquarters to officers of the garrison, for similar reasons. Nearly twelve per cent. of all communications passing through the office had to be handled several additional times because officers had not been sufficiently careful or efficient in preparing them in the first place. It was found that nearly one-third of all boards of survey needed correction of some kind. It is not difficult for any one to understand the amount of additional labor and annoyance that was involved in securing corrected information in these cases. Nor is it difficult to imagine how much time and trouble would have been saved had all been careful and accurate in complying with orders in the first place.

It is considered advisable to impress upon all the importance of care and accuracy in paper work, and an effort will be made to do so. Though it is not well to be exacting with officers whose unsatisfactory preparation of papers may reasonably be assigned to excusable ignorance, evident carelessness and indifference should not be tolerated. Perhaps the most fruitful cause of inefficiency in administrative work is the indifference of officers, and their failure to read orders with sufficient care fully to understand and digest their requirements.

THE FOURTH CAVALRY WITH GENERAL LAWTON* IN LUZON.

By Captain GEORGE H. CAMERON, Fourth Cavalry.

AT the outbreak of the war with Spain, April 21, 1898, the officers of the Fourth Cavalry and the stations of its troops were as follows:

OFFICERS.

Colonel, Charles E. Compton.

Lieutenant-Colonel, Louis T. Morris.

Majors, Sanford C. Kellogg, Louis H. Rucker, Jacob A. Augur.

Adjutant, First Lieutenant Cecil Stewart.

Quartermaster, First Lieutenant Geo. H. Cameron.

Troop A—Captain, Alexander Rodgers; first lieutenant, Floyd Harris; second lieutenant, James N. Munro.

Troop B—Captain, James Parker; first lieutenant, vacancy; second lieutenant, William R. Smedberg, jr.

Troop C—Captain, George H. G. Gale; first lieutenant, John M. Neal; second lieutenant, Thos. G. Carson.

Troop D—Captain, Joseph M. Dorst; first lieutenant, George O. Cress; second lieutenant, Hamilton S. Hawkins, jr.

Troop E—Captain, Hugh J. McGrath; first lieutenant, Charles P. Elliott; second lieutenant, LeRoy Eltinge.

Troop F—Captain, Charles A. P. Hatfield; first lieutenant, Robert D. Walsh; second lieutenant, Lucius R. Holbrook.

*Henry Ware Lawton: Transferred as first lieutenant from Twenty-fourth Infantry to Fourth Cavalry January 1, 1871; regimental quartermaster May 1, 1872, to March 20, 1875, and September 1, 1876, to March 20, 1879; captain March 20, 1879, to October 2, 1888; major inspector-general October 2, 1888.

Troop G—Captain, Fred Wheeler; first lieutenant, Robert A. Brown; second lieutenant, James S. Parker.

Troop H—Captain, James B. Erwin; first lieutenant, Thomas H. Slavens; second lieutenant, Frederick T. Arnold.

Troop I—Captain, James Lockett; first lieutenant, James E. Nolan; second lieutenant, Charles T. Boyd.

Troop K—Captain, Harry C. Benson; first lieutenant, Louis C. Scherer; second lieutenant, Samuel McP. Rutherford.

Troop L—Captain, Cunliffe H. Murray; first lieutenant, Samuel G. Jones, jr.; second lieutenant, Edward B. Cassatt.

Troop M—Captain, Wilbur E. Wilder; first lieutenant, John A. Lockwood; second lieutenant, Elmer Lindsley.

Veterinarian, Alexander Plummer.

Stations.—Headquarters, band and Troops A and G, Fort Walla Walla, Wash.; Troops B, C, I and K, Presidio, San Francisco, Cal.; Troops D and H, Fort Yellowstone, Wyo.; Troop E, Vancouver Barracks, Wash.; Troop F, Boise Barracks, Idaho.

The colonel was in active command of the regiment; the lieutenant-colonel, of the squadron at the Presidio, and the second major, of the two troops at headquarters.

The senior major was military attaché to the Minister to France, and the junior was on duty as assistant commandant at the School of Application at Fort Leavenworth, Kansas.

Of the captains and lieutenants, without specifying their different duties, it will be sufficient to state that seventeen were away from the regiment, leaving but twenty for duty with troops.

The outlook of the regiment for active service was most discouraging. Stationed the farthest west of the cavalry regiments, only the unexpected in Cuba would give it a chance at the front. As a natural consequence, those of the officers who were on the spot, secured appointments in the line and staff of the rapidly organizing State Volunteers.

Captains Dorst and Parker, Lieutenants Slavens, Cassatt, Scherer and Smedberg were attached to the volunteers in

May, Captain Wilder and Lieutenant Brown in June, Captain McGrath and Lieutenant Benson in July, and Captain Rodgers in December. Colonel Compton was appointed brigadier-general of volunteers and assigned to the command of the First Brigade, Second Division, Third Army Corps. On May 12th he left for Chickamauga Park, Ga., taking with him as aide the regimental adjutant, Lieutenant Stewart.

In the meantime, under the provisions of G. O. 27, A. G. O., of April 27th, the enlisted strength of troops was increased to one hundred men, and the two skeletonized troops, L and M, were reorganized. To effect this latter step, five experienced men were ordered transferred from each troop. These fifty men were selected by troop commanders with such care and regimental esprit that L and M returned to harness with as efficient a set of noncommissioned officers as could be desired. By the 7th of June, all troops except the two at Yellowstone Park were recruited to full strength. The recruits were mostly from the East, mere boys, adventurous spirits enlisted for the war. They had been obtained under hurry orders, fell far below the average in brains and physique, and chafed under the usual "licking into shape."

Admiral Dewey's victory in Manila Bay and his call for troops to hold the islands changed the whole situation, for, by the shifting of the scene of action, the regiment, from the last, suddenly became the first available, and grumbling gave way to rejoicing.

Concentration of forces, both regular and volunteer, promptly began. Organizations, on arrival in San Francisco, were reported to Major-General Wesley Merritt, U. S. Army, who, as fast as he could obtain transports, dispatched these "expeditionary forces" to Manila, sailing himself with the third expedition, and being succeeded in charge of the concentration by Major-General E. S. Otis, U. S. Volunteers.

The field, staff and band arrived from Walla Walla on June 6th, Troop G from the same station the following day, and Troop E from Vancouver Barracks June 19th, reporting at once at the Presidio.

On June 14th, Troops C, I, K and L were relieved from post duty at the Presidio, were assigned to the First Brig-

ade, Division of the Pacific and Eighth Army Corps, and went into camp to prepare for departure.

Several changes in the officers had now taken place. The regimental quartermaster, Lieutenant Cameron, upon arrival from Walla Walla, was appointed adjutant, and was succeeded as quartermaster by Lieutenant Nolan. Major Kellogg joined and was placed in command of the six troops. Captain Murray and Lieutenant Elliott reported for duty. The latter had been on leave of absence awaiting retirement for disability, but, with customary gameness, succeeded in obtaining permission to join. First Lieutenant E. B. Winans, Jr. (promoted to the regiment and on duty with State troops), was assigned to the vacancy in Troop B and later exchanged to C with Lieutenant Neall. Lieutenant Jones transferred to the Fifth Cavalry with First Lieutenant W. E. Almy, who never joined. Lieutenant Lindsley was promoted out of the regiment and was succeeded by Second Lieutenant Malin Craig. On July 1st Lieutenant Cameron resigned the adjutancy and was succeeded by Lieutenant F. W. Harris.

The problem of mounts for the cavalry was most perplexing. Sea transportation was scarce for even the men, while many believed that the long trip to Manila could not be made by animals. General Anderson had cabled from Hong Kong that Chinese ponies would prove satisfactory, but, needless to say, cavalry officers were loth to be separated from their American horses. Finally, General Otis determined upon an experiment, and ordered the fitting up of a sailing ship, the *Tacoma*, as a horse and mule transport. Lieutenant Cameron and Veterinarian Plummer were placed in charge of the vessel, and to them were turned over ninety horses selected from the youngest and toughest animals of the squadron.

The remaining horses were reluctantly surrendered to the post quartermaster. On the 14th of July the six troops of "foot dragoons" broke camp and marched to the city, embarking on the transport *Peru*, formerly a liner of the Pacific Mail Steamship Company.

The personnel of the sailing squadron follows:

Major Sanford C. Kellogg, commanding; Major Louis H. Rucker, duty; Second Lieutenant Charles T. Boyd, adjutant; Second Lieutenant LeRoy Eltinge, quartermaster. Troop C, Captain G H. G. Gale; Troop E, First Lieutenant Charles P. Elliott; Troop G, Captain Fred Wheeler, Second Lieutenant J. S. Parker; Troop I, Captain James Lockett; Troop K, Second Lieutenant Thos. G. Carson: Troop L, Captain C. H. Murray.

General Otis, with his staff and the two light batteries of the Sixth U. S. Artillery, were also on the *Peru*, while on the *City of Puebla*, which kept company on the voyage, were the headquarters and five companies of the Fourteenth U. S. Infantry. The two ships sailed July 15th, reaching Honolulu July 23d. Here it was learned that there was no protection for American interests. The islands had just been declared territory of the United States, and, as an uprising of the native element might occur, it was decided to await the arrival of the U. S. Cruiser *Philadelphia*, then on the way from San Francisco for the flag raising.

Eleven days elapsed before the voyage was resumed. During the voyage, Captain Murray was appointed Military Secretary to General Otis, Lieutenant Parker falling heir to the command of L Troop. When Manila Bay was reached, on August 21st, and the news was brought aboard that the city had surrendered to our troops eight days before, the chagrin can be readily imagined. On August 22d the six troops were disembarked at Cavite and quartered in the Spanish Marine Barracks just outside of the Arsenal.

About the first report of the situation was to the effect that the Filipino forces that had assisted in the capture of Manila were concentrated around the city, General Merritt having refused permission for them to enter the Walled City after its capitulation. There existed, in consequence, a growing mutual mistrust between the American and Filipino forces. This mistrust was promptly instilled into the officers and men of the squadron, and even fanned into actual enmity by an occurrence of the 24th.

Two privates of the Utah Light Battery, on pass in the town of Cavite, had filled up with the native *vino*. Their

money exhausted and having been refused more liquor, one man proceeded to give a touch of Western America by discharging his revolver through the roof of the "joint." The frightened proprietor rushed into the street and reported the affair to a Filipino lieutenant who was passing with a patrol of six men. Without further investigation the officer lined up his men, and, as the two Americans emerged into the street, ordered a volley. Both men dropped, one dead, the other mortally wounded. The alarm was given and the squadron turned out with a rush. Advancing by troop through parallel streets toward the Filipino headquarters, Troop C was soon fired upon and two men were wounded in the thigh—Privates Thomas E. Langdon and Fredrick Nachbar. In the narrow street, only the point could return the fire, but the four men as they rapidly advanced gave such an exhibition of marksmanship that a Filipino lieutenant soon appeared with a white flag, and was followed by one of Aguinaldo's aides. After a lengthened parley the troops were marched back to barracks and were soon followed by Aguinaldo himself. In reply to a demand for the lieutenant in command of the patrol, Aguinaldo pledged himself to have the offender shot at daybreak of the following day. Several volleys were indeed heard next morning, but from natives it was afterwards learned that there was no victim at the ceremony.

Smarting under this outrage, and restless from inactivity, the squadron was moved on September 9th to the suburb of Paco and quartered in the huge tobacco factory. Here began a five month's tour of duty that undoubtedly tested endurance and discipline more than any period of Philippine service. At first the sentinels of our outposts at the Paco Bridge and on the Singalon Road, walked side by side with Filipino sentinels. Two companies of native troops were quartered in the Bishop's palace and one on the Singalon Road inside of our lines. This absurd state of affairs lasted until October 25th, when, yielding to General Otis's persistent demands, Aguinaldo ordered his troops withdrawn. Outposts were then established at Blockhouses 12 and 13, and on the so-called Battery Hill. As these points

were remote from the barracks, connecting and interior patrols were necessary. In consequence, for over three months the men had consecutively twenty-four hours' outpost, followed by twenty-four hours' patrol, with only twenty-four hours off duty, the last consumed entirely in catching up on sleep. This severe work was aggravated by the conduct of the imbecile Filipino soldiers. Mistaking the determined American policy of conciliation for one of timidity, they jeered our sentinels and in the filthiest language conceivable dared the "coward" outpost to fight. Too much praise cannot be given to our seasoned noncommissioned officers for their successful restraint of impulsive recruits. The latter could not understand orders that required them to swallow insults for which they would fight at home. Although at this time the sick report was not large, the strain and the climate were exhausting the men to such an extent that they sickened rapidly when actual campaigning began.

From the time of arrival, it had been evident that Major Kellogg would be unable actively to command the squadron. He was therefore retired by cable order from Washington on September 23d, Major Rucker assuming command. Lieutenant Elliott's retirement for disability was published in War Department Orders of July 29th, while he was at sea, the notification reaching him two months later. The keen regret with which he relinquished active duty was shared by his devoted comrades.

On October 3d, Lieutenant Eltinge succeeded him in command of Troop E, and on November 11th, an exchange in the command of Troops E and G was ordered, Captain Wheeler returning to his old organization.

In the States, Lieutenant-Colonel Morris, who had been retired at the Presidio on July 22d, was succeeded in command of the regiment by Lieutenant-Colonel Henry Wagner. Major Kellogg's vacancy was filled by Major Charles Morton, assigned to the command of Fort Walla Walla.

On December 5th, the regimental quartermaster, First Lieutenant James E. Nolan, died of pneumonia at the Presidio. His loss was a severe blow to officers and men, for aside from his efficiency and his manly sterling traits,

"Nick" was undoubtedly the most popular man in the regiment. He was succeeded by Lieutenant Slavens. Except those cited above, there were no changes in the troops at home during the year.

Major-General Anderson, U. S. Volunteers, commanding the First Division, had displayed much interest in obtaining a mount for the cavalry. His efforts were continually met with the familiar cry of "expense," but he persisted until, on January 1, 1899, Troops I and K, each received seventy-seven native ponies. These little animals averaged twelve hands and weighed only about 700 pounds, but turned out to be wiry, plucky and easy-gaited. Under a long-legged trooper they certainly presented a droll sight. First Sergeant Balch, of L Troop, who stood six feet three inches, frequently stepped directly over them, and when a drowsy trooper dropped his brush on the other side in grooming, he simply leaned over the pony and picked it up. Saddle-bags actually buried them from view, and the haversack was substituted. Cinchas were shortened about six or eight inches.

Fortunately no bronco training was necessary, and inside of three days mounted squads were scurrying about performing the patrol work. This was a great relief to the men, particularly so, since the troops on the 1st and 2d of January had been moved into the Exposition buildings in Ermita, a full mile further away from their outposts.

On January 12th, Major Rucker divided the six troops into two squadrons; the First, E, I and K, commanded by Captain Wheeler and known as the mounted, and the Second C, G and L, commanded by Captain Gale and known as the dismounted squadron.

Captain Lockett was detailed January 16th on staff duty with the Second Division, and the last available subaltern, Lieutenant Boyd, succeeded to the command of Troop I. Six troops with only six officers!

The first trip of the *Tacoma* turned out disastrously. The condensing plant supplying drinking water was not equal to the demand, and broke down, necessitating a stop at Honolulu, contrary to the original plan. When the ship reached that point, on August 19th, the protocol of the treaty with

Spain was in force. General Merriam, in command of the U. S. forces, ordered the animals, forage and transportation unloaded, both to comply with the terms of the protocol as he interpreted it and to supply the needs of the 3,000 troops in camp at Waikiki. The ship was ordered back to San Francisco to await further instructions.

The feasibility of transporting animals had, nevertheless, been clearly demonstrated, as only four out of 210 died on the trip, the remainder stepping ashore in good condition. The *Tacoma* reached San Francisco October 3d. Lieutenant Cameron having been ordered to West Point for duty, First Lieutenant John O'Shea was placed in charge, with orders to refit, reload and sail again. Extensive repairs and alterations in machinery delayed the departure until December. She picked up at Honolulu the original cargo of animals and transportation. The voyage to Manila consumed sixty-eight days, but the stock was landed in excellent shape, the mules and transportation turned over to the chief quartermaster, and eighty-one of the original ninety horses, assigned on March 3d to Troop E. The first appearance of the army mule and "caballos grandes" in the streets of Manila produced a great sensation among the natives.

During the month of January the aggressiveness of the Filipinos increased steadily. They could be seen digging trenches and throwing up works, which practically placed our forces under siege. Their bravado and insults were now manifestly directed to provoke the first fire from the Americanos who were then to be "rushed into the Bay." In spite of all efforts to prevent it, their scheme succeeded on the night of February 4th, when one of our sentinels on the north line fired upon a Filipino in uniform who deliberately crossed the sentinel's post and refused to answer the challenge.

The shot brought a volley from the Filipino lines with a promptness that would have convinced the most skeptical. The volley was answered, and irregular fire continued most of the night. At the first alarm, given by a gun in the Walled City, the squadron, which had been sleeping under arms and fully dressed, was set to work patrolling the

streets as far as the river to prevent any uprising in the city. Captain Wheeler with his troop (E) was on outpost holding Block Houses 12 and 13. Only a few straggling shots came in from the south during the night, but at daybreak the insurgents, from their intrenchments, began to pepper the outposts and sweep the streets. All along the line subordinate commanders begged to be allowed to attack. At 8 A. M. General Anderson received the coveted permission. The "cowards" were turned loose, sweeping the stampeded insurgents out of their trenches and works, through swamps and paddy fields, into the river or back to the hills. In our immediate front, dense underbrush made progress slower, and also gave confidence to the insurgents, who here put up the most stubborn fight of the day. At length General Ovenshine ordered the troops on our right to make a turning movement, which proved too much for Filipino morale, and away they went. They were steadily driven farther and farther away from the city until about 4 P. M., when our forces were recalled to the line originally designated, *i. e.*, the road from San Pedro Macati to Pasay, on which outposts and supports were promptly stationed. Troops C, E and L, under Major Rucker, participated in this movement, the others continuing the patrol of the interior streets and communications.

The vim and dash of the American troops, coupled with the heavy Filipino losses on all sides, produced a demoralization among the insurgents from which they did not recover for several days. This time was utilized in strengthening our new position with trenches. On the night of February 9th Major Rucker received orders to report with three troops to General MacArthur, beyond Tondo on the north line, as a support to the Twentieth Kansas Volunteers. The distance from Pasay to the point finally designated was only about eleven miles, but before the command, groping about in the inky blackness, succeeded in finding the General and afterwards their place on the firing line, it was 4 o'clock in the morning, and they had marched over twenty miles. C, E and G participated in the battle of Caloocan the following day (the 10th) and returned to the First Division on the 12th.

The Fourth Cavalry seemed to be regarded as seasoned timber in the line of "chasseurs à pied," marching about as general utility and filling gaps when positions of troops were changed.

On the south line, between the 10th and 16th, I, K and L made daily reconnaissances around Parañaque, where the enemy was concentrated in strength. The scouting generally brought on skirmishes, in which several horses were lost, but the men escaped injury until the 15th, when Private Ralph Wintler, K, was severely wounded.

The American preparations to advance northward along the railroad caused the concentration of all available insurgent forces on that side of the city, so that a season of quiet outpost and patrol duty ensued for the Second Squadron. C, G and L remained in front of Pasay until April 8th, officers and men sleeping and messing in the trenches.

In order to supply food for the native population of Manila, it became necessary to open up the Pasig River to the commerce of the lake (Laguna de Bay) districts. American garrisons at the head of the river would also cut the insurgent line of communications between Cavite and Bulacan Provinces. Accordingly early in March an expeditionary brigade under General Loyd Wheaton was organized, consisting of the Twentieth and Twenty-second Infantry, parts of the Oregon and Washington Volunteers, a section of artillery and the First Squadron of our regiment, Troop E being at the time mounted on its American horses. Lieutenant Rutherford joined from the States on March 2d, and assumed command of K, Lieutenant Carson taking up the duties of adjutant of the cavalry command.

Between March 10th and 17th, this brigade engaged and routed the insurgents at Guadalupe Ridge, Pasig, Pateros, Cainta and Taguig. In the advance on Pateros, March 14th, Troop E, which had the advance, was fired upon while crossing a ravine. The troop was quickly dismounted, and, after a lively fight, drove off the enemy, but not without considerable loss. Saddler Samuel Jones was killed, Captain Fred Wheeler was shot through the left hand and Privates Michael Good, George B. Parks, Horace H. Smith and Ernest Wilcox

were wounded. After garrisoning the towns of Pasig, Pateros and Taguig, the brigade was broken up and the squadron resumed patrol work from the Exposition barracks in the city. First Lieutenant Matthew A. Batson, who had been promoted to the regiment vice Elliott, joined Troop E March 20th. Transports sailing from the States carried, in addition to troops, large cargoes of quartermaster's and commissary stores, and some subaltern en route to join his regiment was picked up at San Francisco and detailed in charge. Lieutenant Batson, on the *Ohio*, was the first of many officers of the regiment to serve as transport quartermaster and commissary.

On March 24th the First Squadron was again attached to the Second Division and took part in the advance and engagements resulting in the capture of the insurgent capitol at Malolos. Blacksmith Rankin S. Nebinger (I), Privates Leroy Grundhand (E), and John Cotter (K), were wounded in skirmishes near LaLoma Church on the morning of the 25th. E Troop's fight on the same day well illustrates the obstacles overcome by American troops in Filipino engagements, and, as General MacArthur has termed it "a brilliant affair," it is described more at length.

When General MacArthur, commanding the division, approached the Tulihan River, Major (now Brigadier-General) J. F. Bell reported an insurgent force at the road crossing and requested a reconnoitering patrol. The General ordered Captain Wheeler to dismount half of his troop for the work. The insurgents, after destroying the bridge, had constructed between the wing walls on the north end a strong barricade, topped by an I bridge girder for a head piece, and leaving a horizontal opening just large enough to permit the firing of their Mausers. Further, to guard the crossing, they made two trenches on the river bank, about fifty feet long and about one hundred yards from the barricade on either flank. They also occupied a stone boiler house between the bridge and the western trench. Each trench had a head protection of bamboo and earth. The stream itself was about ninety feet wide with perpendicular banks over twenty feet in height. Against this formidable position, held by one hundred insurgents, Captain Wheeler advanced with Lieutenant Batson and twenty-three troopers. Making good use of cover, the men crawled close to the south bank and opened fire on the west trench, the only part of the position that had been located. The tremendous fire received in reply revealed the whole position. A small detachment was sent to attend to the barricade, and Major Bell hastened back for reinforcements. A few well directed artillery shots (fired under his supervision) stampeded the insurgents, and in spite of their numbers, they fled pell-mell, our men, after fording the stream, being too exhausted to follow up their advantage.

Private William E. Tufts was mortally wounded: First Sergeant Alexander H. Davidson, Quartermaster Sergeant Charles Hiatt, and Private Harry A. Howe, were severely wounded; and Saddler Samuel H. Evans and Private Charles Rice slightly wounded in this encounter; but five dead Filipinos, two of them found behind the barricade itself, and many wounded carried away by their comrades, gave proof of E Troop's deliberate marksmanship. Captain Wheeler was still suffering from his wound of the 14th, and should properly have been on sick report. Major Bell's official report states:

"The small cavalry detachment of six men, firing at the barricade, had made ninety hits on the steel beam, besides those they put through the slot. The fire from the barricade had been entirely silenced for some time. * * * Though the coolness and courage of all the officers and men concerned was most admirable, I was especially impressed with the fearless imperturbability of Captain Wheeler, coolly directing the fire of his men and keeping them under cover. I do not know how a better example of courage could have been shown than that displayed by him as he stood exposed, trying to show a private just where an insurgent was concealed across the river. Just then a bullet struck the private in the head, splattering blood on the Captain as he fell. Quietly giving orders to have the poor fellow removed to the rear, he went on with his business. * * * I heard Lieutenant Batson say to a young soldier, who did not seem to see anything to shoot at, 'Here, if you are not going to use your gun, give it to me, I can see them,' and suiting his action to his words, he took the gun and began

to fire from an erect position with very deliberate aim while the bullets were whistling all around."

After the occupation of Malolos, the squadron was assigned to station in the town and was used for scouting work for nearly a month.

The turn of the dismounted squadron came early in April, when General Lawton was given about 1,500 men, with orders to capture a number of launches and cascos carrying on contraband trade on the Laguna de Bay in the neighborhood of the strongly entrenched town of Santa Cruz. The force was concentrated at San Pedro Macati on the afternoon of April 8th, and at once embarked on cascos towed by three of the American converted gunboats and several small steam launches. Progress up the shallow river at night was difficult and slow, but once the lake was reached the fleet proceeded rapidly. The infantry, consisting of a battalion each from the Fourteenth, the Idahos, North Dakotas, and Washingtons, were safely landed by 4 P. M. of the 9th at Pila, about three miles south of Santa Cruz. They developed strong resistance as soon as they started to move out, causing a loss of so much time in deploying and flanking that they bivouacked for the night, while General Lawton with our squadron and the gunboats continued across the lake and came to anchor directly in front of the city. At 6 o'clock next morning our men waded ashore without difficulty, although the insurgents could be plainly seen only 600 yards away in commanding trenches. They were apparently well disciplined troops, confident of easy work. The Filipino bugle sounded the "Attention" and "Commence Firing" only after our men were completely deployed and advancing. Captain Gale dropped his men, ordered a few platoon volleys, and then began the advance by rushes. When within one hundred yards of the trenches, sharp firing from the southwest showed how well General Lawton's scheme had worked out. The infantry had successfully trapped the garrison, leaving only one avenue of escape over a low flat northward. As the insurgents plunged across the open in disordered flight, they were practically annihilated by the Gatlings and Colts on the gunboats.

One hundred and twenty-three killed and wounded of the enemy were picked up for burial or hospital care; twenty-six dead bodies lay in the trenches, exactly one-half of this number in our immediate front. The total American loss was three killed and five wounded. Private Joe Grabowsky (C) died on the 15th from his wound in the action. Lieutenant Eltinge was slightly wounded in the hand.

Captain Gale, Lieutenants Eltinge and Parker were each recommended by General Lawton for a brevet. First Sergeant Edward T. Balch (L) was recommended for a commission in one of the new volunteer regiments (he was subsequently commissioned) for "advancing alone within thirty yards of the enemy by wading river at Santa Cruz and shooting insurgent officer rallying enemy."

One small gunboat with a Nordenfeldt and a Hotchkiss gun, five steam launches and two cascos were discovered in the river at the town of Pagsanjan, about four miles further up the lake, when the town was seized on the 12th. After much hard work the boats were hauled over a bar at the mouth of the river, the expedition returning April 17th to Manila.

General Lawton was immediately placed in command of another independent column, the object of which was to relieve the pressure in front of General MacArthur, allowing him to advance up the railroad. The main body of the column, consisting of the Twenty-second Infantry, eight companies Third Infantry, eight companies North Dakotas, our dismounted squadron, Hawthorne's two mountain guns, and Scott's platoon of D, Sixth Artillery, assembled at La Loma Church April 22d. The remainder, consisting of eight companies Oregons and eight companies Minnesotas, with Troop I, mounted, assembled a day later at Bocave to bring a part of the train with rations and supplies. The objective was Baliuag, the main column to advance by way of Novaliches, San José, and Norzagaray, at which place the two parts of the column were to unite.

The Second Squadron was detailed as provost guard with Captain Gale as provost-marshal, orders assigning them as rear-guard on the first day's march.

Starting early April 22d, Novaliches was occupied before noon after sharp fighting in capturing successive insurgent positions along the road. The hardest work in the column was with the train of carabao carts. Many heat prostrations occurred. On the next day the road developed into a mere trail and eventually disappeared, the march continuing across country, through marshes and bamboo thickets and across foot-hills and mountain streams. The progress of the carts was hardly appreciable, two whole days being consumed in making the six miles to San José. The carabaos proved of little value in the hilly country. In rice fields where they may frequently submerge their bodies in water and mud, they are able to keep down the tremendous heat oppression from which they suffer. In order not to block the train the men cheerfully pulled and pushed the heavy carts while the animals rested.

At San José, Lieutenant Boyd with I Troop arrived on the afternoon of the 24th, reporting the Bocave column at Norzagaray. They had met with little opposition until they reached the bluffs near the town late on the 23d. Their whole force was deployed, but darkness came on before the town could be gained. Next morning before 7 o'clock, the garrison had been swept out and chased far into the hills. Private William Herr (I) was slightly wounded.

With the Bocave column arrived several mules and escort wagons, off the *Tacoma*, the first home transportation used in campaign in the Philippines.

The 26th of April found the whole column at Norzagaray with advance at Angat. On the day following, General Lawton with his command concentrated at Angat, was put in telegraphic communication with Manila, and received orders to remain where he was. His advance had produced the desired effect. Uncertain as to his objective, the insurgents were obliged to move to offer opposition to a possible flank attack, and General MacArthur pushed forward. Before moving he had scouted his front, K Troop running into a bad hole on the 23d while on reconnaissance with that indefatigable information gleaner, Major Bell. With the object of ascertaining the enemy's strength at Quingua,

the troop set out at 3 A. M. from Malolos, locating at daybreak three trenches covering the main road. To develop the full position, the troop was dismounted and moved in line of skirmishers out into the open in front of the trenches. There was no delay on the part of the enemy. Fierce volleys swept through the men, Corporal John Golumbeski (K) being killed almost at the first fire.

When the insurgents saw his body carried to the rear, they poured in a concentrated fire on this good target, wounding two of the bearers, and then, emboldened, assumed the offensive, advancing on the flanks to surround the troop. Lieutenant Rutherford skillfully withdrew his men, platoon at a time, reached his horses, mounted, and brought off his killed and wounded. Meanwhile, attracted by the heavy firing, a battalion of the Nebraskas and one of the Iowas appeared and engaged the enemy, but the position was not carried until General Hale arrived with the remainder of the Iowas and Nebraskas and four guns of the Utah Battery. Even then the American loss was four killed and thirty-one wounded. Among the killed was that gallant cavalryman, John M. Stotsenburg, captain Sixth Cavalry, who had made a name as colonel of the Nebraska Volunteers. K Troop had two casualties in the second advance. In addition to Corporal Golumbeski, Privates William B. Jackson and William K. Skinner, both of Troop I (two of Major Bell's picked scouts), were killed, and Trumpeter Charles Powers, Privates Michael Cary, John O'Connor, Edward Quinn, and Ralph Wintler, all of K, were wounded. Major Bell, in his report, says: "Lieutenant Rutherford of the Fourth Cavalry, who was in command of Troop K, was cool and collected and handled his men in a most admirable manner. By his coolness and courage he rendered me very great assistance and extricated his troop from a most difficult position. I would recommend that he be given such credit as is due exceptional gallantry under fire."

General Lawton's command, which had been held by the department commander to see which way the enemy would retire, resumed its march on May 1st. The General, while at Angat, selected Troop I for his personal escort. This

troop was with him in all of his subsequent campaigning. The march to Baliuag was made with a column on either side of the Quingua River, the right column developing stiff resistance, with a few casualties in the capture of San Rafael, where camp for the night was made. On the next day, at noon, the scouts of the right column were in possession of Baliuag. There had been skirmishing all the way from San Rafael, the enemy falling back in great numbers and retreating towards San Miguel. Captain Gale, with his squadron and Troop I, was sent out to endeavor to cut them off. After marching rapidly for three miles he encountered what appeared to be the rear-guard of the insurgent force in a strong position. The flanking and routing of the enemy left Captain Gale's command absolutely incapable of proceeding further; twenty-one men had fallen from heat exhaustion, eight of them in a comatose condition. After a sufficient rest, he returned slowly across the country to Baliuag.

Further dispatches from Manila held the command in this town for a week, during which the provost guard was busy distributing to the starving natives the immense stores of rice and sugar captured in the town. Lieutenant Stewart joined from the United States May 10th, and assumed command of Troop I.

Permission to advance announced San Isidro as the next objective. Anticipating serious opposition at Ildefonso, a reconnaissance party, consisting of the picked scouts, supported by a company of infantry, was sent out on May 12th to feel the place. The first news from this party was that it had fought its way into the town and held it. A garrison was promptly sent out. The same program was followed out the next day, resulting in the capture of San Miguel. The city had a garrison estimated at 300 men; nevertheless, a mere handful of scouts dashed across a bridge into the city, under a galling fire, and put the insurgents to flight. The pluck of these men earned for the eleven survivors a recommendation for congressional medals of honor. Three of them were Privates Eli L. Watkins (C), Simon Harris (G), and Peter Quinn (L).

By the 15th the column had come up. After a day's

scouting into the mountains east of this town the march was resumed and San Isidro captured on the 17th, with only slight casualties, Privates Harris and Quinn being again specially commended for bravery.

The body of scouts, selected for coolness, intelligence and frontier experience, had demonstrated their ability in Filipino warfare. Where the ordinary detailed advance-guard would have delayed the column for a deployment, these resolute men brushed resistance aside, or, if it was too strong for them, had the situation well estimated for the commander of the supporting troops upon his arrival. The scouts became a feature of all subsequent operations.

Two columns were concentrated on Gapan, May 18th, as the insurgents were reported in force. The capture proved an easy affair, the squadron returning to San Miguel the same afternoon. At retreat on the 19th, the following telegram was published to all organizations of the command:

"HOT SPRINGS, VA., May 18, 1899.

"*Otis, Manila:*

"Convey to General Lawton and the gallant men of his command, my congratulations upon their successful operations during the past month, resulting in the capture this morning of San Isidro.

"WILLIAM MCKINLEY."

May 21st, the squadron marched back to Baliuag to strengthen the garrison, reported from Manila as in danger of attack. General MacArthur's column had been depleted by the necessity of holding his long line of communications as he advanced up the railroad. He had many sick and worn-out men, and the rainy season was close at hand From Washington came orders to return the State volunteers without delay. In the face of such conditions General Otis decided that a further advance was not feasible, and General Lawton's independent column, after capturing Arayat in General MacArthur's front, was broken up and the troops distributed to stations. The Second Squadron marched across to Malolos and thence proceeded, on May 27th, to Manila by rail. Troop I marched in, arriving the same date.

Troops E and K continued their arduous escort and reconnaissance work with the command along the railroad. On May 23d, while both troops under Major Rucker, accompanied by Major Bell and his scouts, were out on reconnaissance, the enemy was developed in force near the town of Santa Rita. The command was deployed, driving off the enemy after a sharp fight, lasting half an hour, in which Privates Joe Costello, Hans Matheson and Thomas J. Turner, all of K, were wounded. Major Rucker's orders were to avoid an engagement, and he accordingly withdrew to San Fernando as soon as the insurgent fire had been silenced.

Second Lieutenants Ward B. Pershing and Charles S. Haight, recently appointed, reported for duty from the States and were assigned to C and L, respectively.

The department commander appeared always to have on hand a piece of work in which General Lawton's push and pluck were essential. Returned to Manila, he was immediately assigned the task of clearing the Morong Peninsula (Laguna de Bay), where Pio del Pilar had become too aggressive. Our four troops, indulging in dreams of rest, were turned out at 8 o'clock on the evening of June 2d, in severe fighting trim and with cooked rations for one meal. The pumping station was reached at 11 P. M. Here they joined General Hall's brigade, consisting of two battalions Fourth Infantry, one battalion Ninth Infantry, six companies Colorados, eleven companies Oregons, one battalion Wyomings, and Hawthorne's Mountain Battery. General Lawton also controlled another column consisting of a battalion of Twelfth Infantry, the North Dakotas, and eight companies Washingtons, which was to coöperate in an endeavor to bag the enemy. The troops passed a trying night in bivouac. No fires were permitted, and a cold rain fell incessantly. The start for Antipolo was made at 5 o'clock A. M., June 3d, before the command could finish breakfast. The Fourth Cavalry was assigned to the advance. It is a curious fact that as long as the squadron was dismounted, we were generally fortunate enough to draw the leading position (probably because we were called "cavalry"). Yet after our troops were mounted, we spent months doing infantry

work, escorting bull-trains, moving at a gait utterly ruinous to horses.

Fording the Mariquina River, General Hall's column moved across the submerged rice fields of the valley. As soon as the foot hills were reached, skirmishing with the enemy began, and from about 11:00 o'clock until dark a continuous fight was kept up by the advance-guard. Much time was lost in crossing swollen streams. At about 4 o'clock P. M., while laboriously pushing ahead, the advance received a heavy converging fire at a point where the trail ran through a pocket in the hills. The enemy in strong force on three hill-crests had a position from which they were dislodged only after the whole column had been brought up and deployed. During this time our troops had suffered severely. Quartermaster Sergeant Seth Lovell (C) and Quartermaster Sergeant Benjamin Craig (I) were killed. Privates Patrick Branigan (C), Robert E. Miles (C), Melville L. Daly (G), and Maurice Coffield (I), were all severely wounded, all except Coffield dying within the week.

Night was now coming on, and orders to camp on the field left our exhausted men without rations or coffee. Another wretched night ensued. Next morning the advance was resumed with alacrity. An empty stomach talks more directly than patriotism. Little resistance was encountered at Antipolo, entered at 7 A. M., and shortly afterwards the ration train arrived. The rest of the day was mainly eat and then eat.

June 5th the column moved on Morong, to find that the second column had captured the town in fine style some hours before and had inflicted severe loss on the garrison. Upon the breaking up of the brigade after its mission had been accomplished, the Second Squadron was left to garrison Morong, Troop I returning to Manila.

The success of the Santa Cruz trip in cascos furnished the idea of equipping a command to patrol the Laguna de Bay, preventing contraband trade, fishing, and the assembling of insurgent troops in the towns along the lake shore. Three cascos were each fitted up with double tiers of bunks and a cramped kitchen. On June 25th, C, G and L marched

into these floating quarters, and naturally enough were always known thereafter as the "Horse Marines." The gunboat *Napidan* furnished the motive power as well as material assistance to the landing parties with her machine guns.

Lieutenant R. A. Brown reported from the States just in time to join the flotilla.

On the morning of the 26th a landing was made at Muntinlupa. The insurgents held stone parapets, strong trenches, and an old stone prison; but the "marines," with the aid of a few shells from the *Napidan*, routed them into the hills, killing thirteen and having but one casualty, Private William Nolan (C) killed. The fleet then anchored while the *Napidan* cruised about, searching for signs of the enemy, or, as it was called by the men, "lookin' fer a scrap." On the 28th, Captain Gale was obliged to surrender command to Lieutenant Brown. The former's hard work and exposure had brought on typhoid fever, and he was hurried to the hospital at Manila.

The landing at Angonan on the 1st turned out to be fruitless as far as a fight was concerned. Captain McGrath arrived from the States on July 4th, G's casco becoming the flag ship. On the following day the town of Pelila was captured after a skirmish in which Private Frank Bouchard (C) was slightly wounded. Tanay, Binangonan and Baras were thoroughly searched on the 6th, 8th, and 10th, respectively, but no signs of insurrectos could be found. On July 11th Lieutenant Parker received the notification of his promotion to the Sixth Cavalry, and left for Manila, turning over L Troop to Lieutenant Batson. A landing at Muntinlupa, on this day, was practically a repetition of the fight of June 26th, except that the enemy's force had been increased. Pursuit exhausted our ammunition to such an extent that the recall was sounded. The insurrectos considered the return to the beach a retreat, and pressed forward eagerly until the *Napidan* dropped shrapnel into their midst. Privates Edward Reeves (C) and Amos A. Noll (G), were slightly wounded. On the 18th, landing at Paete, the command marched five miles inland to San Antonio, finding the road

lined with abandoned trenches. The capture of an insurgent storehouse provided a much needed change of underwear and clothing, but the men, in the resulting mixed uniform, presented the appearance of opera bouffe pirates.

Cramped quarters and frequent wettings were now beginning to show their effects on the men, so Captain McGrath landed on a small island where a few drills took off the "sea legs," and "shore liberty" restored the men's spirits. On the 24th, word was received that the squadron would participate in an attack upon Calamba, the strongest insurgent position on the lake and one of the most valuable strategic points on the island. Knowing that the garrison was strong, General Hall brought six companies of the Twenty-first Infantry and a full battalion of the Washingtons from Manila in cascos, and General Lawton accompanied the expedition. Although timed to arrive early in the day, the landing in front of the town was not made until after 4 P. M. on the 26th, and then blunder followed blunder. The whole command was disembarked on the wrong side of a deep river, thirty yards wide, with the result that this stream had to be crossed in the advance; our squadron was forced to march across the entire infantry front to reach its prescribed position, and during a critical stage of the advance the gunboats fired on our line at 1200 yards.

When the squadron finally reached its place in line there were no mistakes made by the Fourth Cavalry. Captain McGrath advanced straight at the town, with L on the left, G in the center, and C on the right, of a line of skirmishers. About the time that L Troop struck the river the whole line was hotly engaged with the enemy, who were firing at short-range from positions concealed by the brush. Captain McGrath hurried to the river bank on the left. Seeing a small banca across the stream, he and Lieutenant Batson, without hesitation, swam the river and towed the boat back. Lieutenant Batson's leggings became entangled in some way, and he would probably have drowned if the Captain had not pulled him ashore. Eight men (good swimmers), with their carbines and belts in the banca and with the two officers, gained the insurgent side of the stream. Shouting to

Lieutenant Brown to push the line ahead, Captain McGrath boldly struck out with a yell to flank the enemy. The ten men must have looked like two hundred to the Filipinos, for they fled precipitately. Lieutenant Brown advanced the squadron rapidly for about a half-mile, vainly endeavoring to find a ford, when suddenly four shells from the gunboats struck within twenty yards of his line, and the Gatling gun began its well known mowing action with accurate range. Nothing demoralizes good men so badly as this fire from the rear. Lieutenant Brown ordered an advance out of the danger zone and into cover. Private Edward F. Olnhausen (C) was wounded at this stage. Fortunately the gunboats soon ceased firing, but it was then discovered that the insurgents had retreated round the right of the infantry and were enfilading the whole line.

After assisting in a disposition to meet this new situation, Lieutenant Brown left the infantry to handle the affair and hurried to the support of our small detachment, which could be heard firing on the other side of the river. A ford was discovered, and the squadron was soon in the town, to find that Captain McGrath and his small party had pushed the insurgents out so rapidly that all of the Spanish prisoners, including six officers, fell into our hands. Before reaching the town, however, the detachment had been swept by the Gatling guns and had had one desperate fight. Corporal Thomas Totten and Private Charles Gleerup (L) were killed, and Private Martin K. Hines (L) was wounded. The first named was shot in the back, and the wound was made by a large-caliber bullet. Also, while working through the town the detachment came under heavy fire from the enemy sheltered behind buildings and walls.

The conduct of Captain McGrath and Lieutenant Batson throughout the whole attack was so intrepid that they both received, upon General Hall's urgent recommendation, the medal of honor "for distinguished gallantry."

On the following day, the insurgents, who had retreated only as far as the hills, returned to make the first of a series of attacks upon our outposts. Lieutenant Brown, ordered out to drive them away, took one platoon of G Troop and

soon located a body of over sixty insurgents in an old sugar mill and behind other good cover. With less than twenty-five men he charged the position, killing three and wounding two of the Filipinos, who had abandoned many rifles in their desperate efforts to escape.

As the Filipinos were seen to have joined a larger body in their rear, the whole squadron was turned out, driving them to the hills after a spirited engagement. In a similar affair on the 28th, Private John MacGregor (C) was wounded. Thereafter it became necessary almost daily to chase the enemy away from the outposts. They were loth to lose this key to operations, and continually harassed its garrison for over four months. Such trying work had reduced the troops to an effective strength of only fifty per cent., when, on August 13th, the squadron was ordered back to Manila to comply with G. O. 40, 1898, discharging men enlisted for the war. The weeks that followed were full of hard work, drilling recruits, straightening out papers and property after the long period of field service, and equipping for the fall campaign, which all knew would be a busy one.

During the first six months of 1899 many changes in officers had been recorded at the regimental headquarters in the States. Colonel Compton rejoined on January 6th: Captains Hatfield and Dorst were promoted to be majors and were succeeded by Captain T. R. Rivers (F) and John A. Lockwood (D), the latter, by mutual transfer with Captain Wilder, retaining the command of M; First Lieutenant Kirby Walker came to the regiment, vice Lockwood, and First Lieutenant A. M. Davis, vice Slavens, appointed quartermaster; Second Lieutenant Craig transferred to the Sixth Cavalry, and was succeeded by Second Lieutenant John J. Boniface.

The act of March 2d, providing for an increase of two captains for adjutant and quartermaster and four lieutenants for regimental commissary and squadron adjutants, promoted First Lieutenants Neall, Cameron, and Walsh, the last named, to the regret of all, being thus transferred out of the regiment. Second Lieutenants Smedberg, Rutherford, Carson, Cassatt and Hawkins gained their bar, and the following youngsters were assigned in their places: Charles

S. Haight, Ward B. Pershing, Clark D. Dudley, Samuel A. Purviance, and Ben H. Dorcy. The staff appointments were not immediately made, as the officers selected by the colonel were not at headquarters, as required, and were urgently needed elsewhere.

Just at this stage, G. O. 82, A. G. O., detailed the head quarters, band and the remaining six troops for Philippine service, all officers hastening to report for duty as soon as the order was received. Captain Erwin was then, May 25th, appointed regimental adjutant, a position he had long held as lieutenant. Lieutenant Slavens was appointed commissary, and Lieutenants Brown, Stewart and Harris squadron adjutants. The former two, on duty in Luzon, did not receive their appointments until late in July, when, being in active command of troops in the field, they both promptly declined.

Captain J. M. Neall, one of the most efficient as well as popular officers of the regiment, to the surprise of everyone, was dicovered on February 15th to have been "going the pace." He was short in his accounts as exchange officer at the Presidio, and was dismissed from the service July 15th.

The concentration of the six troops at the Presidio was a slow matter, for it was a difficult problem to find organizations to replace them at their different stations. Troops A and F were also delayed by a miner's strike at Wardner, Idaho, which required the presence of United States forces. They reached the Presidio May 28th, embarking June 23d on the U. S. transport *Sheridan*, with the following officers:

Troop A—Captain, Geo. H. Cameron; first lieutenant, E. B. Cassatt; second lieutenant, J. N. Munro.

Troop F—Captain, T. R. Rivers in command; first lieutenant, Kirby Walker; second lieutenant, L. R. Holbrook.

Attached—First Lieutenant H. S. Hawkins.

These troops were followed June 28th by the headquarters, band, and Troops B and M, on the transport *Valencia*, with the following officers:

Major Charles Morton, in command.

Adjutant, Captain J. B. Erwin.

Squadron adjutant, First Lieutenant F. W. Harris.

Troop B—Captain, James Parker; second lieutenant, C. D. Dudley.

Troop M—Captain, J. A. Lockwood; second lieutenant, J. J. Boniface.

On the date of sailing of the headquarters the actual command of the regiment rested with Major Rucker, in the Philippines, for Colonel Compton had been retired June 17th (succeeded by Colonel Michael Cooney, who never joined), and Lieutenant-Colonel Wagner had relinquished command, to be retired on July 3d. The horses of the four troops of the band and of headquarters were all left at the Presidio under the charge of Lieutenant Slavens, who was acting as regimental quartermaster.

The Quartermaster's Department, seeing that the transportation of animals across the Pacific was entirely feasible, and appreciating the importance of quick delivery, had equipped several tramp freighters for this work. On one of these (the *Wyfield*) Lieutenant Slavens and Veterinarian Plummer, sailing July 5th with 145 horses, lost only ten, while on another (the *Conemaugh*) Lieutenant Winans, sailing July 11th with 275 horses, lost only twelve, the remainder being put ashore in both cases in excellent shape for immediate work.

Both vessels stopped at Honolulu, putting the animals ashore for a few days' rest, the actual sailing time to Manila being: *Wyfield*, thirty-six days; *Conemaugh*, thirty days.

Troops D and H were not relieved from the Yellowstone Park until June 23d. They reached the Presidio June 30th, and on the 13th of July sailed on the *City of Para*, with the following officers:

Major J. A. Augur, commanding.

Troop D—Captain, W. E. Wilder; first lieutenant, A. M. Davis.

Troop H—Second lieutenant, F. T. Arnold.

The horses of Troops D and H were turned over to Captain Cress (promoted July 1st, vice Neall, discharged), to be transported on our old friend, the "wind jammer," *Tacoma*. Her trip lasted eighty days, and, although Captain Cress

landed 191 of his 200 horses, they showed the effects of the long voyage as soon as hard campaigning was encountered.

August 13th saw the whole regiment present for duty in Luzon. It is to be remembered that the last six troops to arrive had complied with G. O. 40 before sailing. Hence, while all the troops of the regiment now had fully eighty per cent. recruits, the original six had the advantage, in that their twenty per cent. old men had all been under fire.

As soon as the new troops had stowed away their horse equipments and heavy property, they were promptly sent out of Manila for outpost work. A and F left on July 30th for the Mariquina Valley; B and M on August 4th for the Deposito (Manila reservoir). On August 12th an expedition was directed against the town of San Mateo, in the Mariquina Valley, seven miles north of the pumping station. Captain James Parker, commanding the expedition, with Troop B and parts of companies of the Twenty-first and Twenty-fourth Infantry (250 men in all), advanced along the main road on the left bank of the river. Captain Rivers, with 100 men from A and F, marched across country on the right bank. The two columns were to unite at the town with a third coming from Novaliches, consisting of a battalion of the Twenty-fifth Infantry under Captain Cronin of that regiment. About half way to the town, Captain Parker's column encountered the enemy stationed behind intrenchments that completely controlled an extended flat covered with submerged rice paddies, and swept the road which led straight up to the trenches.

The advance across this bullet-raked open country was executed in faultless style in spite of the large percentage of recruits and the fact that it was "first engagement" for all hands. Sergeant J. C. Robertson (B) was killed and Private Charles Jabelman (B) seriously wounded in the first stages of the fight, and the infantry suffered a heavy loss; but there was no hesitation, no shirking. The trenches were carried, succeeding positions captured after brisk fighting, and the town of San Mateo itself occupied shortly after noon. Captain Parker in his report highly commends the conduct of Lieutenants Dudley and Boniface, First Sergeant G. W. Moffitt and Quartermaster-Sergeant Samuel Adams, both of B.

Captain Rivers' progress had been slower, due to the entire absence of roads. After a laborious march of three miles it became necessary to capture two outposts in strong position on adjacent hills. The nearest was carried after a sharp fight and the garrison of the second fled to avoid being cut off. The command was halted an hour to rest the exhausted men. Resuming the march, the advance-party soon developed the enemy on a ridge perfectly controlling a deep ravine perpendicular to the line of march. Under their stiff fire Sergeant Nicholas Sebellius (F) was instantly killed. Reply to the fire appeared to be of little value, as the Filipinos were perfectly concealed and were using smokeless powder. The officers were assembled for consultation. It was evident that the force in front was the former garrison of the outposts; a succession of parallel ridges allowed them to retreat to new positions, and the men were not physically fit to do the flanking work required: opposition to Captain Parker's advance had ceased. Accordingly, Captain Rivers withdrew his command and returned to camp, having seen nothing of the column from Novaliches. The latter had also been obliged to march across country, and did not reach San Mateo until long after the time planned, although the enemy was not encountered. Acting under orders, Captain Parker, with his own and Captain Cronin's force, returned to the pumping station the following day. Apparently it was not considered policy to leave a garrison at San Mateo at this time. The insurgents promptly re-occupied the town and it was twice subsequently captured by the Americans. The record for captures lies between San Mateo and one other town, of which Mr. Dooley says: "Whiniver ye're in doubt, take Porac."

The horse transports, *Wyfield* and *Conemaugh*, arrived in the bay on the 16th and 18th. Troop F was relieved from Mariquina on the 18th and returned to the city to "stand to horse." Men and horses were marched next day to our new rendezvous, the Pasay cavalry barracks. A full set of nipa barracks for twelve troops and the band, with officers'

quarters, hospital, guardhouse, storehouse, and office, had just been completed on the shore of the bay, about three miles south of the Walled City. The parade ground, with bandstand and flagstaff, and the regularly spaced buildings, gave the place a very homelike appearance. At first there were no stables, but subsequently excellent nipa-roofed open sheds with feed-boxes and mangers were constructed.

The site was healthy, cool and particularly adapted for cavalry. About a half-mile further south is an excellent drill ground (the site of Camp Dewey, where the first expedition was encamped) large enough for a squadron in close order, and with a firm sandy soil that permitted work between rains in the wet season. Twice a week the horses were ridden into the bay, which was a hard, gently shelving beach at this point. Both men and horses enjoyed the frolic, combining as it did, good exercise and a refreshing bath.

On the 19th, Troops D, G and H relieved B, M and A, respectively, at the outpost stations, the latter reporting at Pasay with their horses, which they had picked up at the quartermaster's corral in the city.

Preparation for mounted work went on busily, all the horses having made the voyage barefoot. Troop L, on the 22d, was sent to outpost station at Malaban, two miles south of our barracks.

The roster of officers was depleted by G. O. 122 and 150, organizing the new United States Volunteers. Under the first, on July 15th, Captain Lockett became colonel of the Eleventh Cavalry, U. S. V.; Lieutenant Carson, a major in the same regiment; Lieutenants Boyd and Cassatt, majors of the Thirty-seventh and Twenty-seventh Infantry, U. S. V.; and Lieutenant Scherer, senior captain of the Twenty-seventh Infantry (subsequently promoted major). Under the second order Captain Parker became lieutenant-colonel of the Forty-fifth, and Captain Wilder, lieutenant-colonel of the Forty-third Infantry, U. S. V. Pending the arrival of their regiments from the United States, Lieutenant-Colonels Parker and Wilder and Major Cassatt were assigned for duty to the staff of General Young. Other changes in

officers were: Lieutenant Brown appointed A. D. C. to General MacArthur on August 13th; Captain Erwin on August 11th, and Lieutenant Slavens on August 22d, resigned their staff positions in order to obtain active field service; Major Rucker on August 4th; Captain Gale (who had been appointed adjutant *vice* Erwin) on August 19th, and Captain Wheeler on August 26th, were invalided home to the States; Lieutenant Davis appointed squadron adjutant August 14th; Major Morton detailed on duty as assistant to the Provost Marshal General, and Lieutenant Batson detached on September 2d to organize a battalion of native scouts from the Macabebes, a tribe of Filipinos who had always been at war with the Tagalogs, the leaders of the enemy. Many Macabebes had seen service under the Spanish.

[To be Continued.]

FILIPINO LABOR.

By First Lieutenant CHAS. O. THOMAS, Jr., First Cavalry.

So much has been said and written detrimental to the Filipinos as laborers, that I wish to give my experience in working them for the past year and a half.

As depot and constructing quartermaster at Batangas, P. I., during the construction of the post of Camp McGrath, I had on my rolls as many as 1,500 day laborers of all classes, carpenters, stonemasons and common laborers. The post was built by native labor, only six American carpenters being employed as foremen.

That "Filipinos cannot work equal to Americans," is true, but when one considers the difference in a day's pay, twenty-five cents to thirty-five cents for the native laborer, $1.50 for the American, $1.25 to $1.50 for the Chinese, one should not expect quite so much.

Again, where are you to find the American labor in these islands that will or can handle the pick and shovel for eight hours a day? It may be here, but it is not looking for such jobs as yet, nor will it so long as teamsters are as scarce in the Islands as they are now and have been for the past two years.

It is not fair to the native to compare his labor with the American labor, if, at the same time, you do not take into consideration the difference in wages. First, we will take up the common laborer or peon, as he is called out here. In the construction of Camp McGrath at Batangas, I employed over a thousand of this class of native laborers daily and paid them twenty five cents a day. Anything like this number of American laborers could not be had in these Islands for any price, but almost daily some American would

come along that needed work and would be willing to work for $1.25 to $1.50. You will readily see that one American laborer at $1.25 must do the work of five natives. I found that he could do that for one or possibly two days; but he could not keep it up, and after the native learned how to use the American pick and shovel, the ratio would drop to two, or at the outside three, natives to one American.

In working the native laborer you cannot afford to rush him at the start; take him a little slowly at first until he is accustomed to you and your methods, but more especially until he is acquainted with your system of paying. Once you get his confidence he will do a lot more than otherwise.

Road-making with Filipino Labor.

Second, we will take up the Filipino carpenters, and see what can be said in their favor. I employed more than 500 of them. At first my American carpenters had to teach them how to use American tools. They brought along with them saws that looked like the cross-cut saw we use in the States to saw up stove wood. It took two men to use them, and then they would or could not saw to the line; but they quickly learned the use and the value of the American saw, and before Camp McGrath was completed many of them became first-class carpenters. The style of construction and the plans were all different from anything they had ever seen before and, naturally, they did not take hold at once as

American carpenters would have done; but after the first house was finished, there was little trouble with any of the others. Four of these native carpenters, on the completion of Camp McGrath, were able to take an American plan and erect a building with very little if any assistance from the foreman.

Now we will compare the wages of the Filipino carpenter with that of the American, the Jap and the Chino. I have tried them all.

First-class American carpenters want from $125 to $150 a month; the next grade want from $75 to $90 per month: Japs $50 to $60 and a ration; Chinos $40 to $50 and a ration. Natives I paid from forty cents to $1.25 a day, only a few drawing over seventy-five cents.

OFFICERS' QUARTERS UNDER CONSTRUCTION AT CAMP MCGRATH, P. I.

My experience at Camp McGrath taught me that of the four different nationalities of carpenters I had on the work, the Filipino was the best for the money. I do not mean that he is the best carpenter, for the Filipino is not a skilled carpenter; but on rough work, such as the quarters erected out here are, the Filipino carpenter will save any contractor money, if he will only learn how to work him, and that is no great task. Japs, though, are finished carpenters, and I kept some eight or ten all the time to do finishing work; but when it comes to raising the building they are not to be compared with the Filipinos. Japs are afraid of falling where the Filipino would not give it a thought.

Now, take up the stonemason. You will find this class of laborer the most skilled of all. Possibly this is because so many of the buildings throughout the islands are made of stone. Native masons are to be had in large numbers. They chop out their own stone from what is called out here "adobe rock." It is a soft stone that becomes hard when exposed to the air, and is used throughout the islands for the construction of buildings and bridges. They are very slow, but their work is entirely satisfactory when finished. On the completion of Camp McGrath, I was detailed to build the post here at Los Baños. Very nearly all my old carpenters, stonemasons and laborers followed and were employed on the work. These two posts stand to-day as illustrations of what skilled and unskilled Filipino labor can do. The stone bridge now building here is being built entirely by Filipino labor. No Americans are employed other than the teamsters who bring the materials. This bridge when finished will be 71 feet high, 210 feet long and 32 feet wide. To work the Filipino successfully, you must first apply system to your work and, when he understands you, he will prove satisfactory. Discipline in the work and among them can be just what you care to make it, and such a thing as a strike is never heard of. They have their little "kicks," and the man that works them successfully is the one that will listen to their complaints and will settle them. Anyway

FILIPINO LABORERS WORKING AT THE QUARRY.

the boss-man settles it is satisfactory to them, if once you have gained their confidence.

The large majority of Americans have not the patience to work the Filipino. They expect him to go on the rush all the time, not taking into consideration the tropical sun and the small wages paid him. Especially if you care to get a large job of work done, I would advise you not to rush the Filipino till he becomes acquainted with your system;

FILIPINO MASONS BUILDING BRIDGE AT LOS BAÑOS, P. I.

and above all, pay him on the day you say you are going to pay. The Spaniards had a system of advancing him money —a poor system all Americans will say, as it is not necessary.

I began by paying my force every Saturday night; after a few weeks I paid them only twice a month, and within a couple of months changed again to monthly payments, and have continued this ever since. I would have paid them

monthly from the start, but appreciated the fact that they had very little to live on, so I adopted the above system. I have always had all the laborers I could use, and have used a good many, believing that, if it took one man one hundred days to complete a job of work, one hundred men could do the same job of work in one day and not cost any more. I not only worked a good many Filipinos, but collected them by the hundreds and sent them to other constructing quartermasters throughout the islands.

If I had the employment to offer the native, I do not hesitate to say I could get two thousand laborers, carpenters and stonemasons in two days. A few days ago I told my native foreman to ask the natives in my employ if they would like to go to Panama and help build the canal, and, if you were here to-day, you could hear them say, "We are going with the Teniente to Panama to build the canal when we finish this work." They could be contracted with to go to Panama to work on the canal for a term of two years, and I believe would prove to be among the best classes of workmen that could be had for that country. Their wages would, of course, have to be advanced beyond what they are paid here, but in the end they would do a lot of work for a little money. "Give the devil his due." The Filipino is the best laborer I have seen in these islands, considering the wages paid.

This information is compiled from one and one-half years' experience as depot and constructing quartermaster at Batangas, as constructing quartermaster at Los Baños, and as superintendent and disbursing officer of the Calamba-Los Baños-Bay road for the Civil Government.

Los Baños, Laguna Prov., P. I.,
June 24, 1904.

SURRA.

By Captain CHARLES D. RHODES, General Staff, U. S. Army.

NEARLY every cavalry officer who has served in the Philippines since 1901, is well acquainted with the characteristics of this fatal animal disease, although for some time many things were believed of it, which have since been disproved.

My own regiment, the Sixth Cavalry, stationed in the Islands from 1900 to 1903, almost entirely in Southern Luzon, suffered unusually from the epidemic, and at the time of our departure for the United States, the question of eliminating or at least controlling the disease, appeared to us to be the paramount cavalry question of the day.

In my own troop (C) we lost about twenty-five horses and ten mules—not all at once, but by ones and twos, stretching over a period of a year and a half. Nothing appeared to cure the disease, and although theories as to its causation and transmission were quite lavishly manufactured, no one was certain of his ground, and the disease continued to run its course. I have never known a well established case of surra to recover.

Surra was often confounded with the native form of glanders, and we were told that it had existed among native stock for many years. This, as has since been demonstrated, was a mistake, for from all accounts it was not introduced into the Philippines until 1901.

There was a quite general idea, too, that native grasses were responsible for its transmission; and again, that swampy drinking water was a factor. At one time it was thought to be infectious, later simply contagious, and still later, neither infectious nor contagious. The dissimilarity

of opinions held by officers is shown by the succession of general orders and circulars, emanating from the headquarters, Division of the Philippines, prescribing regulations for the treatment of surra. Up to the present time (1904), however, no system of treatment for the *cure* of surra has been discovered, but our knowledge of the disease and its transmission has advanced to such a point, that the measures as to its *prevention* have proved efficacious.

The Inspector General, Division of the Philippines, has furnished the General Staff of the Army, which has been interested in the matter, with the following statement:*

"The mortality from surra among the U. S. Government animals in the Philippine Islands during the past year (1903-1904) has been much less than during any preceding year since the disease appeared. Since July 1, 1903, approximately 200 public animals have been destroyed in the division on account of surra. This decrease is due not to any form of treatment after infection, but to increased and efficacious precautions against infection. Surra has been confined to no general section or sections; animals have been destroyed at twenty-seven different stations, involving sixteen provinces and ten islands. Total suppression of the disease in the islands cannot be hoped for under existing conditions, since no preventive measures are being observed by private individuals to stamp out the disease, and to prevent its spread among private stock. Not only are horses, mules, and carabaos subject to this disease, but also dogs, rabbits, monkeys, rats and many other animals, domestic and wild.

"Attention is invited to G. O. 103, Headquarters Division of the Philippines, 1903, copy enclosed.

"Referring to precautions to be observed relative to old rice fields, and low, swampy ground subject to overflow, it should be remarked that while it is believed that contraction of surra cannot be traced directly to grazing in such localities, or to use of grass from same, yet such conditions are liable to cause diseased feet, scratches and wounds about the feet, legs, and mouth, and it is well known that such localities are prolific in flies, mosquitoes, and other insects which are known to carry infection. The order prescribes that temperatures be taken in the early morning; experience has taught that midday is the better time for taking same.

*Furnished through the Chief, M. I. D., Manila, P. I., dated July 8, 1904.

"Relative to question No. 3, I have no definite or reliable information. Captain George P. Ahern, Chief Philippine Forestry Bureau, should be able to supply full information upon the subject. The general opinion of cavalry officers as to the future supply of horses for the Philippine Islands is not well known to me. My opinion is that for draft purposes mules are in every respect far preferable. For saddle purposes, it is believed that a cross between the native stallion and our hardy Western mare of moderate size would produce a horse ideally adapted to island service. The experiment is certainly worth thorough and systematic trial."

The most valuable treatise on surra which has appeared, is the recent report * of Musgrave and Clegg, of the U. S. Biological Laboratory, Manila, which reviews among other things the history of the disease, its ætiology, modes of transmission and infection, symptomatology, course, duration, prognosis, and treatment. It is a highly technical and scientific report on the disease, and a brief synopsis of its main features and conclusions cannot fail to be of interest to all officers, who have had or will have to do with the care of cavalry or draft animals in the tropics.

Surra is a form of disease due to a parasite called Trypanosoma, with a distinctive surra species known as Tr. evansii or Tr. brucei. The generic disease Trypanosomiasis has been known for generations in India, and has annually destroyed millions of dollars worth of animals in India, Africa, and South America. More recently the surra epidemic has invaded the Islands of Java, the Philippines and Mauritius, the latter island becoming infected during the South African War.

As to climate, the transmission of the disease seems to be coincident with periods of wet weather, for no other reason it appears from our present knowledge, than that such climatic conditions are most favorable to insect life, and that insects (principally biting-flies) carry infection.

So far as horses are concerned, foreign animals do not

*Trypanosoma and Trypanosomiasis with special reference to surra in the Philippine Islands, by W. E. Musgrave, M. D., acting director Biological Laboratory, and Moses T. Clegg, assistant bacteriologist, Biological Laboratory (Department of Interior, Manila, 1903. No. 5).

appear more susceptible to surra than native ponies, as proved by experience with Philippine, Chinese, Australian, and American horses. Sex and color appear to play no part in the communication of the disease; and age, only in part, from the fact that the older horses are more prone to have wounds, favoring the introduction of parasites.

The present theory of the transmission and infection of surra depends solely upon the the theory of biting flies and insects; and exhaustive experiments have shown that in the absence of the original parasitic organism or host, and of biting insects, the disease does not spread. Experiment also shows that the disease is not contagious, nor can it be transmitted congenitally; and it does not appear to be transmitted by coition, unless some wound of the genitals permits the blood to become infected.

One of the most important points which the biologists appear to have demonstrated, is that surra is not transmitted through sound mucous membrane of the alimentary canal, and according to present knowledge the surra parasite is not to be found in food and water. All artificial attempts to infect the latter have failed. If this be true, as seems most probable, the danger from native Philippine grasses is eliminated, unless the animals have lesions of the mucous membrane or cuts on the skin, which might permit infection, supposing that for a brief interval food and water serve as culture media for the parasites. Horses fed on oats and hay have been equally as susceptible as those fed on native grasses; and, after attempting to infect water with the parasite, injection of this water under the skin of a healthy animal has failed to produce the disease.

To sum up, exhaustive experiments, continued for more than a year, on horses, dogs, goats, rabbits, guinea-pigs, monkeys, cats, and rats, have failed to produce the slightest evidence that infection by food, drink or otherwise ever occurs in mucous membrane which is perfectly sound.

"Surra is essentially a wound disease, and transmission through the injured mucous membrane results when infected material is brought in contact with it." *

*Preliminary report of Musgrave and Williamson.

Of the biting insects which have been suspected of transmitting the disease, biting flies have repeatedly been shown to transmit the infection; fleas transmit the surra of rats (Tr. lewisii) from rat to rat, from dog to dog, and from rat to dog; and transmission by mosquitoes, lice and ticks has not yet been determined. While the transmission of surra to horses by ordinary flea bites has not yet been established, our knowledge of the transmission of the disease through skin wounds, leads one to believe that open sores on horses' legs would be readily subject to infection by fleas as well as by flies.

The first symptom to be noticed in an animal infected with surra is a rise of temperature, followed by a remittent or intermittent fever. Later the animal becomes stupid, with watery discharges from the nose and eyes, hair rough; and finally the discharges become more profuse, emaciation develops, the genitals and dependent parts become much swollen, the gait becomes staggering, and death follows. During the progress of the disease the parasites mechanically destroy the red blood corpuscles, resulting in progressive anemia. Experiment has shown that the period of incubation in artificially contracted cases of surra in horses is usually from four to seven days, although it may be more; and it is believed that the incubation period in naturally contracted cases does not vary more than in experimental cases.

In the Archipelago the duration of the disease in horses has been found to be from fourteen days to three months, and is about the same for American, Chinese, Australian and native horses.

With mules the symptoms are in general similar to those of horses, but in the Philippine Islands the disease is with them of longer duration.

Besides being found in many animals, cases have been reported of surra parasites having been found in the blood of human beings, but so far in the Philippines no cases have been met with.

PREVENTION.

All efforts to cure the disease in the Philippines have failed, and there appears to be slight prospect of evolving a successful method of treatment. Prevention is then our only hope.

In South America the disease usually disappeared among animals removed from marshy regions to high, dry ground; animals removed to stalls in South America and in Africa also appeared to fare better. In Java quarantine regulations were adopted and enforced, and it was recommended that animals afflicted with surra be isolated, or killed and buried. Both sick and healthy animals were transferred to dark, spacious, well-ventilated stalls, where few if any flies were to be found. Cleanliness about the stalls was required, fecal and refuse matter were removed, and in some cases smoke fires were made to drive away the flies.

In the Philippines the following measures are recommended in the report of Musgrave and Clegg:

1. (*a*) The destruction of all infected horses, mules and other animals of economic importance, according to systematic inspection by sanitary inspectors; and, after death, the removal of the bodies to crematories or to places of burial in a fly-proof wagon, or one protected by mosquito netting.

(*b*) The destruction of rats. In Manila there are annually thousands of rats destroyed on account of the plague; in the provinces the systematic poisoning of rats is recommended.

(*c*) The destruction of game and other wild animals.

2. The destruction of stinging and biting insects, more particularly the biting flies. This is best accomplished by destruction of their breeding places, by the proper disposition of fecal matter, the burning of all offal, and general cleanliness about stables and corrals.

The most recent methods for the destruction of mosquitoes is well known. The destruction of fleas is as yet an unsolved problem.

3. The treatment of contact animals: Quarantining for seven days contact animals exposed to surra; and contact

horses should be subsequently protected for forty-eight hours against flies, either by mosquito netting, by smearing with iodoform ointment, washing with solution of creolin, or by burning smudges.

4. Additional measures of prevention for individual horses are avoidance of allowing them to stand for any length of time during daylight in a group of other horses, cleanliness of stables, screening stalls and keeping sores covered with suitable ointment, such as tar or iodoform ointment, to keep off flies.

TACTICAL PROBLEMS AND THEIR SOLUTIONS.

SUITABLE FOR SOLUTION AT SMALL CAVALRY GARRISONS.

MAP PROBLEM. CAVALRY SCREEN. SHEET NO. 1.

General Situation.

THE Brown army has beaten the Blue army near Charlottesville (seventy miles southwest of Manassas), and has lost contact with it. The Blue army is supposed to have retreated towards the northeast.

Special Situation (Brown).

The Brown cavalry corps is pushing northeast, trying to regain contact with the Blue army.

The First Cavalry (Brown) is advancing by the Warrenton Pike. At 5 A. M. 15th October, 19—, its headquarters and Third Squadron are at New Baltimore (five miles south of Thoroughfare Gap). The First Squadron is at Buckland, and the Second at Thoroughfare Gap.

To carry out the instructions of the regimental commander, the major of the First Squadron, at this hour, gives the following verbal order to the captain of Troop A:

"Contact has not yet been established with the Blues, but inhabitants say they are retreating by roads north of Antioch. Our regiment will continue along Warrenton Pike, its left connecting with the Sixth Cavalry along the road Antioch-Woolsey, and its right with the Eighth Cavalry along Broad Run and the road Millford Mill-Manassas. The First and Second Squadrons will continue in the advance, and regimental headquarters and the Third Squadron will march in reserve on the Pike.

"Troop A will take the Warrenton Pike, keeping touch with the Second Squadron on the left and with Troop B on

the right. The Second Squadron will reach Thoroughfare at 6 o'clock (A. M.). Troop A will start at 6 A. M.

"Troop B will march in rear of Troop A to Gainesville; thence by the Gainesville-Bristow Road and the first road to the east to the Rollins house; thence eastward by the road Wellington—Newmarket X Roads—Balls Ford.

"I will march with Troop B."

Note. You are in command of Troop A. Its strength is 100 troopers. All streams on the map, except Broad Run and Bull Run, are fordable at all points.

Required:

1. What would be the position and disposition of the troop at 6:15 A. M.?
2. What means will you take to establish communication with the Second Squadron?
3. Describe in detail how you conduct your troop from the time it starts till it enters Gainesville. (Note: No enemy is found at Gainesville.)
4. What buildings do you particularly have searched at Gainesville?

Map: Manassas Maneuvers.

SHEET NO. 2.

Special Situation (Brown) Continued.

A private letter found in the post office at Gainesville, dated "Hickory Grove, Oct. 14, 19—," states that a large force of Blues has been passing through that place during the last two days.

Required:—To whom and how do you communicate this information?

SHEET NO. 3.

Special Situation (Brown) Continued.

At the fork-of-roads between Wayne and Burrel on the Warrenton Pike you meet a trooper from one of your advanced patrols conducting a negro. He says the negro has just come from Catharpin, and reports that he saw some Blue cavalry there yesterday.

No signs of the enemy have been seen along your route so far, and the troops to your right and left have informed you that they have seen no signs of him. The inhabitants all say that no Blue forces have marched along the Pike for several weeks.

Required:

1. The questions you ask the negro.
2. What disposition do you make of the negro?

SHEET NO. 4.

Special Situation (Brown) Continued.

From the negro you learned that a force of Blue cavalry, he thought about 500, was at Catharpin at sunset yesterday. He thought it marched north from there.

On your arrival at a point 1,000 yards farther east on the Pike you receive word from the troop on your left, that its patrols have seen two or three Blue scouts who retreated toward the northeast.

At the same point a messenger from your leading patrol brings information that from a window in the Swartz house two Blue troopers, apparently vedettes, had been seen in the edge of the first wood east of that house.

The troop on your right reports no signs of enemy as yet.

Required:

1. How the noncommissioned officer of your leading patrol conducted his patrol after the discovery of the two Blue troopers.
2. What you do with the information received.

SHEET NO. 5.

Special Situation (Brown) Continued.

At Pageland Lane a message from your advanced patrol informs you that the two Blue troopers fled to the northeast beyond Douglas Heights, and that the way is clear to Groveton. Also that the people of Groveton state that they have seen several small parties of Blue cavalry since daybreak; that one party came from the direction of Sudley

Springs, one by Lewis Lane, and several from the direction of the Stone Bridge.

You proceed to Groveton. There messages from three of your advanced patrols report a party of the enemy at least as large as a half troop at Buck Hill.* The patrol on the Pike has had to fall back, and the other two are halted in observation.

Required: Describe your dispositions on passing Groveton.

SHEET NO. 6.

Special Situation (Brown) Continued.

Having conducted your troop under cover to the wood south of the Henry house, it is discovered by the Blue detachment at Buck Hill, which makes its escape at the gallop in the direction of Poplar Ford.

Your patrols proceed toward the Stone Bridge, which they report is held by a strong force of Blues. From the Henry house you see with your glasses a number of guns, you estimate four batteries, on the hill at A. F. Kendall's (northeast of Poplar Ford).

The troop on your left reports that Sudley Ford is held by the Blues, and that a line of trenches is occupied on the ridge south of the Sudley mansion.

The troop on your right reports Ball's Ford held in force by the Blues.

Required:

1. The message (on message blank) that you send back.
2. From all the information you have gained what do you conclude concerning the Blue army?

SOLUTION—SHEET 1.

Answer 1.—We will suppose that Troop A was ready to mount and start. As the enemy is in retreat he has probably stuck to the main roads in order to travel as fast as possible. We desire to recover contact as soon as practicable, therefore we must make good time. The country is close and wooded, so the troops must keep on the roads.

*Stone House is at the foot of Buck Hill.

The second lieutenant will trot forward on the Pike with a corporal and six men in the form of "Bonie's points." At 6:15 it would have about reached the junction with the Carolina road.

A sergeant and four men would trot out toward Thoroughfare via Carter's to try to establish connection with the Second Squadron. It would about have reached Ford's at 6:15.

The troop with a scout or two a few hundred yards ahead of it, would start out at a walk in column of twos. At 6:15 the head of it would be a little beyond the midway point between the first two creeks the Pike crosses.

Answer 2.—I would have ordered the patrol which started toward Thoroughfare not to go much beyond Carter's, because, since the Second Squadron was to pass through Thoroughfare at 6 o'clock, the sergeant could not expect to find any part of it at Thoroughfare if he should go on thither. He ought, however, to meet a patrol from that squadron near Carter's. So his orders would be to scout a little beyond Carter's, then to turn east and rejoin the troop by the Carolina road.

On reaching the Carolina road I would send another patrol of a noncommissioned officer and four men up it toward Haymarket. One or the other of these patrols would surely meet a patrol from the Second Squadron.

Answer 3.—Although Troops B, C and D would all be between my troop and Broad Run, as I know that B would be behind me at this time, and as I suppose from the nature of the country that C and D must also start out behind me on the Pike, I would detach a patrol of a noncommissioned officer and four men to scout toward McCrea's Ford unless I had been informed that one of the troops behind me would look out for it. I would also have the by-roads and farm houses explored as well as it could be done without at all delaying the march. I should not, however, consider this of much importance unless some signs of the enemy were found in the roads. No large force of a fleeing army could be hidden in woods or farm houses without leaving some signs along the roads.

Before arriving within striking distance of Gainesville I should expect to receive a message from my second lieutenant telling me whether or no the town was occupied by hostile troops. As (according to the terms of the problem) no enemy was found at Gainesville by my second lieutenant's patrol, I would march into the town without any special precautions. The lieutenant would, of course, have explored the town in the prescribed way before entering it with his patrol. As I should want to give the officer's patrol time carefully to approach and examine Gainesville, I would march the main body of the troop at the walk most of the way to that town.

Answer 4.—Unless my second lieutenant had already done so before my arrival, I would have the post office, telegraph and telephone stations, and the railway station searched. If I needed maps of the country I would have the school house and any real-estate dealer's office searched. Gainesville is not a county-seat, so there is no court-house. There are probably no public buildings there besides the school.

SHEET NO. 2.

Answer.—As the squadron commander is with Troop B. which came as far as Gainesville in rear of my troop, he would probably not be far away, and I would hand the letter or send it to him.

SHEET NO. 3.

Answer 1.—When did you leave Catharpin? How far do you live from there? About what time of day was it when you saw soldiers there yesterday? How were they dressed—describe their clothing? About how many do you think there were? How many saddle horses do you think they had? How many soldiers were there besides the ones on horseback? How did the men and horses look—fresh or tired? Did you notice any cannons or any wagons? Which way did they come from? How long did they stay in town? Which way did they go when they left? What did they appear to be doing in the town? How did they and the town


VER GROUNDS,
FAIRFAX COUNTIES, VA.
Corps of Engrs,
LEGEND.

people seem to like each other? About how long was it from the time the first of them appeared in the town until the last ones got there? Did you hear the names of the general or any of the officers? etc., etc.

The answers of the negro would, of course, suggest new questions.

Answer 2.—If the answer of the negro showed that he had seen Blue troops at Catharpin or elsewhere, I would send him back with a list of his answers to me. As the squadron commander has gone toward the right with Troop B, and I know the regimental commander is not far back on the Pike, I would send the negro to the latter. But I would inform the squadron commander by messenger. I would also advise the troop on my left.

SHEET NO. 4.

Answer 1.—The noncommissioned officer probably has a patrol of four men. He would keep them concealed, and look carefully to see and find out all he could, probably going himself through the wood south of Swartz to its outer edge to get a closer view. If he could not determine from there what there was in the wood where the Blue troopers were, he would try to move his patrol under cover down Pageland Lane, behind the wood at Hereford's, and through the corn (which would probably not be cut yet) across to the wood east of Hereford's. Through this wood he would try to work up in rear of the two Blue troopers, finding out what was in rear of them, and capturing them if he could. He could not take the time for a wider circuit. After learning what he could, he would send a message back to his captain.

Answer 2.—I would transmit it to the colonel, and have the troops on my right and left advised.

SHEET NO. 5.

Answer.—After personally reconnoitering the enemy as well as I could, I would have one platoon advance dismounted through the cornfield, keeping concealed by the corn if it was

still standing, and trying to get position on the ridge on which the W. R. Cross house stands. This platoon would develop and hold the attention of the enemy, while I with the other platoons would ride via the by-roads, through the woods, taking care to keep under cover and to watch out for the enemy, and come out on the Henry House hill. This would take the enemy in reverse.

SHEET NO. 6.

Answer No. 1.

SENDING DETACHMENT.	LOCATION	DATE.	TIME.
Troop A, 1st Cav.	Stone House Warrenton Pike.	15 Oct., 19—.	9:30 A. M.

No. 3

To Adjutant First Cavalry, Warrenton Pike:

Found one-half troop hostile cavalry at Buck Hill. It got away at gallop toward Poplar Ford. My patrols report Stone Bridge held by strong force of enemy. From Henry House have just seen with glasses artillery on hill at A. F. Kendall's, northeast of Poplar Ford. I estimate four batteries. Troop on my left reports Sudley Ford held by enemy, and line of trenches occupied on ridge south of Sudley mansion. Troop on my right reports Ball's Ford held in force by enemy. I will keep contact and try to learn more about enemy in my front. K.,

Captain.

Answer 2.—I conclude that the Blue army has not marched across the country shown on my map, but has marched eastward by roads north of this section; that the cavalry seen by the negro at Catharpin was probably a flanking detachment: that the Blue army has made a turning movement east of the Bull Run toward the south and has taken up a defensive position behind that stream to dispute the further advance of the Brown army toward Washington; that the cavalry found at Buck Hill and the patrols seen during the day were employed by the Blues to keep touch with the Brown force and to obstruct and delay reconnaissance by the Brown cavalry.

EXERCISE ON THE TERRAIN. CAVALRY SCREEN. SHEET NO. 1.

General Situation.

(TROOPS IMAGINARY.)

An independent division of the (Brown) Army of The Missouri has concentrated at Platte City, Missouri, preparatory to a forward movement against a similar force of the Blue army, reported to be moving eastward from the vicinity of Valley Falls, Kansas.

Special Situation (Brown).

HEADQUARTERS FIRST (BROWN) CAVALRY,
FIRST CORPS, ARMY OF THE MISSOURI.
FIELD ORDERS, No. 6. FORT LEAVENWORTH, KAS.
28 Oct., '04, 1:00 P. M.

1. The enemy is reported moving eastward from the vicinity of Valley Falls, Kansas. Our First Corps is at Platte City, Missouri.

2. The regiment will at once move out as a screen to locate and delay the advance of the enemy, until our main body is across the Missouri River. The screen disposition will be such as to cover all roads leading to the west between Kickapoo on the north, and Metropolitan Avenue on the south.

3. (*a*) Major A—— will command the contact troops consisting of the First Squadron and Troops E and F of the Second Squadron.

(*b*) Major B—— will command the Third Squadron in support, disposed in columns of two troops each, in rear of the centers of the right and left wings, respectively, of the contact troops.

(*c*) Troops G and H will constitute the reserve and will be reported at once to the regimental commander.

4. The pack trains will be concentrated at Fort Leavenworth, until further orders.

5. Communications addressed to the regimental commander will reach him at Fort Leavenworth until 4 P. M., at which hour further instructions will issue.

By order of Colonel D——

E—— F——,

Captain and Adjutant First Brown Cavalry,
Adjutant.

Dictated to Squadron Adjutants.
Copy to Regimental Commissary.
Copy to Regimental Quartermaster.
Copy to Regimental Surgeon.
Copy to Corps Commander.

You receive the following:

The Commanding Officer, Troop B, First Brown Cavalry, Present:

SIR:—Complying with the provisions of Regimental Field Orders No. 6 (copy herewith), you will at once proceed with your troop via the route 1-3-7-11-23-25-27-51. Keep contact with Troop A on your right and Troop C on your left.

By order of Major A——— H—— K——
1st Lt. and Squad. Adjt. 1st Cav. (Brown).

Required: 1. State briefly the number of patrols you will at once send out—give strength and composition of each—and instructions to each (number patrols from right).

2. What consideration governs the question of strength of patrols in this case?

Time allowed, twenty-five minutes.

Refer to Fort Leavenworth map and also to large-scale map in JOURNAL No. 54.

SHEET NO. 2.

Special Situation (Brown) Continued.

When you arrive near Hancock Hill, a messenger brings you information to the effect that the Millwood Road bridge across Salt Creek is destroyed, and that the high stage of the water renders a crossing very hazardous.

Required:

1. Mention the general direction in terms of the points of the compass, in which a messenger must travel from your present position, in order to reach the reserve of the screen.

2. Is the country to the west and north especially adapted to cavalry used as a screen, or do you think the ground is too broken?

3. Would you be compelled to hold your troop on the main road or are you able to spread out across the country?

4. Under the conditions of the problem, which is the more important in your case, security or information?

5. State definitely (*a*) How much dependence you place on your patrols when considering your own security. (*b*) How much dependence the corps commander places on the first Brown cavalry for security.

Time allowed, twenty minutes.

SHEET NO. 3.

Special Situation (Brown) Continued.

You are at the junction of the Millwood Road with one leading to the north. You decide to make a personal reconnaissance of the settlement which you descry to the north. Required:

1. A brief report in the form of a message to the proper address, containing information of a military nature obtained by you during your reconnaissance.

Time allowed, forty-five minutes.

SHEET NO. 4.

Special Situation (Brown) Continued.

The following message arrives from a patrol to the west:

Patrol No. 1. 21 28 October, '04. 3:10 P. M.
Troop B, 1st Cav.

The Commanding Officer, Troop B, First Brown Cavalry, Between 9 and 11 (main road).:

Road branches here to west, southwest and south. Blue patrols of unknown strength on all branches within one-quarter mile of forks. Cannot advance. Am undiscovered.

L——.
Sergt. Troop B, Comm'dg Patrol.

Required:

1. The means you purpose taking in order to supplement the above information.

2. How far are you from Fort Leavenworth?

3. How do you intend to notify the commanders of the troops on your right and left with a view to obtaining their coöperation in the move contemplated in your answer to the first question on this sheet?

Time allowed, twenty minutes.

MANEUVER WITH TROOPS.* CAVALRY SCREEN.

General Situation.

A Brown army is advancing through Missouri to invade Kansas, which is defended by a Blue army.

Special Situation (Brown).

The First Brown corps will cross the Missouri River between Atchison and Leavenworth. Its Third Division, screened by the First Brown cavalry, will cross at Fort Leavenworth.

The First Brown cavalry crosses the river just before noon, October 31, 1904, and the regimental commander immediately issues the following order:

HEADQUARTERS FIRST BROWN CAVALRY,
FORT LEAVENWORTH, KAN., 31 Oct., '04. 12 Noon.

FIELD ORDERS, } No. 2. }

Troops.

1. Advanced Squadrons.
   1st Prov. Squadron,
   Maj. A,
   Troops A and B.
   2d Prov. Squadron,
   Capt. B,
   Troops C and D.
   3d Prov. Squadron,
   Maj. C.
   Troops E and F.
   4th Prov. Squadron,
   Capt. D,
   Troops G and H.
2. Reserve,
   Maj. E,
   3d Squadron.

I. A division of the enemy is camped near Lowemont, Kansas. Our division is advancing on that place, and billeted at Platte City last night.

II. This regiment will continue to screen the advance of our division, and will resume its march at 1:20 P. M. to-day.

III. (*a*) The First Provisional Squadron will move by the road X-3-5-Kickapoo-17.

(*b*) The Second Provisional Squadron will move by the road 1-3-5-7-63-Lowemont.

(*c*) The Third Provisional Squadron will move by the road A-B-D-E-F-20.

(*d*) The Fourth Provisional Squadron will move by the road Prison Lane-C-2-3-36-44.

IV. The Reserve will remain at Fort Leavenworth until 4 P. M., and will then follow the Third Provisional Squadron.

V. The pack train escorted by one officer and fifteen troopers from the Reserve will follow the Reserve at one mile.

VI. The regimental commander will be with the Reserve.

By order of Colonel F.,

G. H.,
Adjutant First Cavalry.

Dictated to
Field and Staff Officers
and captains commanding Prov. Squadrons.
Copy to Division Commander.

Fort Leavenworth map.

* The enemy is imaginary.

O H I O R I V E R

WEST POINT

EAST RIVER

ROSE HILL ROAD

MAP
of the
MANEUVER GROUNDS
near
WEST POINT KENTUCKY
Surveyed under the direction of
COLONEL O. H. ERNST.
Corps of Engineers, U. S. A.
BY
2ND LIEUT. N. E. BOWER, CORPS OF ENGINEERS.
AND A DETACHMENT OF THE FIRST BATTALION OF ENGINEERS
By command of
MAJOR GENERAL JOHN C. BATES
COMMANDING DEPARTMENT OF THE LAKES.
August 1908.
Scale:

STITHTON

GRAHAMTOWN

LONGHILL ROAD

LANGLEY ROAD

KENTON X ROAD

MAP PROBLEM. ADVANCE GUARD. CAVALRY.

(West Point Map.)

General Situation.

A Brown army at Corydon, Indiana, controls the country north of the Ohio River. The country south of the Ohio River is in the possession of the Blues, whose army is concentrating at Bowling Green, Kentucky.

Special Situation (Brown).

Having learned of the collection of enemy's stores at various points in Kentucky along the line of the Illinois Central Railway, the Brown commander detaches the First Brigade, First Division, Cavalry Corps, with orders to find and destroy the Blue depots, and to gain information of the enemy's forces. The engineers are charged with the construction of a ponton bridge across the Ohio River to Greenley, Kentucky, ready for the passage of the cavalry brigade by 8 o'clock A. M., August 14, 1904. In compliance with these instructions, Brigadier General O., commanding the designated brigade issued the following order:

FIELD ORDERS, }
No. 1. }

HEADQUARTERS FIRST BRIGADE, FIRST DIVISION, CAVALRY CORPS, BROWN.
DOGWOOD, INDIANA, 13 August, '04, 3 P. M.

Distribution of Troops:

1. Advanced Guard.
   Major A. B. C., 1st. Cavalry.
   1st Squadron, 1st Cavalry.
2. Main Body (In order of march).
   1st Cavalry (less 1st Squadron.
   2d Cavalry.
   3d Cavalry (less two troops).
3. Rear Guard.
   Captain F. G. H., 3d Cavalry.
   Troops L and M, 3d Cavalry.

1. The enemy is concentrating in the vicinity of Bowling Green, Kentucky, and has established supply depots at various points in that State along the line of the Illinois Central Railway.

Our main army is in the vicinity of Corydon, Indiana.

2. This brigade will cross into Kentucky with a view to gaining information of the enemy and finding and destroying his depots.

3. The advance-guard will march at 7 A. M. to-morrow, and cross the Ohio River by the ponton bridge to Greenley, Kentucky, whence it will proceed via the Louisville & Nashville Pike toward Vine Grove, paying especial attention to the line of the Illinois Central Railway.

4. The main body will follow the advance-guard at 1,500 yards.

5. The rear-guard will follow the main body at one-half mile.

6. No baggage will accompany the command.

7. Reports will reach the Commanding General at the head of the main body.

By command of Brigadier General O.

R. S. T.
Capt. First Cavalry, Adjt. Gen'l.

Copy to
Regimental Commanders.
C. O. Advance Guard.
C. O. Rear Guard.
Brigade Quartermaster.
Brigade Commissary.
Brigade Surgeon.
Adjutant General First Division, Cavalry Corps (Brown).

Note: The strength of a troop of cavalry is taken to be three officers and 100 enlisted men.

Dogwood, Indiana, is situated nine and one-half miles north of Greenley, Kentucky.

Corydon, Indiana, is about nine miles north of Dogwood. Vine Grove, Kentucky, is ten miles south of Stithton. Bowling Green, Kentucky, is seventy miles south of Stithton.

Required: Discuss the situation from the standpoint of Major A. B. C., First Cavalry, commanding the advance-guard, and what steps he will take to carry out the provisions of Field Orders No. 1.

Write the order of Major A. B. C., First Cavalry, for the operations of August 14th.

SOLUTION.

The country north of the Ohio River is controlled by the Browns. Moreover, the engineers who are charged with the construction of the ponton bridge across the river, have preceded the cavalry column as far as Greenley, Kentucky; hence the advance-guard will be relieved from the performance of reconnaissance duty until it shall have crossed the Ohio and entered the enemy's country. It rests with Major A. B. C. to determine whether or not he will conduct his squadron as a compact body to Greenley, and there take up his advance-guard formation, or whether he will make the primary division of his force into vanguard and reserve before he reaches that point. As he is to precede the main body by forty-five minutes in leaving camp at Dogwood, he will be permitted to gain his distance of about two miles from the head of his advance-guard to the head of the main body without increasing the gait over the regular rate of march at the beginning of the day's work. This was evidently the intention of the brigade commander in directing

the advance-guard to precede the main body at the time indicated in Paragraph 3 of Field Orders No. 1. In this connection, therefore, all that Major A. B. C. has to do is to conduct his squadron across the river to Greenley and there form his advance-guard so as not to delay the march of the main body. So far as the data will permit, his plans for the operations of the advance-guard should be formed in advance, and his orders distributed so that the troops can move out from Greenley in proper formation without delay.

The province of the advance-guard is to provide for the security of the main body and furnish it with all necessary information, reconnoitering the country for a distance of three miles on either side of the line of march and paying especial attention to the line of the Illinois Central Railway. The reconnaissance must include search for the enemy's stores, so that the brigade commander may be informed of the presence of such stores at any point. The destruction of these stores when found do not come within the province of the advance-guard. The time necessary for the destruction of property would delay the march of the advance-guard and hence limit its reconnaissance. The results to be obtained must be clearly stated in the orders issued by Major A. B. C., so that there will be no doubt of their being understood by his troop officers, upon whom the duties of the reconnaissance will fall.

The road over which the column is to march is fixed by Field Orders No. 1. To the west of this road, and running nearly parallel to the railway, is the Pilcher's Point, Dickson and Bloomington Road. A body of cavalry marching by way of this road would be able to keep in close touch with a patrol on the line of the railway itself, and at the same time reconnoiter the country east of Otter Creek, including the towns of Garnettsville and Grahampton. One platoon could accomplish this result, detaching scouts or small patrols to cover the roads to the west of the indicated road. The detachment of a larger force than a platoon would weaken the advance-guard without accomplishing any greater results. This flanking detachment is not in the nature of a "flank guard," but is charged with the duties of

observation. Moreover, it should be a part of the vanguard and under the orders of the vanguard commander. While it might appear that the designation of a platoon to perform this duty, and outlining the road by which it would advance would better be within the province of the vanguard commander, still Major A. B. C. is justified in impressing his view of the necessity of this reconnaissance upon his subordinate officer, leaving to him the working out of the details for its accomplishment. By mentioning it specifically in his advance-guard orders, Major A. B. C. becomes assured that his wishes will be accomplished, an assurance he could not feel if the vanguard commander had gained a different idea of the requirements of the situation. The line of the Illinois Central Railway is mentioned in Field Orders No. 1, which direct that "especial attention" be paid to its reconnaissance. This work should be entrusted to an officer's patrol so as to guarantee its successful performance. Mention of this also comes properly in the order of the advance-guard commander.

To the east of the line of march lies the town of West Point. This place should be reconnoitered by a force larger than a small patrol. Another platoon from the vanguard could perform this reconnaissance, and then march by way of Fort Hill, 2–28–26–24–22–20–36–38–40, etc., parallel to the main line of march and covering the left bank of Salt River and Mill Creek. There are a number of side roads leading out to the east from this road, and if this flanking detachment were composed of only one squad, but few small patrols or scouting parties could be sent to reconnoiter each road without completely frittering away the strength of the party, or else so delaying its advance that it would be unable to keep pace with the main advance-guard. Intermediate roads should be covered by small patrols, sent out from the vanguard and maintaining connection with the two flanking patrols above mentioned.

The use of two platoons has now been arranged. Assigning two troops to the vanguard would permit the vanguard commander to detach two platoons for flanking detachments and retain one and one-half troops for use on the

main line of the advance and on the roads branching from it. This division of the squadron gives:

Vanguard: Troops A and B, First Cavalry.

Reserve: Troops C and D, First Cavalry.

The command of the vanguard would devolve upon the senior captain on duty with the troops assigned to it, but he should be mentioned by name in the order, so that there could be no question upon the part of officers or noncommissioned officers as to whom they should send their reports to when out with patrols. The position of Major A. B. C., as advance-guard commander, is properly with the reserve, so that he would retain command of that body himself. Nevertheless he should mention this position in his orders so that messengers would know where to find him without delay.

Having outlined his plan for the following day, Major A. B. C. may either distribute his orders on the evening of the 13th of August, or he may wait till the following morning. Field Orders No. 1 provide for the assembling of the squadron ready to march by 6 A. M. on the morning of the 14th. By calling his troop commanders together a few minutes before 6 o'clock, he will be able to give them their orders so that they can march off at once, with the orders fresh in their minds. If, during the night, additional information about the enemy should come, or any change be made in the orders from brigade headquarters, he could incorporate such change in his orders the following morning and not be compelled to announce that previous orders issued the night before had to be modified. Hence, it will be best to give his orders verbally to his troop commanders just before the squadron moves out from Dogwood.

Field Orders No. 1 state that the brigade will march in the direction of Vine Grove, Kentucky. The advance of the brigade into the enemy's country is dependent upon a number of contingencies, none of which can be foreseen. Hence, Major A. B. C. can only fix the road by which his vanguard is to march, leaving the destination to be determined as the circumstances of the case may arise, or as may be fixed by further orders from brigade headquarters.

Major A. B. C., therefore, directs that his officers assemble at 5:50 A. M., August 14th, to receive orders; the squadron to be formed ready to march at 6 A. M. The orders issued follow:

ADVANCE-GUARD ORDERS, No. 1.

FIRST SQUADRON FIRST CAVALRY,
DOGWOOD, INDIANA, 14 August, '04, 5:50 A. M.

Distribution of Troops:
1. Vanguard.
Captain L. M.
Troops A and B.
2. Reserve.
Troops C and D.

1. The enemy is concentrating in the vicinity of Bowling Green, Kentucky, and has established supply depots at various points in that State along the line of the Illinois Central Railway.

Our main army is in the vicinity of Corydon, Indiana.

Our brigade will cross into Kentucky with a view to gaining information of the enemy, and finding and destroying his depots.

2. This squadron will act as advance-guard to the brigade, and will reconnoiter for the enemy and his depots.

3. The vanguard will march at once and cross the Ohio River by the ponton bridge to Greenley, Kentucky, whence it will proceed via 1-3-B, and the Louisville & Nashville Pike toward Vine Grove, Kentucky. It will reconnoiter the country for a distance of three miles on either side of the line of march. One platoon will be detached to march via the road Pilcher's Landing—15-13-21-23-25-59-61-79-77-89-91, reconnoitering as far west as Otter Creek. One platoon will be charged with the reconnaissance of West Point and the line of Salt River and Mill Creek. An officer's patrol will reconnoiter the line of the Illinois Central Railway. Intermediate roads will be covered by small patrols.

4. The reserve will follow the vanguard without distance as far as Greenley, Kentucky, where it will halt until the vanguard shall have gained 1,200 yards.

5. Reports will reach the advance-guard commander at the head of the reserve.

By order of Major C.
W. H. R.,
1st Lieut. and Squadron Adjt. 1st. Cavalry, Adjutant.

Verbally to assembled troop commanders.
Copy to Adjutant-General First Brigade.

EXERCISE ON THE TERRAIN. ADVANCE AND REAR GUARDS.

General Situation.

(Troops Imaginary.)

A Brown corps is concentrating at Atchison.

A Blue corps is marching north along the Missouri River from Kansas City, Kansas.

Special Situation (Brown).

One Brown division has not arrived at Atchison. In order to enable this division to reach Atchison before the enemy can attack that point the Brown commander sends a provisional cavalry brigade south to meet and retard the advance of the Blue corps.

This provisional brigade has arrived at Fort Leavenworth. You have command of the advance-guard, which consists of one squadron, of four troops, of one hundred men each, with orders to proceed via Pope and Grant Avenues to Leavenworth, thence south along the Leavenworth-Kansas City Road. Upon encountering the enemy you are to take advantage of every opportunity to retard his advance so that the main body of the cavalry can prepare and occupy a defensive position.

SHEET 1.

Question.—Describe the position and formation of your advance-guard when the main body is at the corner of Pope and Grant Avenues.

SHEET 2.

Your advance party from near Grant Hill reports three of the enemy's infantry patrols in sight near the northern edge of Leavenworth.

Question.—What information will you endeavor to obtain?

SHEET 3.

You have ascertained that the enemy has a large force and that he is advancing along Grant Avenue.

Question 1.—What action will you take?

Question 2.—What disposition will you make of your advance guard?

SHEET 4.

The enemy has deployed a large force and is preparing to attack. You must withdraw.

Question 1.—Describe the manner of your withdrawal.

Kickapoo

Kickapoo Island

Fairmount

ATCHISON TOPEKA & SANTA FE R.R.

TO ATCHISON

KANSAS CENTRAL R.R.

Salt Creek

Leavenworth City

Missouri

on the Garden Road, each consisting of four men and a non-commissioned officer. The support would be about, at this time, 700 yards in rear of the reserve on Grant Avenue. There should be a right and left flanking party from the support—the first on Farragut Avenue, about Rabbit Point, and the second on Prison Lane. The rear party would just be leaving Pope and South Merritt Hills, with the point and flankers preparing to retire.

MANEUVER WITH TROOPS.

ADVANCE AND REAR GUARDS. SHEET 1.

General Situation.

A division of the Blue army is in camp about twenty miles north of Fort Leavenworth, on the west of the Missouri River. A division of the Brown army is in camp about twenty miles south of Fort Leavenworth, on the west of the Missouri River.

Special Situation (Blue).

A report having been received by the division commander to the effect that a large number of arms intended for the enemy is hidden in the Missouri Pacific depot, at Leavenworth, a special reconnaissance of one squadron has been sent to capture the arms. The reserve of the advance-guard, marching via West End Parade, Farragut Avenue and Fifth Street has reached the West End Parade, when you receive orders to relieve the advance guard (imaginary) with your troop and proceed to Leavenworth. Accordingly, you will form advance-guard at 1:30 P. M. to-day and proceed over the route designated.

Note: When recall is ordered by the senior umpire, the troops will be assembled and marched back to the West End Parade and dismissed.

MANEUVER WITH TROOPS.

ADVANCE AND REAR GUARDS. SHEET 2.

General Situation.

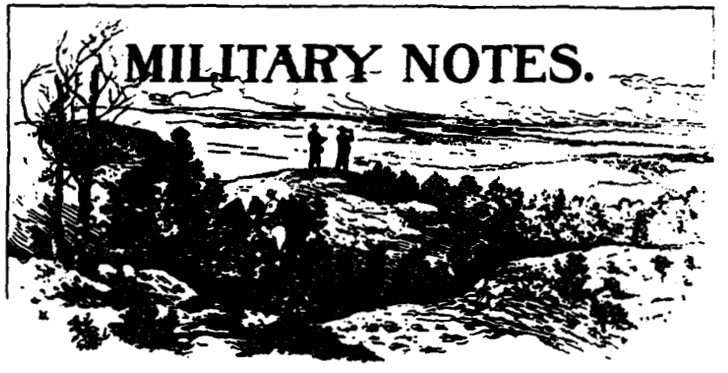
A division of the Blue army is in camp about twenty miles north of Fort Leavenworth on the west side of the Missouri River. A division of the Brown army is in camp about twenty miles south of Fort Leavenworth on the west side of the Missouri River.

Special Situation (Brown).

A report having been received by the division commander, to the effect that a large number of arms, intended for the enemy, is hidden in the old Post Exchange building at Fort Leavenworth, a special reconnaissance of one squadron has been sent out to capture the arms. The reserve of the advance-guard, marching via Leavenworth, Fifth Street, Farragut Avenue and West End Parade has reached the corner of Dakota and Fifth Streets, when you receive orders to relieve the advance-guard (imaginary) with your troop. Accordingly you will form advance-guard at 1:45 P. M. to-day and proceed over the route designated.

Note: When recall is ordered by the senior umpire the troops will be assembled and marched back to the West End Parade and dismissed.

Refer to Fort Leavenworth map, and large scale map in JOURNAL No. 54.



THE COLT'S REVOLVER.

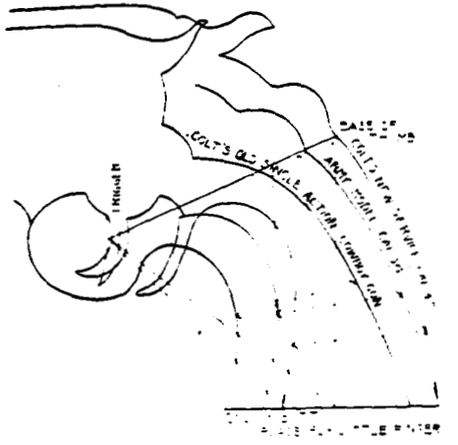
By Captain ALONZO GRAY, Fourteenth Cavalry.

IT is interesting to make a comparison of the different models of the Colt's revolver, and to consider how they affect the cavalry service.

1st. The "cowboy gun," single action, caliber .45, the model in use by the army up to about 1892. The general outline of the different makes of this model is the same, the only difference being in minor details, such as attaching the ejectors. The caliber is all right. It is better expressed by saying that it is not too small. The chief objection to the pistol is its ejector, which blows off, and is slow of action. I recently armed my troop with this pistol, on account of its caliber, and about half of the ejectors have blown off. A serious objection to it is, that it constantly shoots loose. The shape is such that it is easily manipulated (see triangle No. 1, cut), the relative distances between trigger, base of thumb and butt being such that a man with a short clumsy hand can cock it easily by placing the little finger under-

neath the butt. To sum up this pistol, its shape is good, its caliber excellent, its mechanism very poor, the single action being no particular disadvantage.

2d. The present Army Model, caliber .38, (see triangle No. 2, cut) has a better mechanism, but every cavalry officer will admit that it was a great mistake to reduce the caliber. The single action feature is not so desirable as No. 1 on account of its larger triangle. This triangle is enlarged by reason of the trigger's being set forward to give greater leverage to the double action. The mechanism is somewhat delicate, and no ordinary soldier has any business taking it apart. I might here say that I consider any length of barrel



over five inches as superfluous and a nuisance. An effort has been made to make this an arm of precision, and it is no doubt more accurate than No. 1, as proved by the fact that my troop this year averaged twenty per cent. less armed with No. 1 than it averaged last year armed with No. 2. However, as we used black powder, I am not prepared to say that a smokeless powder will not give better results. I believe it will. I have no objection to the double action, but I do not regard it as essential. If a man had a stiff or lame hand, the double action would be better.

3d. The so-called "New Service" revolver is in many ways an improvement. I learn that the name "New Ser-

vice" is one adopted by the manufacturers, and not, as many suppose, because there is any intention on the part of the War Department to adopt it. The caliber is all right; the length of barrel is good; the mechanism is splendid and much less liable to get out of repair than the caliber .38. An ordinary soldier can clean it inside without any damage to the pistol. The double action feature is easier for the reason that the trigger is set farther forward than it is on the caliber .38, thus increasing the length of leverage, but the triangle is thereby enlarged. This triangle is further enlarged by making the butt three-eighths of an inch longer; thus the triangle, formed by the first finger on the trigger, the little finger under the butt and the thumb on the hammer, is so great that the hand of ordinary size cannot readily manipulate the piece.

In using the double action, many men can only reach the trigger with the tip of the first finger; and, in using the single action, few men can place the thumb on the hammer and the little finger underneath the butt. The extra length of the butt can be remedied by simply cutting it off. There is no mechanism in the lower half. If the but were cut off one-half inch, the revolver would be all right for single action, and the double action feature is not important.

The swivel for a lanyard is good, and should be retained. The lanyard should be issued, and the open cowboy holster should be adopted for use on the right side, with the butt carried to the rear.

During my service here I have repeatedly seen soldiers riding through a bunch of Moros with their revolvers reversed in the holsters so that they could get a quick shot. It is often just as important for a cavalryman to get a quick shot as it is for a cowboy.

I now get to my pet hobby, which is caliber.

It would be interesting to take a census of the opinions of all cavalry officers and learn just how they stand on this subject. If they, with few exceptions, all want a .45 caliber, and I believe they do, there is no logical reason why they should not have it. We are the persons that have to fight with the weapon and whose lives are dependent upon its effectiveness. Nobody need talk about precision. One wants his opponent to stop when he is hit, and one would take no more satisfaction in being killed by a European after he had been fairly hit than one would in being cut down by a Moro.

This "New Service" model, if a half inch were cut off the end of the butt, is the best yet put out by the Colt people. There is every reason why it should be adopted and issued with smokeless powder and leaden bullets; and there is absolutely no reason why it should not be adopted and issued at once.

MALABANG, MINDANAO, P. I.,
May 10, 1904.

THE WEBLEY-FOSBERY AUTOMATIC REVOLVER.

BY CAPTAIN GEORGE VIDMER, ELEVENTH CAVALRY.

I AM not writing this article to bring up a discussion of the merits of the large caliber pistol, for I believe that the majority of officers who have had actual experience during the last few years, will uphold me in the statement that the small caliber revolver, or pistol, is a failure.

The .38 caliber belongs to this class, and I believe we committed a grave error in ever giving up the .45, even though the style was antiquated. We must have stopping power; not a shock that will stop for a short time—not a nervous shock, but a good, hard knock-out blow for both man and beast. We do not need a long-range weapon; one that will shoot up to seventy-five yards is sufficient. The pistol is needed at a short range only—the greater number of times under twenty-five yards. Then we need one that will shoot quickly.

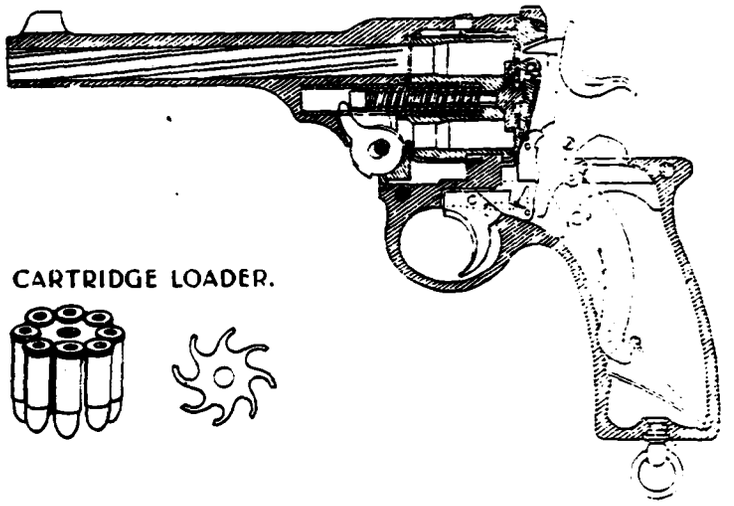
While on duty at the St. Louis Exposition, I came across Webley & Scott's exhibit, and I believe, as do many other officers who have seen the revolver, that they have the weapon for our service.

Webley has for many years made revolvers for the British Colonial service, and we all know the excellence of the W. & C. Scott & Sons guns. These two firms have consolidated, and their manufactures have carried off the highest awards, and their name guarantees a first-class article.

The revolver in question is so simple and readily understood that it seems hardly necessary to give more than a short description of its general points and workings.

The weapon is the outcome of a long series of experiments directed to secure a combination of some of the ad-

SECTION OF REVOLVER AT HALF COCK



CARTRIDGE LOADER.

vantages of automatic pistols with the qualities possessed by the ordinary service revolver. In any double-action revolver the cylinder's rotating and the hammer's rising by the pull on the trigger secure a mechanical rapidity of fire, whereas in the Webley-Fosbery those actions are performed automatically through the instrumentality of recoil. The recoil of the shot does not open the breech; it merely does the cocking, revolves the cylinder one-half a division, or one-half the revolution necessary to bring a fresh cartridge under the hammer, and compresses a spring which in its reaction revolves the cylinder the other necessary half divi-

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It is the intention to correct this list with every issue. If any errors are noted it will be conferring a favor if you will call attention to them.

The Association is anxious to increase its membership and in its efforts to do this all the members can give their assistance. If you know of any prospective members or subscribers, or any person who might be interested in the JOURNAL, the Council will be glad to have the address so that a copy of the JOURNAL may be mailed.

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Burnett, George R., 1 lt. ret., Iowa City, Ia.
Burroughs, James M., 1 lt. 12 cav., Manila, P. I.
Bush, F. S., lt., Peoria, Ill.
Butler, James S., 1 lt. sig. corps, Manila, P. I.
Butler, Matt C., jr., capt. 7 cav., Camp Thomas.
Butler, Rodman, 2 lt. 6 cav., Ft. Keogh, Mont.
Byram, Geo. L., capt. 6 cav., Ft. Meade, S. Dak.
Cabaniss, A. A., capt. 24 inf., Ft. Missoula.
Cable, Wm. A., lt., 103 W 55th st., New York.
Cabell, De Rosey C., capt. 1 cav., Ft. Clark, Tex.
Caldwell, R. C., 1 lt. 7 cav., Camp Thomas, Ga.

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Collins, Thos. D., maj., Gainesville, Tex.
Comly, George B., 1 lt. 3 cav., West Point.
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Conrad, Julius T., capt. 3 cav., Chester, Pa.
Converse, G. L., capt. ret., 25 E. state st., Columbus, Ohio.
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Craycroft, Wm. T., 1 lt. ret., Dallas, Texas.
Cress, Geo. O., capt. 4 cav., Orchard Lake, Mich.
Crimmins, M. L., 1 lt. 19 inf., Ft. Leavenworth.
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Crosby, Herbert B., capt. 14 cav., Manila, P. I.
Crowder, E. H., col. j. a., Washington, D. C.
Crozier, Wm., brig. gen., Washington, D. C.
Cruse, Thos., maj. Q. M. dept., St. Louis.
Cullen, D., 1 lt. 3 cav., Ft. Assininiboine, Mont.
Culver, C. C., 1 lt. 3 cav., Ft. Assininiboine, Mont.
Cunningham, T. H., 2 lt. 8 cav., Jefferson Bks.
Curry, W. L., capt., Columbus, O.
Cusack, Joseph E., capt. 12 cav., Manila, P. I.
Dade, A. L., capt. 13 cav., Manila, P. I.
Dallam, S. F., capt. 5 cav., Ft. Huachuca, Ariz.
Dalton, H. F., 1 lt. 6 inf., Ft. Leavenworth.
Danforth, C. H., 1 lt. 17 inf., Manila, P. I.
Davidson, A. H., 1 lt. 13 cav., Manila, P. I.
Davis, B. O., 2 lt. 10 cav., Ft. Washakie, Wyo.
Davis, C. O., capt., Corsicana, Tex.
Davis, E., 1 lt. 11 cav., Ft. Des Moines, Iowa.
Davis, F. E., 2 lt. 5 cav., Jefferson Bks, Mo.
Davis, G. B., brig. gen., Washington, D. C.
Davis, Ira D., capt., Houston, Tex.
Davis, M. F., capt. 1 cav., Ft. Leavenworth.
Davis, Norman H., 2 lt. 14 cav., Manila, P. I.
Davis, T. F., lt. col. 30 inf., Ft. Logan H. Roots, Ark.
Davis, W., brig. gen. ret., The Albion, Baltimore, Md.
Day, Clarence R., capt. 5 cav., Macon, Mo.
Dean, W., 1 lt. 15 cav., Ft. Ethan Allen, Vt.
Degen, F. A., 1 lt. 12 cav., Manila, P. I.
Deitrick, L. L., 1 lt. 3 cav., Manila, P. I.
Dickman, J. T., capt. 9 cav., War Dept. Washington, D. C.
Disque, B. P., 1 lt. 3 cav., Ft. Leavenworth.
Dixon, V. D., 1 lt. 5 cav., Ft. Wingate, N. Mex.
Dockery, A. B., lt. 5 cav., Ft. Wingate, N. M.
Dodd, G. A., lt. col. 10 cav., 1826 Filbert st., Philadelphia.
Dodge, C., Congan, 10 E 76 st., New York.
Dodge, Francis S., brig. gen., Washington, D. C.
Dodge, T. A., lt. col. ret., Room 717, 253 Broadway, New York City.
Dolan, T. J., capt., 321 Walnut st., Philadelphia.
Donaldson, T. Q., capt. 5 cav., Ft. Sill, O. T.
Donovan, A. E., vet. n art., Vancouver Bks.
Dorcy, B. H., 1 lt. 4 cav., Presidio, Monterey, Ca.
Dorst, J. H., col. 3 cav., Ft. Assininiboine.
Dougherty, C. A., 2 lt. 15 cav., Manila, P. I.
Drake, C. B., capt. 14 cav., Manila, P. I.
Drew, Clarence B., 1 lt. 14 cav., Manila, P. I.
Duff, Robert L., capt. 9 cav., Ft. Riley.
Ducher, H. M., vet n., Peekskill, N. Y.
Duvall, W. P., maj. art., Washington, D.
Dyer, Ed. H., maj., Burlington, Vt.
Early, Orson L., 2 lt. 5 cav., Ft. Riley.
Eaton, W. R., lt., box 952, Denver, Col.
Edgerly, Winfield S., col. 2 cav., Manila, P. I.
Edmunds, C. W., lt., 425 Walnut st., Philadelphia.
Edwards, Frank A., maj. 4 cav., Rome, Italy.
Edwards, Frank B., 1 lt. art., Ft. Hamilton.
Edwards, Frank B., 1 lt. 4 cav., St. Paul, Minn.
Edwards, W. W., 2 lt. 10 cav., Ft. Robinson, Neb.
Elliott, S. H., capt., 1 cav., Ft. Des Moines, Ia.
Ellis, R. B., 1 lt. 14 cav., Manila.
Ettinge, LeRoy, capt. 15 cav., Ft. Ethan Allen.
Ely, E. J., 2 lt. 15 cav., Ft. Ethan Allen, Vt.
Ely, H. E., capt. 28 inf., Ft. Leavenworth.
Engel, E., 2 lt. 9 cav., Ft. Leavenworth, Kan.
English, E. G., 2 lt. 5 cav., Ft. Apache, Ariz.
Enos, Copley, 2 lt. 1 cav., Ft. Sam Houston, Texas.
Enslow, R. S., lt. 10 cav., Ft. Washakie, Wyo.
Erwin, J. B., maj. 9 cav., Ft. Leavenworth.
Estes, Geo. H., jr., capt. 20 inf., Manila, P. I.
Estv, Thos. B., 2 lt. 9 cav., Jefferson Bks.
Eustes, H. L., lt., 1410 Jackson ave., New Orleans, La.
Evans, E. W., capt. 8 cav., Jefferson Bks, Mo.
Evans, Geo. H., capt. ret., 226 Ophelia st., Pittsburg, Pa.
Fair, John S., 1 lt. 9 cav., Ft. Leavenworth.
Farber, Chas. W., capt. 9 cav., 513 Broadway, Albany, N. Y.
Farmer, Chas. C., jr., 1 lt. 10 cav., Ft. Leavenworth.
Farnsworth, Chas. S., capt. 7 inf., Manila, P. I.

Farnum, F. H., 2 lt. 11 inf., Ft D. A. Russell.
Faulkner, A. C., 1 lt. art., Ft. Du Pont, Del.
Fechét, Jas. E., 1 lt. 9 cav., Jefferson Bks.
Fenton, C. W., capt. paymr (cav.), Manila.
Fisher, Ronald E., 2 lt. 14 cav., Manila.
Fitch, Roger S., 1 lt. 1 cav., Ft. Leavenworth.
Fleming, L. J., capt. Q. M., San Antonio, Tex.
Fleming, R. J., capt. 10 cav., Ft. Robinson.
Foerster, L., 1 lt. 5 cav., Ft. Huachuca, Ariz.
Foltz, Fred S., capt. 2 cav., Manila, P. I.
Fonda, Ferd. W., 1 lt. 10 cav., Ft. Mackenzie.
Foote, S. M., capt. art., Ft. Myer, Va.
Forbush, W. C., col. ret., The Markeen, 1291 Main St., Buffalo, N. Y.
Foreman, Milton J., maj., 3412 Vernon Ave., Chicago.
Forsyth, Jas. W., maj. gen. ret., Columbus, O.
Forsyth, Wm. W., capt. 6 cav., Ft. Keogh, Mont.
Fortescue, G. R., 1 lt. 10 cav., Washington.
Foster, A. B., capt. 19 inf., Vancouver Bks.
Foster, Fred. W., maj. 5 cav., Whipple Bks, Ariz
Foster, Leo F., capt. art., Ft. Fremont, S. C.
Fountain, S. W., lt. col. 4 cav., World's Fair Station, St. Louis, Mo.
Foy, Robert C., 1 lt. 1 cav., West Point, N. Y.
Fraser, Walter, vet. 13 cav., Manila, P. I.
Freeman, H. B., brig. gen. ret., Leavenworth.
Fulle, C. J., capt., Salinas, Cal.
Fuller, A. M., capt. 9 cav., 406½ W. Depot st., Knoxville, Tenn.
Fuller, Ezra B., maj., ret., Columbia, S. C.
Funston, Fred., brig. gen., Chicago, Ill.
Furlong, J. W., capt 6 cav., Ft. Meade, S. D.
Galbraith, J. G., maj. 1 cav., Des Moines, Ia.
Gale, George H. G., maj. 1. g. d., Star Building, St. Louis.
Gardenhire, W. C., 2 lt. 15 cav., Ft. Ethan Allen.
Gardner, Edwin F., lt. col. ret., Holliston, Mass.
Gardner, John H., capt. 2 cav., Manila, P. I.
Garity, George, 1 lt. 2 cav., Gen. Hospital, Presidio, San Francisco.
Garrard, Joseph, lt. col. 14 cav., Manila, P. I.
Gaston, Joseph A., maj 1 cav., Ft. Sam Houston, Texas.
Gatley, Geo. G., capt. art., Manila, P. I.
Ganjot, Julien E., 1 lt. 11 cav., Ft. Des Moines Iowa.
Gibbins, H., 1 lt. 9 cav., Ft. Leavenworth.
Gillem, Alvan C., 1 lt. 4 cav., Presidio S. F., Cal.
Glasgow, Wm. J., capt. 13 cav., Governor's Island, N. Y.
Gleaves, S. R., 1 lt. 1 cav., Ft. Clark, Tex.
Godfrey, E. S., col. 9 cav., Ft. Riley, Kan.
Godson, W. F. H., 1 lt. 10 cav., Ft. Robinson.
Godwin, E. A., lt. col. 9 cav., Jefferson Bks.
Going, R. B., 1 lt. 15 cav., Ft. Ethan Allen.
Goldman, H. J., capt. 5 cav., Ft. Apache, Ariz.
Goodale, Geo. S., capt. 28 inf., Manila.
Goode, George W., capt. 1 cav., Ft. Clark, Tex.
Goodin, J. A., capt. 7 inf., Manila, P. I.
Goodspeed, Nelson A., 2 lt. 3 cav., Ft. Assiniboine, Mont.
Gordon, Geo. A., col., Savannah, Ga.
Gordon, Wm. W., 2 lt. 2 cav., Manila, P. I.
Gould, J. H., vetn. 11 cav., Ft. Riley, Kas.
Graham, Alden M., 2 lt. 1 cav., Ft. Clark, Tex.
Granger, R. S., 1 lt. art., Ft. Riley.
Grant, Frederick D., brig. gen., Governor's Island, New York.
Grant, Walter S., 1 lt. 3 cav., St. Paul, Minn.
Gray, Alonzo, capt. 14 cav., Manila, P. I.
Greely, Adolphus W., brig. gen., Washington, D. C.
Gresham, John C., maj. 15 cav., Ft. Ethan Allen, Vt.
Grierson, B. H., brig. gen. ret., Jacksonville, Ill.
Grierson, C. H., capt. 10 cav., Ft. Robinson.
Griffith, F. D., jr., 2 lt. 6 cav., Ft. Meade, S. Dak.
Griggs, Everett G., capt., Tacoma, Wash.
Greene, J. C., capt., 1222 Walnut st., Philadelphia, Pa.
Green, F. W., col., 142 Logan ave., Denver, Col.
Grout, Paul, 2 lt., 233 Pacific st., Brooklyn, N. Y.
Grove, W. R., capt. sub. dept., Kansas City.
Grunert, G., 2 lt. 11 cav., Ft. Des Moines.
Grutzman, W. R., vetn. 15 cav., Ft Ethan Allen, Vt.
Guest, John, capt. ret., 1620 19th st. N. W., Washington, D. C.
Guilfoyle, J. F., maj. mil. sec. dept., Manila.
Haight, C. S., 1 lt. 4 cav., Ft. Leavenworth.
Haldeman, Horace L., lt. col., Real Estate Bldg, Philadelphia, Pa.
Hall, C. G., capt. 5 cav., Whiterocks, Utah.
Hall, W. P., brig. gen., Washington, D. C.
Hammond, Andrew G., maj. 3 cav., World's Fair Station, St. Louis.
Hammond, C. L., 4627 Greenwood ave., Chicago.
Hanna, M. E., capt. 3 cav., Ft. Assiniboine, Mont.
Harbord, James G., col. Phil. Constab, Manila, P. I.
Hardeman, L., capt. 11 cav., Ft. Des Moines, Ia.
Hardie, Francis H., maj 14 cav., Manila, P. I.
Hardin, E. E., maj. 7 inf., Manila, P. I.
Harper, Roy B., capt. 3 cav., Ft. Assiniboine, Mont.
Harris, E. R., 2 lt. 11 cav., Ft. Des Moines, Ia.
Harris, F. W., capt. 4 cav., Vienna, Austria.
Harris, Moses, maj. ret., Life bldg., N. Y. City.
Harrison, Ralph, capt. c. s. (cav.), Manila, P. I.
Hart, A. C., 1 lt. 10 cav., Ft. Robinson, Nebr.
Hartman, J. D. L., capt. 1 cav., Ft. Leavenworth.
Harvey, Charles G., 1 lt. 2 cav., Manila, P. I.
Hasson, John P., 1 lt. 6 cav., Ft. Meade, S. D.
Hathaway, C. E., 2 lt. 9 cav., Ft Riley, Kan.
Hawkins, Clyde E., capt. 2 cav., Manila, P. I.
Hawkins, H. S., capt. sub. dept., Denver, Colo.
Hay, W. H., capt. 10 cav., Ft. Robinson, Nebr.
Hayden, John L., capt. art., Presidio, San Francisco.
Hayden, Ralph N., 2 lt. 7 cav., Camp Thomas.
Hayne, Paul T., jr., 1 lt. 14 cav., Manila, P. I.
Hazzard, Oliver P. M., 1 lt. 2 cav., Manila, P. I.
Hazzard, Russell T., 1 lt. 1 cav., Ft. Clark, Tex.
Heard, J. W., capt. 3 cav., Ft. Assiniboine.
Heaton, Wilson G., 1 lt. 13 cav., Manila, P. I.
Hedekin, C. A., capt. 3 cav., Ft. Apache, Ariz.
Heiberg, E. R., capt. 6 cav., Ft. Meade, S. Dak.
Heidt, Grayson V., 1 lt. 14 cav., Manila, P. I.
Hein, O. L., lt. col. ret., 2137 R st. N. W., Washington, D. C.
Heintzelman, S., 1 lt. 6 cav., Ft. Leavenworth.
Hemphill, J. E., 1 lt. sig. corps, Nome, Alaska.
Hennessey, P. J., 2 lt. 5 cav., Ft. Huachuca.
Henry, Guy V., capt. 12 cav., Manila, P. I.
Henry, J. B., jr., 2 lt. 4 cav., Presidio, S. F., Cal.
Herman, Fred J., 1 lt. 9 cav., Ft. Riley, Kan.
Hero, W. S., lt., 622 Commercial Place, New Orleans, La.
Herron, Joseph S., capt. 2 cav., Manila, P. I.
Hershler, F. W., 1 lt. 4 cav., Presidio, S. F., Cal.
Hickey, J. B., maj. 11 cav., 2d 3d ave., N. Y.
Hickman, E. A., 1 lt. 1 cav., Ft. Sam Houston, Tex.
Hickok, H. R., capt. 15 cav., Ft. Ethan Allen.
Hilgard, M. E., 1 lt. 16 inf., Ft. McPherson, Ga.
Hill, Wm. P., vetn. 12 cav., Manila, P. I.
Hill, Zeph T., maj., Denver, Col.
Hirsch, Harry J., capt. 20 inf., Manila, P. I.
Hodges, H. L., 2 lt. 1 cav., Ft. Clark, Texas.
Hodgson, F. G., maj. Q. M. D., Vancouver Bks.
Hoff, J. V. R., lt. col. M. D., Ft. Leavenworth.
Holabird, S. B., brig. gen. ret., 1311 P st. N. W., Washington.
Holbrook, L. R., capt. 5 cav., Ft. Leavenworth.
Holbrook, W. A., capt. 5 cav., Whipple Bks.
Holcomb, Freeborn P., lt. 14 cav., Manila, P. I.
Holliday, Milton G., 2 lt. 15 cav., Ft. Ethan Allen.
Hope, F. W., lt., Broad and Front sts., Red Bank, N. J.
Hopkins, A. T., lt., Watertown, S. D.
Hoppin, C. B., maj. 15 cav., Ft. Ethan Allen, Vt.

Hornbrook, J. J., capt. 12 cav., Manila, P. I.
Horton, W. E., capt. Q. M. D., Manila, P. I.
Howard, H. P., capt. 14 cav., Manila, P. I.
Howard, J. H., 2 lt. 9 cav., Jefferson Bks.
Howell, J. R., col., Bohemian Club, San Francisco.
Howze, R. L., capt. 6 cav., World's Fair Station, St. Louis.
Hoyle, George S., maj. ret., care Amer. Book Co., Atlanta, Ga.
Huggins, E. L., brig. gen. ret., Muskogee, I. T.
Hughes, J. B., capt. 4 cav., Presidio, Monterey
Hughes, Martin B., col. 1 cav., Ft. Clark, Tex
Hume, John K., 2 lt. 14 cav., Manila, P. I.
Hunsaker, I. L., 2 lt. 3 cav., Ft. Apache, Ariz.
Hunt, Levi P., maj. 13 cav., Washington.
Hunter, G. K., maj 6 cav., Ft. Meade, S. Dak
Huntt, Geo. G., col. ret., Carlisle, Pa.
Huston, James., 1 lt. 10 cav., Ft. Washakie, Wyo
Hyde, A. P. S., 1 lt. art., Ft. Terry, N. Y.
Hyer, B. B., capt. 13 cav., Manila, P. I.
Ingerton, W. H., capt., Amarillo, Tex.
Irons, J. A., maj. insp. gen., Star Bldg., St. Louis, Mo.
Jackson, Henry, brig. gen. ret., Leavenworth.
Jackson, R. F., 1 lt. 3 cav., Washington, D. C.
Jacobs, Douglas H., 2 lt. 14 cav., Manila, P. I.
Jeffers, S. L., 1 lt. ret., 522 Scott, Little Rock, Ark.
Jenkins, J. M., capt. 5 cav., Ft. Huachuca, Ariz
Jennings, T. H., 2 lt. 7 cav., Ft. Myer, Va.
Jervey, E. P., jr., capt. 10 cav., Oklahoma City.
Jewell, Chas. H., vetn. 13 cav., Manila, P. I.
Jewell, James M., 2 lt. 14 cav., Manila, P. I.
Johnson, A., capt. 13 inf., Alcatraz Island, Cal.
Johnson, C. P., capt. 10 cav., Ft. Robinson, Neb
Johnson, F. O., maj. 2 cav., Manila, P. I.
Johnson, F. C., 1 lt. 2 cav., Manila, P. I.
Johnson, H. B., 2 lt. 3 cav., Ft. Assiniboine.
Johnston, G., 1 lt. sig. corps, Manila, P. I.
Johnston, J. A., gen., 2111 Mass. ave., Washington, D. C.
Joanston, W. T., capt. 15 cav., Ft Ethan Allen
Jones, C. R., 273 S. Fourth st., Philadelphia.
Jones, F. M., 1 lt. 9 cav., Ft. Riley, Kan.
Jones, S. G., capt. 11 cav., Ft. Des Moines, Ia.
Jordan, H. B., 1 lt. O. D., Frankford, Pa.
Joyce, K. A., 2 lt. 6 cav., Ft. Leavenworth.
Jurich, A., jr., 2 lt. 4 cav., Presidio, Monterey
Karnes, Wm L., 1 lt. 6 cav., Omaha, Neb.
Keller, Frank, 2 lt. 8 cav., Jefferson Bks, Mo
Kelly, Wm., cant. eng., Ft. Leavenworth.
Kelly, W., jr., capt. 9 cav., West Point, N. Y.
Kelly, William H., capt., 140 Glenway st., Dorchester, Mass.
Kendall, Henry F., maj. 12 cav., 1164 Thurman st., Portland, Oreg.
Kendall, Henry M., maj. ret., Soldiers' Home, Washington.
Kenuedy, W. B., maj. ret., 607 Carondelet st., Los Angeles, Cal.
Kennington, Alfred E., capt. 7 cav., Camp Thomas, Ga.
Kerr, James T., lt. col. mil. sec. dept., Washington.
Kerr, J. B., col. 12 cav., Lexington, Ky.
Kerth, Monroe C., capt. 28 inf., Manila, P. I.
Ketcheson, J. C., Leavenworth, Kan.
Keyes, Allen C., 2 lt. 14 cav., Manila, P. I.
Keyes, E. A., 2 lt. 6 cav., 1970 3d st., San Diego, Cal.
Kilbourne, Louis H., 2 lt. 6 cav., Ft. Sill, Okla.
Kilhau, Julius N., capt. sub. dept., 2d and Olive, St. Louis.
Kimball, Gordon N., 1 lt. 12 cav., Ogden, Utah.
King, Albert A., 1 lt. 8 cav., Ft. Sill, Okla.
King, Charles, brig. gen., P. O. box 735, Milwaukee, Wis.
King, Ed L., capt. 2 cav., Colon, Panama.
Kirkman, Hugh, 1 lt. 8 cav., Ft. Sill, Okla.
Kirkpatrick, George W., capt. 15 cav., Ft. Ethan Allen, Vt.
Kline, J., brig. gen. ret., The Angus, St. Paul, Minn.
Knight, J. T., maj. qm. dept., Philadelphia.
Knox, R. S., 1 lt. 24 inf., Ft. Missoula, Mont.
Knox, Thomas M., 1 lt. 4 cav., Ft. Walla Walla.
Knox, T. T., col. ret., N. Y. Life Bldg., New York City.
Koch, Stanley, 2 lt. 5 cav., Ft. Huachuca, Ariz.
Kochersperger, S. M., capt. 2 cav., Manila, P. I.
Koehler, L. M., capt. 4 cav., Presidio, S. F., Cal.
Koester, F. J., capt. 15 cav., Ft. Ethan Allen.
Kramer, J. L., maj., Parkersburg, W. Va.
Kromer, L. B., 1 lt. 11 cav., West Point, N. Y.
Krumm, Herbert Z., 2 lt. 1 cav., Ft. Clark, Tex.
Lacey, F. E., jr., capt. 1 inf., Ft. Wayne, Mich.
Lahm, F. P., 2 lt. 5 cav., West Point.
Lake, R. M., capt., Alcott P. O., Denver.
Landis, J. F. R., capt. 1 cav., Ft. Clark, Tex.
Langston, T. G., 1st lt. a. t., Ft. Riley, Kan.
Langhorne, G. T., capt. 11 cav., Manila, P. I.
Lanza, C. H., capt. art. corps, Birmingham, Ala.
Leach, S. S., lt. col. eng., 2128 Penn ave., Washington.
Lear, B., jr., 1 lt. 15 cav., Ft. Ethan Allen, Vt.
Leary, E. M., capt. 9 cav., Ft. Riley, Kan.
Lebo, Thos. C., col. 14 cav., Presidio, S. F., Cal.
Lechtman, C., col., Kansas City, Mo.
Lee, Fitzhugh, brig. gen. ret., Norfolk, Va.
Lee, Fitzhugh, jr., 1 lt. 12 cav., Manila, P. I.
Lee, Geo. M., 1 lt. 7 cav., Ft. Riley, Kan.
Lee, J. M., brig. gen., San Antonio, Tex.
Lesher, R. W., 2 lt. 5 cav., care mil. sec., Washington.
Lewis, [illegible] lt. 23 inf., Manila.
Lewis, J. H., 1 lt. 5 cav., Ft. Wingate, N. M.
Lewis, LeRoy D., 2 lt. 4 cav., Ft. Walla Walla.
Lewis, T. J., capt. 2 cav., 914 W. Jefferson st., Louisville, Ky.
Lincoln, James R., brig. gen., Ames, Iowa.
Lindsley, J. R., capt. 15 cav., Ft. Ethan Allen.
Lindsley, Elmer, capt. 1 cav., Ft. Clark, Tex.
Lininger, Clarence, 2 lt. 1 cav., Ft. Clark, Tex.
Lippincott, Aubrey, 1 lt. 14th cav., Manila, P. I.
Litteurant, W. T., capt. 12 cav., Manila, P. I.
Liverman, H. T., capt., Mansfield, La.
Livermore, R. L., capt. 1 cav., Ft. Bayard, N. M.
Lochridge, P. D., capt. 15 cav., Manila, P. I.
Lockett, James, maj. 4 cav., Presidio, Monterey
Lockwood, J. A., capt. ret., 50 7th ave., N. Y.
Logan, A., col., 1 3d ave., Pittsburg, Pa.
Lomax, L., lt., Telluride, Col.
Long, John D., lt. 2 cav., Manila, P. I.
Longstreet, Jas., jr., 1 lt. 1 cav., Manila, P. I.
Lott, Abraham C., capt. 6 cav., Ft. Meade, S. D.
Loud, John S., lt. col. ret., 1346 Irving st., N. W., Washington, D. C.
Love, Moss L., 2 lt. 2 cav., Manila, P. I.
Love, Robt. R., 2 lt. 9 cav., Ft. Riley, Kan.
Lovell, Geo. E., 1 lt. 7 cav., Camp Thomas, Ga.
Lowe, A. W., maj., 1 Olive st., Lynn, Mass.
Lowe, Wilson, maj., Upper Alton, Ill.
Lowe, Wm. L., 1 lt. 3 cav., Manila, P. I.
Ludington, M. L., maj. gen. ret., Skaneateles, Onondaga Co., New York.
Luedeke, E. C., lt., 245 Seminary ave., Chicago.
Luhn, Wm. L., 1 lt. 11 cav., Ft. Riley, Kan.
Lull, C. T. E., lt. art., Ft. Worden, Wash.
Lusk, Wm. V., vetn. 2 cav., Manila, P. I.
Lyon, C. A., col., Sherman, Texas.
McAndrews, Jos. R., 1 lt. 1 cav., Ft. Sam Houston, Tex.
MacArthur, Arthur, maj. gen., San Francisco.
Macklin, J. E., lt. col. 3 inf., Ft. Liscum, Alaska.
MacKinlay, W. E. W., 1 lt. 1 cav., Washington, D. C.
MacLeod, Norman, lieut., North American Bldg., Philadelphia.
McCabe, E. R. W., 2 lt. 6 cav., Ft. Keogh, Mont.
McCain, Wm. A., 2 lt. 8 cav., Ft. Riley, Kas.
McCarthy, D. F., maj. Q. M. D., Ft. Leavenworth
McCaskey, D., 1 lt. 4 cav., Presidio, S. F., Cal.
McCaskey, Wm. S., brig. gen., Manila, P. I.
McClernand, E. J., maj., mil. sec. dept., St. Louis.
McClintock, J., lt. 5 cav., Ft. Wingate, N. M.
McClure, A. N., 1 lt. 5 cav., Ft. Duchesne Utah.
McClure, N. F., capt. 5 cav., Ft. Huachuca, Ariz.

McCord, J. H., lt. col., St. Joseph, Mo.
McCormick, L. S., maj. 7 cav., Ft. Leavenworth.
McCormack, W. H., capt. 9 cav., Ft. Riley, Kan.
McCoy, Frank R., capt. 3 cav., Manila, P. I.
McCrossin, R. J., 614 Nat. Bank Bldg., Birmingham, Ala.
MacDonald, A., vetn. 11 cav., Ft. Des Moines, Ia.
MacDonald, G. H., capt. 1 cav., West Point.
McDonald, J. B., capt. 3 cav., Ft. Assininiboine.
McEnhill, Frank, 2 lt. 2 cav., Manila, P. I.
McFadden, J. F., lt., 121 Chestnut st., Philadelphia.
McGee, Oscar A., 1 lt. 2 cav., Manila, P. I.
McGonnigle, J. A., lt., Leavenworth, Kan.
McKenney, Henry J., 1 lt. 14 cav., Manila, P. I.
McKee, Will J., gen., Indianapolis.
McKinley, James F., 1 lt. 14 cav., Manila, P. I.
McLeer, J. C., lt., 475 Halsey st., Brooklyn.
McMullen, J. L., 2 lt. 15 cav., Waynesville, N. C.
McMurdo, C. D., vetn. 10 cav., Ft. Robinson.
Macnab, A. M., 2 lt. Phil. Scouts, Manila, P. I.
McNally, R. E., 1 lt. 3 cav., Ft. Yellowstone, Wyo.
McNamee, M. M., capt. 15 cav., 1515 Larimer st., Denver.
McNarney, F. T., 1 lt. 6 cav., Ft. Meade.
Macomb, A. C., capt. 5 cav., Ft. Huachuca, Ariz.
Macomb, M. M., maj. art. corps, Washington.
Maize, Sidney D., 2 lt. 3 cav., Boise Brks, Idaho.
Mangum, W. P., jr., 2 lt. 15 cav., Ft. Ethan Allen, Vt.
Mann, H. E., 2 lt. 7 cav., Camp Thomas, Ga.
Marshall, F. C., capt. 15 cav., West Point, N.Y.
Martin, I. S., 2 lt. 15 cav., Ft. Ethan Allen, Vt.
Martin, J. W., lt., 1709 Walnut st., Philadelphia.
Martin, W. F., 1 lt. 2 cav., Manila, P. I.
Mason, Chas. W., lt. col. 25 inf., Ft. Douglass, Utah.
Matthias, W. W., Walden, N. Y.
Mann, M. P., col. 20 inf., Manila, P. I.
Mayo, Charles R., 2 lt. 12 cav., Manila, P. I.
Meade, W. G., 2 lt. 11 cav., Ft. Riley, Kan.
Mearns, Robert W., capt. 20 inf., Manila, P. I.
Mears, Fred., 2 lt. 5 cav., Ft. Leavenworth.
Megill, S. C., 2 lt. 8 cav., Jefferson Brks, Mo.
Meltzer, C. F., lt., 1282 Wilcox ave., Chicago.
Mercer, W. A., capt. 7 cav., Carlisle, Pa.
Merritt, W., maj. gen. ret., 1822 R. I. ave. N.W., Washington, D. C.
Metcalf, W. S., gen., Lawrence, Kan.
Meyer, Oren B., capt. 14 cav., Manila, P. I.
Michie, R. E. L., capt. 12 cav., War College, Washington.
Miller, A. M., capt. 9 cav., Ft. Riley, Kan.
Miller, Archie, 1 lt. 6 cav., Ft. Keogh, Mont.
Miller, E. L., lt., 510 Madison ave., Albany.
Miller, O., lt., 501 Russell ave, Cleveland, O.
Miller, Troup, lt. 7 cav., Camp Thomas, Ga.
Miller, Wm. H., lt. col., Q.M. dept., Chicago, Ill.
Mills, Albert L., brig. gen., West Point, N. Y.
Mills, A., brig. gen. ret., Washington, D. C.
Mills, S. C., col. insp. gen. dept., Washington.
Milton, A. M., 2 lt. 4 cav., Presidio, Monterey.
Miner, C. W., brig. gen. ret., 70 Lexington ave., Columbus, Ohio.
Mitchell, George E., capt. 13 cav., Manila, P. I.
Mitchell, H. E., 2 lt. 3 cav., Boise Brks, Idaho.
Moffet, Wm. P., 1 lt. 13 cav., Ft. Des Moines, Ia.
Mohn, A. J., 2 lt. 4 cav., Jefferson Brks, Mo.
Monohan, J. J., capt., West Chelmsford, Mass.
Moore, Francis, brig. gen., San Francisco.
Moore, J. A., lt. art. corps, 308 Bull st., Savannah, Ga.
Morey, Lewis S., 1 lt. 12 cav., Manila, P. I.
Morgan, G. H., maj. 9 cav., University of Minnesota, Minneapolis, Minn.
Morgan, John M., capt. 12 cav., Manila, P. I.
Morris, W. V., 1 lt. 6 cav., West Point, N. Y.
Morrison, C. E., col., Parkersburg, W. Va.
Morrison, G. L., lt. 5 cav. Ft. Apache, Ariz.
Morrow, H. M., maj. j. a., San Francisco, Cal.
Morrow, J. J., capt. eng., Washington, D. C.
Morton, C., col. 7 cav., Ft. Myer, Va.
Morton, C. E., 1 lt. 16 inf., Ft. Leavenworth.
Moseley, G. V. H., 1 lt. 1 cav., San Antonio, Tex.
Moses, G. W., capt. pay dept., Kansas City, Mo.
Mott, T. B., capt. art. corps, Paris, France.
Mowry, P., 1 lt. 15 cav., Ft. Ethan Allen, Vt.
Mueller, Albert H., 2 lt. 8 cav., Ft. Riley, Kan.
Mueller, R. W., capt., Milwaukee, Wis.
Müller, C. H., 2 lt. 10 cav., Ft. Robinson, Neb.
Mumma, Morton C., 1 lt. 2 cav., Manila, P. I.
Munro, H. N., 2 lt. 1 cav., Ft. Clark, Tex.
Munro, J. N., capt. 3 cav., Lake City, Minn.
Murphy, P. A., capt. 1 cav., Ft. Clark, Tex.
Murphy, Will H., capt., Corsicana, Tex.
Murray, C. H., maj. 4 cav., San Francisco, Cal.
Myers, Hu B., 1 lt. 5 cav., Ft. Huachuca, Ariz.
Nance, John T., capt. 9 cav., University of Cal., Berkeley, Cal.
Naylor, C. J., 2 lt. 4 cav., Presidio, Monterey.
Naylor, W. K., capt. 9 inf., Ft. Leavenworth.
Nichols, Wm. A., maj. insp. gen'l dept., St. Louis, Mo.
Nicholson, Wm. J., major 7 cavalry, Camp Thomas, Ga.
Nimen, A. C., capt. 5 cav., Ft. Huachuca, Ariz.
Noble, Robert H., capt. 3 inf., Manila, P. I.
Nockolds, C., vetn. 1 cav., Ft. Sam Houston, Tex.
Nolan, D. E., capt. 30 inf., Washington, D. C.
Nolan, Robert M., 1 lt. 1 cav., A. & N. Hosp., Hot Springs, Ark.
Norman, Wm. W., capt., 2 Punjab cav.
Norton, Clifton R., 2 lt. 15 cav., Ft. Ethan Allen.
Norvell, Guy S., 1 lt. 8 cav., Jefferson Brks, Mo.
Norvell, S. T., lt. col. ret., Tallahassee, Fla.
Notmeyer, Wm. C., lt., Pierre, S. D.
Noyes, Charles R., maj. 9 inf., Omaha, Neb.
Noyes, Henry E., col. ret., 2913 Van Ness ave., San Francisco, Cal.
Oakes, James, brig. gen. ret., The Portland, Washington.
O'Connor, Charles M., maj. 14 cav., Manila, P. I.
Odell, A. S., 1 lt. 11 cav., Ft. Riley.
Oden, G. J., 1 lt. 10 cav., Ft. Mackenzie, Wyo.
Offley, Edward M., 2 lt. 12 cav., Ft. Clark, Tex.
Oliver, L. W., 1 lt. 8 cav., Ft. Riley, Kan.
Oliver, Prince A., 2 lt. 5 cav., Ft. Apache, Ariz.
Oliver, Robt. Shaw, asst. sec. of war, Washington, D. C.
Olmstead, E., North Broad st., Elizabeth, N. J.
Orton, Edward P., capt. 2 cav., Manila, P. I.
O'Shea, John, capt. 4 cav., Jefferson Brks, Mo.
Otis, Frank L., 1 lt. 4 cav., Presidio, S. F., Cal.
Ott, Frederick M., capt., Harrisburg, Pa.
Overton, W. W., 2 lt. 15 cav., Ft. Ethan Allen.
Paddock, G. H., lt. col. 5 cav., 194 s Clark st., Chicago, Ill.
Payan, W. P., capt., 90 Terrace, Buffalo, N. Y.
Page, Charles, brig. gen. ret., 330 Dolphin st., Baltimore, Md.
Palue, Wm. H., capt. 7 cav., Ft. Leavenworth.
Palmer, B., 1 lt. 10 cav., Ft. Robinson, Neb.
Palmer, H. W., lt., 2711 Prospect st., Tacoma.
Parker, C., jr., lt., 765 Broad st., Newark, N. J.
Parker, Dexter Wm., Meriden, Conn.
Parker, F. Le J., capt. 12 cav., Ft. Leavenworth.
Parker, James, lt. col., adj. genl's dept., star bldg., St. Louis, Mo.
Parker, J. S., capt. 10 cav., Ft. Mackenzie, Wyo.
Parker, Samuel D., 50 State st., Boston, Mass.
Parsons, L., capt. 8 cav., Fayetteville, Ark.
Patterson, W. L., 1 lt. Porto Rico regt., Cayey
Pattison, H. H., capt. 3 cav., Ft. Assininiboine.
Paxton, R. G., capt. 10 cav., Ft. Robinson, Neb.
Pearson, D. C., lt. col. 7 cav., Camp Thomas, Ga.
Pearson, S. S., 1 lt. 9 cav., Ft. Riley, Kan.
Penn, Julius A., capt. 7 inf., Manila, P. I.
Penfield, W. G., lt. ord. dept., Watertown Arsenal, Watertown, Mass.
Perkins, A. S., 1 lt. 1 cav., Ft. Clark, Texas.
Perkins, Chas. E., capt., Nogales, Arizona.
Perrins, Wm. A., maj., box 7, Roxbury, Mass.
Perry, Alex. W., capt. 1 cav., Ft. Des Moines.
Perry, Oran, gen., Indianapolis.
Pershing, J. J., capt. 15 cav., war col., Washington, D. C.
Pershing, W. B., 1 lt. 4 cav., Ft. Walla Walla.

Phillips, Ervin L., capt. 13 cav., Manila, P. I.
Pilcher, W., 1 lt. 9 cav., Ft. Bayard, N. M.
Pitcher, J., maj. 6 cav., Ft. Yellowstone, Wyo.
Place, Olney, 2 lt. 6 cav., Ft. Meade, S. D.
Plummer, E. P., maj. 3 inf., Ft. Egbert, Alaska.
Poillon, Arthur, 1 lt. 14 cav., Manila, P. I.
Pond, G. E., col. Q. M. dept., Washington, D. C.
Poore, Benj. A., capt. 6 inf., Ft. Leavenworth.
Pope, Francis H., capt. 14 cav., Manila, P. I.
Pope, Wm. R., 2 lt. 2 cav., Manila, P. I.
Power, E. L., capt., Lebanon, Ore.
Powers, Robert B., capt. 7 cav., Camp Thomas.
Pratt, H. C., 2 lt. 4 cav., San Francisco, Cal.
Pratt, Richard H., brig. gen., Union League, Philadelphia.
Prentice, J., 2 lt. art. corps, Fremont, S. C.
Price, G. E., 2 lt. 10 cav., Ft. Robinson, Neb.
Prichard, G. B., jr., capt. 5 cav., Ft. Huachuca.
Purington, G. A., 1 lt. 8 cav., Ft. Sill, Okla.
Purviance, S. A., 1 lt. 4 cav., Ft. Leavenworth.
Quinlan, D. P., lt. 9 cav., Corvallis, Ore.
Ramsey, Frank De W., capt. 9 inf., 22 Jackson Place, Washington, D. C.
Randolph, H. M., maj., Denver, Col.
Randolph, W. F., maj. gen. ret., 1317 N. H. ave. N. W., Washington.
Rankin, R. C., maj., Las Vegas, New Mex.
Rawle James, lt., Bryn Mawr, Pa.
Rawle, Wm. B., lt. col., 211 S. 6 st., Philadelphia.
Raymond, J. C., capt. 2 cav., Ft. Meade, S. D.
Raysor, M. C., 1 lt. 5 cav., Ft. Apache, Ariz.
Read, B. A., 1 lt. 6 cav., Ft. Meade, S. Dak.
Read, G. W., capt. 9 cav., Ft. Riley, Kan.
Read, John H., jr., 2 lt. 14 cav., Manila, P. I.
Read, R. D., jr., maj. 10 cav., Ft. Robinson, Neb.
Reaney, R. J., 1 lt. 2 cav., Manila, P. I.
Reed, Wm. O., 1 lt. 6 cav., World's Fair, St. Louis.
Reeves, Jas. H., capt. 14 cav., Manila, P. I.
Remington, F., 301 Webster ave., New Rochelle, New York.
Renziehausen, W. R., 1 lt. 4 cav., Presidio, Monterey, Cal.
Rethorst, Otto W., 1 lt. 5 cav., Ft. Sill, Okla.
Reynolds, Robt. W., 2 lt. 13 cav., Manila, P. I.
Rhea, J. C., 1 lt. 7 cav., Camp Thomas, Ga.
Rhodes, A. L., 2 lt. art. corps, Ft. Strong, Mass.
Rhodes, C. D., capt. 6 cav., Washington, D. C.
Rice, S., capt. 3 cav., Ft. Assininiboine, Mont.
Rich, A. T., 2 lt. 28 inf., Ft. Sam Houston, Tex.
Richard, J. J., capt. 28 Walling st., Providence, R. I.
Richmond, H. S., capt., 747 Madison ave., Albany, N. Y.
Ridgway, C., capt. art., Ft. Snelling, Minn.
Riggs, Kerr T., 2 lt. 14 cav., Manila, P. I.
Righter, J. C., jr., 1 lt. 4 cav., Presidio, San Francisco, Cal.
Ripley, Henry L., maj. 8 cav., Ft. Sill, Okla.
Ripple, Ezra H., Scranton, Pa.
Rivers, T. R., capt. 4 cav., Presidio, S. F., Cal.
Rivers, Wm. C., capt. 1 cav., Manila, P. I.
Robe, Chas. F., brig. gen. ret., San Diego, Cal.
Roberts, T. A., capt. 7 cav., Ft. Myer, Va.
Roberts, Wm. M., 1 lt. M. D., Ft. Sill, Okla.
Robertson, S. W., 2 lt. 15 cav., Ft. Ethan Allen.
Rockenbach, S. D., capt. 12 cav., Manila, P. I.
Rockwell, V. LaS., 1 lt. 11 cav., Ft. Des Moines.
Rodgers, A., lt. col. 15 cav., Ft. Ethan Allen, Vt.
Rodney, D. R., 2 lt. 5 cav., Ft. Apache, Ariz.
Rodney, G. B., 1 lt. 5 cav., Ft. Apache, Ariz.
Rodney, W. H., 2 lt. 1 cav., Ft. Clark, Tex.
Roe, C. F., maj. gen., 280 Broadway, N. Y.
Roome, B. R., lt., Pier 32 New E River, N. Y.
Roscoe, David L., 2 lt. 1 cav., Ft. Clark, Tex.
Rosenbaum, O. B., capt. 26 inf., Ft. Sam Houston, Tex.
Ross, J. O., 1 lt. 15 cav., gen. hosp., Washington Brks, D. C.
Rothwell, T. A., 2 lt. 5 cav., Ft. Duchesne.
Roudiez, Leon S., capt. q. m. dept., Ft. Riley, Kan.
Rowan, H., maj. art., Ft. Terry, N. Y.
Rowell, M. W., capt. 11 cav., Manila, P. I.
Rucker, Louis H., brig. gen. ret., Los Angeles.
Ruggles, F. A., 2 lt. 15 cav., Ft. Ethan Allen, Vt.
Ruhlen, G., lt. col. Q. M., Washington, D. C.
Russell, E. K., maj. ret., 1005 S. 49 st., Philadelphia.
Russell, F. W., lt., Plymouth, N. H.
Russell, Geo. M., 2 lt. 14 cav., Manila, P. I.
Russell, G., maj. ret., Grand Hotel, N. Y.
Rutherford, S. McP., capt. 4 cav., Ft. Walla Walla, Wash.
Ryan, James A., capt. 15 cav., Ft. Ethan Allen.
Ryan, John P., capt. 6 cav., Ft. Leavenworth.
Ryan, T. F., 1 lt. 11 cav., Ft. Leavenworth.
Sands, G. H., capt. 6 cav., Ft. Meade, S. Dak.
Sargent, H. H., capt. 2 cav., College Sta., Tex.
Sawtelle, C. G., jr., capt. 8 cav., Jefferson Brks.
Saxton, Albert E., capt. 8 cav., Jefferson Brks.
Sayre, Farrand, capt. 8 cav., Ft. Leavenworth.
Sayre, R. H., lt., 9 E 40 st., New York.
Schenck, A. D., lt. col. art. corps, Ft. Stevens, Oregon.
Scherer, L., capt. 4 cav., War Col., Washington, D. C.
Schermerhorn, F. E., capt., 1420 Chestnut st., Philadelphia.
Schofield, R. McA., capt. Q. M. D., St. Paul.
Schroeter, A. H., 1 lt. 1 cav., Ft. Sam Houston, Texas.
Schultz, Theo., 1 lt. 14 cav., Manila, P. I.
Schuyler, Walter S., lt. col. 2 cav., care Mil. Sec., Washington.
Schwan, Theo., brig. gen. ret., 1300 20th st. N. W., Washington.
Schwarzkopf, Olof, vetn. 3 cav., Ft. Assininiboine, Mont.
Scott, Geo. L., maj. 15 cav., Quigium, Minn.
Scott, Hugh L., maj. 14 cav., Manila, P. I.
Scott, W. J., 1 lt. 15 cav., Ft. Robinson, Neb.
Scott, W. S., capt., col. Phil. Constabulary, Manila.
Scott, W. S., capt. Q. M. D., Cheyenne, Wyo.
Seoane, C. A., 1 lt. 3 cav., Ft. Yellowstone, Wyo.
Service, S. W., vetn. 10 cav., Ft. Mackenzie, Wyo.
Sharpe, H. G., col. sub. dept., Washington, D. C.
Sheldon, R., capt. 18 inf., Ft. Leavenworth.
Shelley, J. E., 1 lt. 11 cav., Ft. Des Moines, Ia.
Sheridan, M. V., brig. gen. ret., 1916 Jefferson Place, Washington.
Sheridan, P. H., 2 lt. 5 cav., Ft. Huachuca.
Shunk, Wm. A., maj. 8 cav., Delafield, Wis.
Sibley, F. W., maj. 2 cav., Manila, P. I.
Sickel, H. G., maj. 12 cav., Manila, P. I.
Sidman, F. E., 2 lt. 9 cav., Ft. Sill, Okla.
Sievert, H. A., capt. 9 cav., Ft. Leavenworth.
Silliman, Robt. H., 1 lt. 15 inf., Monterey, Cal.
Sills, William G., capt. 1 cav., Ft. Sam Houston, Tex.
Simms, C. W., col., Ronceverte, Greenbrier Co., W. Virginia.
Simpson, W. L., capt. 6 inf., Ft. Leavenworth.
Simpson, W. S., capt., Bovina, Texas.
Sirmyer, Edgar A., capt. 5 cav., Ft. Riley, Kan.
Slavens, T. H., capt. Q. M. D., Washington.
Slocum, H. J., maj. 2 cav., Manila, P. I.
Slocum, S. L. H., capt. 5 cav., Jefferson Brks, Mo.
Smalley, Howard R., 2 lt. 2 cav., Manila, P. I.
Smedberg, Wm. R., maj. ret., 1611 Larkin st., San Francisco.
Smedberg, W. R., jr., capt. 14 cav., Manila, P. I.
Smith, A. L., lt. col. sub. dep., St. Louis, Mo.
Smith, Cornelius C., capt. 14 cav., Manila, P. I.
Smith, Frederick McC., lt. art. corps, Ft. Williams, Me.
Smith, Gilbert C., 1 lt. 2 cav., Manila, P. I.
Smith, Harry R., co., Clarksburg, W. Va.
Smith, M. C., capt. 14 cav., Manila, P. I.
Smith, Selwyn D., 1 lt. 5 cav., Ft. Apache, Ariz.
Smith, Talbot, 2 lt. 5 cav., Ft. Riley, Kan.
Smith, Walter D., 2 lt. 11 cav., Ft. Des Moines.
Smith, Walter H., 2 lt. 15 cav., Manila, P. I.
Somerville, Geo. R., 2 lt. 14 cav., Manila, P. I.
Spaulding, O. L., capt. art. corps, Ft. Leavenworth.
Sproule, Wm. A., vetn. art., Ft. D. A. Russell.

Stanclift, Ray J., vetn. 8 cav., Jefferson Bks.
Starr, C. G., maj. inf., Manila, P. I.
Stedman, C. A., col. 5 cav., Ft. Huachuca, Ariz.
Steele, Matt. F., capt. 6 cav., Ft. Leavenworth.
Steever, Edgar Z., col. 4 cav., Ft. Walla Walla.
Sterling, E. K., 2 lt. 3 cav., Ft. Assiniboine.
Sterrett, R., 1 lt. 9 cav., Ft. Leavenworth.
Steunenburg, Geo., 1 lt. 13 cav., Manila, P. I.
Stevens, Chas. J., capt. 2 cav., Manila, P. I.
Stevenson, Wm. L., 2 lt. 11 cav., Ft. Des Moines.
Stewart, Cecil, capt. 4 cav., Portland, Oreg.
Stewart, C. W., lt. 5 cav., Ft. Huachuca, Ariz.
Stewart, T. J., brig. gen., Harrisburg, Pa.
Stiles, J. C., com. nav. bat., Brunswick, Ga.
Stockle, Geo. E., capt. 8 cav., Jefferson Bks.
Stodter, C. E., capt. 9 cav., Ft. Leavenworth.
Stopford, F. W., 1 lt. art., Ft. Monroe, Va.
Stott, Clarence A., 2 lt. 12 cav., Manila, P. I.
Straub, Oscar L., capt. art., Ft. Leavenworth.
Strong, F. S., capt. art., 1645 K st., Washington.
Strong, G., capt., 108 Dearborn st., Chicago.
Stryker, Geo. L., 2 lt. 6th cav., Ft. Meade, S. D.
Sturges, Dexter, 1 lt. 13 cav., Manila, P. I.
Sturges, Edw. A., 1 lt. 5 cav., Ft. Apache, Ariz.
Sues, Geo. W., capt., 4128 Ellis ave., Chicago, Illinois.
Sumner, S. S., maj. gen., Oklahoma City, Okla.
Suplee, E. M., capt. 14 cav., Davenport, Ia.
Sweezey, C. B., capt. 13 cav., Manila, P. I.
Swift, Eben, maj. 12 cav., Ft. Leavenworth.
Swift, Eben, jr., 1 lt. 11 cav., Ft. Leavenworth.
Swigert, Samuel M., col. ret., 2205 Green st., San Francisco.
Symington, John, 2 lt. 11 cav., Ft. Riley, Kan.
Tate, Daniel L., capt. 3 cav., Boise Bks, Idaho.
Tatum, H. C., 2 lt. 7th cav., Camp Thomas, Ga.
Taulbee, Joseph F., 2 lt. 2 cav., Manila, P. I.
Taulbee, M. K., 1 lt. P. R., Cayey.
Taylor, C. W., maj. 13 cav., Phœnix Bldg., St. Paul, Minn.
Taylor, T. B., 1 lt. 11 cav., Ft. Des Moines.
Taylor, W. R., 1 lt. 3 cav., Ft. Assiniboine.
Tempany, J., vetn. 9 cav., Ft. Riley, Kan.
Terrell, H. S., 1 lt. 10 cav., Ft. Mackenzie, Wyo.
Thayer, Arthur, capt. 3 cav., West Point.
Thomas, C. O., jr., 1 lt. 1 cav., Manila, P. I.
Thomas, Earl D., col. 11 cav., Ft. Des Moines.
Thurston, N. B., lt. col., 176 W. 87th st., N. Y.
Tilford, J. D., 1 lt. 1 cav., Ft. Leavenworth.
Tompkins, C. H., brig. gen. ret., 1427 20th st., Washington, D. C.
Tompkins, D. D., 2 lt. 10 cav., Ft. Mackenzie.
Tompkins, E. R., 1 lt. 11 cav., Ft. Des Moines.
Tompkins, F., capt. 11 cav., Ft. Des Moines.
Towar, Albert S., col. pay dept., Chicago.
Towles, Churchill, maj., Houston, Tex.
Townsend, C. C., capt., Greeley, Col.
Townsend, P. C., Corsicana, Tex.
Townshend, Orval P., capt. P. R., Cayey.
Traub, Peter E., capt. 5 cav., Ft. Leavenworth.
Treat, Chas. G., lt. col., com. cadets, West Point.
Tremaine, Wm. C., 1 lt. 15 cav., Ft. Ethan Allen.
Tripp, S. O., lt. col., Peoria, Ill.
Trippe, P. E., capt. 12 cav., 110 E. Broad st. Richmond, Va.
Trout, Harry G., capt. 2 cav., Manila, P. I.
Troxel, Orlando C., 2 lt. 12 cav., Manila, P. I.
Tucker, W. F., lt. col. pay dept., Manila, P. I.
Turner, Fred. G., 1 lt. 6 cav., Ft. Meade, S. Dak.
Turnbull, W., 1 lt. M. D., Ft. Strong, Mass.
Tuthill, A. M., capt., Morenci, Ariz.
Tyner, Geo. P., 1 lt. 2 cav., Manila, P. I.
Uri, J. H., vetn. 6 cav., Ft. Meade, S. D.
Valentine, Wm. S., capt. 5 cav., Ft. Wingate.
Valliant, R. D., 2 lt. 3 cav., Ft. Assiniboine.
Van Deusen, G. W., capt. art., Manila.
Van Leer, S., 1 lt. 15 cav., Ft. Ethan Allen.
Van Natta, T. F., jr., 2 lt. 8 cav., Fort Sill, O. T.
Vans Agnew, B. S., vet. 5 cav., Ft. Apache, Ariz.
Van Voorhis, D., 1 lt. 3 cav., Ft. Leavenworth.
Varnum, C. A., maj. 9 cav., Ft. Riley, Kan.
Vestal, S. P., capt. 7 cav., Ft. Bayard, N. M.
Vidmer, Geo., capt. 11 cav., World's Fair Station, St. Louis.
Viele, C. D., brig. gen. ret., 2648 Orchard ave., Los Angeles, Cal.
Vierra, F. M., lt., Salinas, Cal.
Vroom, P. D., brig. gen. ret., Manhattan Club, New York.
Wade, James F., maj. gen., Governor's Island.
Wade, John P., capt 2 cav., Governor's Island.
Wagner, A. L., col., mil. sec. dept., 32 Jackson Place, Washington, D. C.
Wagner, H., lt. col. ret., 201 W. 43 st., N. Y. City.
Waite, H. De H., 1 lt. ret., Berkeley, Cal.
Walcutt, Chas. C., jr., capt. (cav.) qm. dept., Prescott, Ariz.
Waldo, Rhinelander, 1 lt. 17 inf., Manila, P. I.
Walker, K. W., capt. 15 cav., Ft. Ethan Allen.
Walker, Kirby, capt. 14 cav., Manila, P. I.
Walker, R. W., 1 lt. 5 cav., Ft. Huachuca, Ariz.
Wallach, R. R., 1 lt. 3 cav., Ft. Assiniboine.
Walsh, R. D., capt. 9 cav., Ft. Leavenworth.
Wampold, L., capt., 4830 Kimbark ave., Chicago.
Warburton, C. E., capt., 704 Chestnut st., Philadelphia.
Ward, E. M., capt., 43 South street, New York.
Ward, F. K., lt. col. 1 cav., Ft. Clark, Tex.
Warren, Rawson, 2 lt. 11 cav., Ft. Des Moines.
Wassell, Wm. H., capt. 22 inf., Manila, P. I.
Waterman, John C., capt. 7 cav., Grand Rapids.
Watrous, J. A., maj. ret., 272 Lyon st., Milwaukee.
Watson, Jas. W., capt. 10 cav., 737 Iberville st., New Orleans.
Watson, J., 1 lt. 8 cav., Jefferson Bks, Mo.
Watts, C. H., maj. 5 cav., Ft. Huachuca, Ariz.
Wells, A. B., brig. gen. ret., Geneva, N. Y.
Wells, B., capt., Telluride, Col.
Wesendorff, Max, capt. ret., 1075 Williams st., Elizabeth, N. J.
Wesson, Chas. M., 1 lt. 8 cav., West Point.
West, Chas., lt. col., Enid, Okla.
West, E. S., 1 lt. 7 cav., Ft. Myer.
West, F., lt. col., insp. gen., Oklahoma City.
West, P. W., capt. 11 cav., San Francisco.
Westmoreland, Wade H., 2 lt. 11 cav., Fort Riley.
Wetmore, W. B., maj., Allenhurst, N. J.
Weibrecht, Chas., lt. col., Alliance, O.
Weyrauch, Paul H., 2 lt. 14 cav., Manila, P. I.
Wheatley, Wm. F., 2 lt. 5 cav., Whipple Bks.
Wheeler, Fred, maj. ret., Mass. Inst. Tech., Boston, Mass.
Wheeler, H. W., maj. 11 cav., Ft. Des Moines.
Whigam, W. H., capt., 38 Loomis st., Chicago.
White, Geo. P., capt. (cav.) qm. dept. Presidio, San Francisco.
White, H. A., capt. 11 cav., Ft. Leavenworth.
Whitehead, H. C., capt. 10 cav., Ft. Robinson.
Whitesides, J. G., lt., 3rd floor Keith Bldg. Philadelphia, Pa.
Whitlock, F. C., 1 lt. 14 cav., West Point.
Whitman, W. M., capt. 13 cav., Manila, P. I.
Whitside, S. M., brig. gen. ret., Bethesda, Md.
Whitside, W. W., 1 lt. 15 cav., Ft. Ethan Allen.
Wieman, Henry, 176 Grove st., Brooklyn, N. Y.
Wilen, John W., 1 lt. 13 cav., Manila, P. I.
Williams, A. E., capt. 3 cav., Ft. Apache, Ariz.
Williard, Harry O., capt. 5 cav., 13th and Douglass sts., Omaha, Neb.
Wills, H. S., lt., 86 Allen st., Albany.
Wilson, J. C., maj., 144 22d st., Chicago, Ill.
Wilson, James H., brig. gen. ret., 1305 Rodney st., Wilmington, Del.
Winans, E. B., jr., capt. 4 cav., Ft. Walla Walla.
Windsor, Henry, jr., Revere Copper Co., Boston, Mass.
Winfree, S. W., 2 lt. 9 cav., Ft. Riley.
Winham, F. W., capt., Salinas, Cal.
Winn, John S., capt. 2 cav., Manila, P. I.
Winnia, C. C., 1 lt. 5 cav., Ft. Huachuca.
Wint, Theodore J., brig. gen., Omaha, Neb.
Winter, J. G., jr., 2 lt. 6 cav., Ft. Meade, S. Dak.
Winter, M. A., col., 339 Pennsylvania ave., Washington, D. C.
Winterburn, G. W., 1 lt. 9 cav., Ft. Riley.

Winters, Wm. H., 1 lt. 13 cav., Manila, P. I.
Wise, H. D., capt. 9 inf., Madison Bks, N. Y.
Wisser, J. P., maj. insp. genl. dept., S. F., Cal.
Wood, Edward E., col., West Point, N. Y.
Wood, John P., lt., 521 N. 22d st., Philadelphia.
Wood, Leonard, maj. gen., Manila, P. I.
Wood, Robert E., 1 lt. 3 cav., West Point, N. Y.
Wood, Thomas J., brig. gen. ret., maj. gen., 121 N. Main st., Dayton, Ohio.
Woodruff, Carle A., gen. ret., Raleigh, N. C.
Woodruff, Charles A., brig. gen. ret., 2802 Van Ness ave., San Francisco, Cal.
Woodruff, Wm. S., 1 lt. Porto Rico regt., Cayey.
Woodward, Samuel L., brig. gen. ret., 3710 Clemens ave., St. Louis, Mo.
Wotherspoon, W. W., lt. col. 14 inf., War Col., Washington, D. C.
Woude, A. J., 1 lt. 8 cav., Ft. Keogh, Mont.
Wright, E. S., capt. 1 cav., Ft. Clark, Tex.
Wright, Wm. R., lt., 71 Leonard st., New York.
Yates, A. W., capt. qm. dept., Portland, Me.
Yates, Wm., capt. 14 cav., Laramie, Wyo.
Young, E. C., col., Chicago.
Young, Samuel B. M., lt. gen. ret., gen. insp., Hot Springs, Ark.
Zane, Edmund L., 2 lt. 14 cav., Manila, P. I.
Zell, Edward M., 2 lt. 7 cav., Ft. Myer, Va.
Zinn, George A., maj. eng., Wheeling, W. Va.

Publisher's Notices.

"El Gran Gonzalo."

Officers and soldiers who have had their tastes for cigars of fine quality sharpened by a tour of duty in Manila, where such cigars can be had at a reasonable price, as well as those who have such taste independently of service in the Archipelago, will find probably the best American substitute for the Germinal Perfecto in Filogamo and Alvarez's product—El Gran Gonzalo. This excellent cigar can be purchased from any officers' club or post exchange.

"Alexander's Boots."

To invite the attention of the Journal's readers to Alexander's boots and shoes is like hinting to them that they ought to make the acquaintance of the Army Regulations or the Drill Book. Is there any person in the service who has not heard of Alexander's boots and shoes? But if there is we do not expect him to confess his ignorance.

J. P. Cooke & Co.

The Journal has had no more satisfactory work done for it than that which has been done by J. P. Cooke & Co., of Omaha. It can confidently recommend this firm to the patronage of all persons in need of rubber stamps or other articles manufactured by it. Post exchanges that employ metal checks will do well to order them from J. P. Cooke & Co.

The Brunswick-Balke-Collender Co.

Can any man have a higher aim in life than that of furnishing the means of healthy, honest enjoyment to his fellow man? How long and dreary the winter evenings would be in quarters and post exchanges if billiard and pool tables were not there! What name then is more surely enshrined in the American soldier's affection than that of the Brunswick-Balke-Collender Co?

"Polishine."

All time spent by a soldier in cleaning his equipment is time positively thrown away—*provided* he can keep his equipment bright and clean without such expenditure of time. And there is nothing that comes as near achieving this result as the use of Polishine.

sion, and brings the nearest cartridge exactly opposite the striker.

The cylinder and barrel are mounted so as to be capable of a backward and forward travel upon a kind of platform made by the handle. On the fall of the hammer and the firing of the cartridge, the backward energy of the recoil immediately slides the barrel and cylinder to the rear, the pressure being taken up by a long limb pivoted inside the stock, which is called the recoiling lever. Through the lever passes a pin encircled by a spiral spring, and the backward travel serves to cock the hammer and also to compress the spring. The cylinder and barrel are then carried forward, under the action of the spring-actuated recoiling lever, aided by the rebound from the recoil frame at the back of the stock, again to slide back by the force of the recoil on firing the next shot.

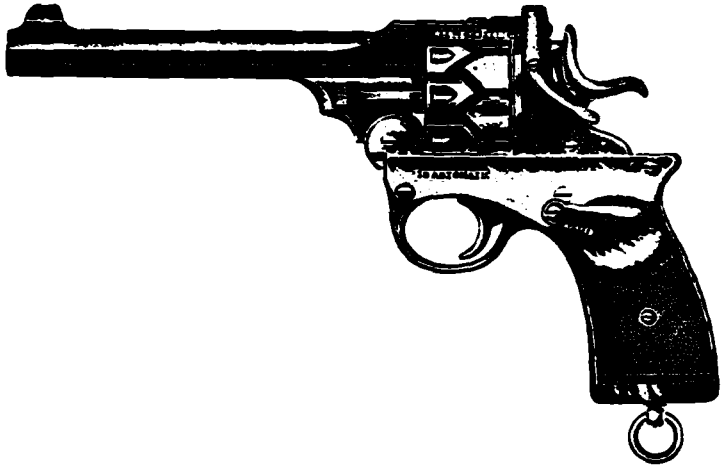
Roughly as I have sketched this, I think the principle has been made clear. It now remains to explain the revolution of the cylinder.

An extension of the trigger-guard passes upwards through the body of the revolver and is, of course, firmly fixed, by which I mean that it is in no way under the influence of the recoiling parts. A projection is formed on this extension, and is called the cylinder rotating stud. A glance at the cylinder shows a peculiarly shaped recess formed all around it, and it will be seen that the rotating stud, projecting from the body, must project into this recess.

At the moment of firing, the cylinder being in its forward position, the stud lies at the extremity of the straight portion of the recess nearest the hand of the shooter. Immediately afterwards the cylinder flies back under the influence of recoil, and is revolved until it comes to rest with the stud in position at the front. Under the influence of the return movement a further rotary motion then takes place, bringing the stud to the back and the cartridge into position to receive the blow of the hammer. Thus the necessary rotation is automatically imparted, half by the forward, half by the return travel of the recoiling parts.

The mechanism is very simple, is very strong and very

unlikely to get out of order, which is a great desideratum in a service weapon. The bullet being heavier than that of any other automatic pistol yet produced, has a greater stopping power, which is a considerable advantage at close quarters. The length of the revolver is twelve inches and the weight two pounds eight and one-half ounces. It fires a bullet of .455 diameter, weighing 265 grains. The six cartridges carried by the Webley-Fosbery can all be discharged with good aim in six seconds. In appearance the new revolver is very similar to an ordinary service one. The grip of the hand is much surer, because most of the recoil is absorbed by the pistol itself, which utilizes it for revolving the



cylinder to a fresh cartridge with each shot, at the same time leaving the hammer at full cock. Besides firing the .455 cartridge made for the pistol, which is charged with cordite, in case of emergency either of the following cartridges can also be used: .455 with 18 grs. of black powder, .265 grs. lead bullet; .450 with 13 grs. of black powder, .255 grs. lead bullet.

There is on the left of the stock a safety latch, just opposite the thumb. It can be operated, when the hammer is either at half or full cock, by locking the recoiling parts of the revolver to the body, so that the hammer does not rest

on the half cock, but is raised and held back by the cocking stud. The revolver can be carried at full cock, ready for action, and be perfectly safe, all that is necessary to bring it into action being to shove down the safety latch.

There is also provided a clip holding six cartridges, which enables the firer to load this revolver as quickly as any other automatic pistol. The chief advantage lies in the fact that the chambers can be reloaded simultaneously, the clip remaining with the cartridges, and upon breaking the revolver after firing, the clip and fired cases are ejected together, and a fresh clip can at once be inserted. These clips can be re-loaded.

After loading, the hammer can be left at half cock without using the safety latch and be perfectly safe. When it is desired to shoot, all that is necessary is to cock the hammer and pull the trigger, and then the automatic action begins.

This same firm makes the same pistol in .38 caliber, taking eight cartridges. The price is about twenty-five dollars in England for either pistol.

Reprints and Translations.

CAVALRY UPON THE REAR OF THE JAPANESE ARMY IN APRIL AND MAY, 1904.

TRANSLATED FROM "REVUE DU CERCLE MILITAIRE."
BY MAJOR EBEN SWIFT, TWELFTH CAVALRY.

AFTER the retreat of the Russian forces following the battle of Turentchen on the 1st of May, it will be remembered that considerable astonishment was expressed at a report that the Russian cavalry were still in Korea, and that they had taken possession of several places occupied by Korean and Japanese troops. The question was asked, whence came these troops and who were they? It is certain that the presence of this Russian force in Korea at the time when the main body was in full retreat at the north of the Yalu, was puzzling. The following account from the pen of the Russian Captain Eletse, who is attached to the staff of General Kuropatkin, explains this movement in detail:

The present war has already proved how hard it is to fight the Japanese. If it is true, it is because the latter unite to the knowledge of modern science all the fanaticism and stubbornness of the Russians, therefore it is necessary in order to bring good results to oppose them by these same qualities.

One of the best means of striking our adversaries, who possess such astonishing energy and tenacity, is the raid upon their rear and communications. One of the most brilliant raids, both in its execution and results is that of Lieutenant-Colonel Madritov into Korea, which I will now describe:

The principal object of the raid was to reconnoiter the northeast portion of Korea. To do this it was necessary to reach the rear of General Kuroki's army, concentrated upon the Yalu; to move rapidly into Korea towards the south; to examine the lines of defense of the enemy, and do as much harm as possible by attacking his flanks and destroying his supplies.

Colonel Madritov's detachment consisted of the following mounted troops: The Sixth Sotnia of the Oussouri regiment of Siberian Cossacks; one troop of Caucasian Cossack volunteers; several detachments of scouts from the First Rifle Regiment of Siberia, and the Fifteenth Rifle Regiment, to which were added fifty natives who were exclusively charged with the transmission of information to headquarters. The total was five hundred horsemen.

The train was reduced to the lowest limit and consisted entirely of pack animals. Colonel Madritov, of the General Staff, an officer who had gained great experience in the Boxer War, was chosen to command the detachment. Possessed of great courage, energy and coolness under embarrassing circumstances, this officer was a model chief for a partisan force. The Oussouri troop was commanded by Lieutenant Sosiedov with Cornet Serebriakov as his adjutant. The Caucasian troop was led by Lieutenant Girs, who likewise had taken part in the last war, and had a good knowledge of the country. His assistants were Lieutenant Linevitch, a brilliant young artillery officer and a son of the General of that name, and Lieutenant Savitch. The detachment of scouts of the First Rifle Regiment was under the command of Captain Bodisko, who had also been distinguished during the last war. Under him were Lieutenants Krouze, Eilers and Pioulovskii. The scouts of the Fifteenth Rifle Regiment were under Captain Bobrov, who was also an accomplished officer. His subordinates were Lieutenants Krasnenskii and Leparskii. The detachment including its chief, therefore, contained thirteen officers, a surgeon and some members of the Hospital Corps.

At the end of March the detachment left Mukden for Khouanjensian, where it stopped three days. Having learned

that there were no Japanese upon the proposed route, the detachment moved across the Yalu and entered Korea at Vianzygooumyn. From that point Captain Bobrov went with his own command and the Ourssouri Cossacks to reconnoiter in the direction of Piok-tan. Finding that the enemy had already left Piok-tan, Bobrov destroyed a lot of provisions and returned to the detachment.

On the same day the Caucasian troop reconnoitered towards Ouion. The detachment was well received at the town of Tchkhosan. The garrison of this town consisted of a hundred Korean soldiers under their colonel. Colonel Madritov invited the colonel and the chief official of the town to a banquet. The latter, after eating and drinking quite freely, went home and fled into the country. On that same night the bivouac of the detachment was attacked by Korean troops, who were driven off by the volleys fired by the guard.

Not satisfied with their perfidy on this occasion, the Koreans set fire to the town itself at several points. After having disarmed the garrison, Madritov continued in the direction of Kouaan and Kange. The prisoners and incendiaries captured by the Cossacks declared that the hostile attitude of the officials was caused by Japanese influence; that Japanese officers were acting as instructors for the garrisons in the country, and that five thousand Korean volunteers were ready to resist the Russian invasion. It was also found that the headquarters of the Korean force was at Kange.

The Caucasian Cossacks who had been sent to Ouion were also attacked by Koreans from ambush. These last were dispersed with heavy loss. The Cossacks had one killed and five wounded.

Madritov was surprised at the attitude of a population to which he had offered no injury, and he hesitated as to his line of conduct. On the one hand, to fulfill his duty, it would be necessary to advance as rapidly as possible toward the south; on the other hand, he wished to punish the Koreans as they deserved. He finally decided to carry out his principal mission and to leave the question of punishment to a later occasion. As Piok-tan was within the zone occupied by the Japanese, he marched directly towards the east by Tchkhosan, Kogosan, and Boudji.

In the meanwhile, the appearance of the Russian patrols in rear of the Japanese had been discovered. Madritov, therefore, left the road and took to the mountains, following narrow paths, upon which it was necessary to proceed in single file. It was also necessary to make numerous false trails in order to deceive the enemy. After a long and painful march, the detachment reached the road at Boudji, where the River Tchintchingan was crossed, and the detachment proceeded southward in the direction of Khitch-Khen. On the march the above mentioned river, which was supposed to be a second line of defense of the Japanese in rear of the Yalu, was explored by one patrol. The patrol reported that so far the river was not defended and that there were no garrisons upon its banks.

The city of Khitch-Khen was not occupied by the enemy, but contained large stores of provisions which had been collected by order of the Japanese chief commanding the district. The detachment took possession of these provisions, divided a portion among the native inhabitants and destroyed the remainder.

Further reconnaissance established that the rear of the Japanese line was open and undefended, and that all their troops were marching toward the Yalu. Evidently a Russian division thrown into Korea would have been sufficient to cause much injury and embarrassment to the Japanese.

The inhabitants of the country informed Madritov that a considerable battle had taken place at the mouth of the Yalu and that the Japanese had lost more than 2,000 killed. In support of this assertion, the natives declared that many inhabitants had been hired to carry the boxes containing the heads of the dead soldiers which had been sent to Japan. The bodies had been burned. It was added also that the Japanese wounded numbered at least 6,000.

Profiting by the fact that the enemy's rear was uncovered, Madritov resolved to advance upon his main line of communication, which passed through Viju-Anju-Pingyang. These cities and others were fortified, but occupied by rather

weak garrisons, varying in strength from 200 to 600 soldiers. Some places had a small amount of artillery.

The patrols likewise established that the Japanese had ceased landing their troops in Korea and had probably sent them to the north. It was evident that the army of Kuroki was intended to cover Korea from a Russian invasion, and to mask the movements of other armies operating against Port Arthur.

The population continued to show its hostility to our patrols, giving only unreliable information as to the Japanese and rendering it difficult to obtain food. The inhabitants, in fact, buried their provisions, drove their animals into the mountains, and hid them in distant ravines and forests. It was impossible even to procure flour, and as to oil and milk it could not be thought of, so that corn cakes were among the rarest of luxuries.

As there were no Japanese at Khitch-Khen, Madritov decided to reconnoiter the town of Anju, which is a point on the line of communication of the enemy. In place of following the road leading straight from Khitch-Khen to Anju, which would have exposed his detachment to discovery and to being cut off from its line of retreat, Madritov advanced through the mountains toward the southeast, passing through Toktchen and Kaitchkhen.

The patrols could not get exact information as to the strength of the garrison of Anju. On May 9th, at an early hour in the afternoon, the detachment reached Kaitchkhen, and after a rest of four hours went forward during the night toward Anju. On the road it was learned that rather strong reinforcements had arrived at the city on the day before.

This information forced Madritov to give up his first intention, which was to attack the city and to inform himself first if its garrison had really been increased.

The advance-guard during this night attack was composed of the Caucasian Cossacks, who destroyed the telegraph wires along the road. Madritov had to act with the greatest caution, because he had been ordered not to engage in a serious combat, so as not to embarrass himself with

wounded. This is why, on arriving several miles from Anju, he detached Bobrov to examine the town.

Bobrov had to cross at a run an open space in sight of Anju, to occupy a height 800 yards from its walls and to draw upon himself the fire of the enemy, who did not fail to show himself upon the unexpected appearance of the Russian troops. He fully executed the first portion of his task. He crossed the open space rapidly and without loss under the lively but ineffective fire of the Japanese, dismounted his troops, occupied the hill and opened fire.

Bobrov hastily concluded from the fire of the enemy that the latter did not consist of over 200 men, whom he could easily dispose of. He consequently brought up his reserve, addressed them a few words and gave the order to charge. The Japanese received the charge with a fire which was inefficient at the beginning, but when the Russians had closed to 200 yards, they were received by volleys. Bobrov was mortally wounded at one of the first volleys by two bullets. Immediately afterwards the other officers were also wounded, one by three wounds and the other by two. The detachment had thirty men killed and wounded. The Russians were obliged to stop. They fell back a little in rear of the crest, lay down and opened fire upon the enemy. As soon as the scouts attacked upon one side of the town, the Caucasian Cossacks were sent to the other side. The latter dismounted, lay down 150 yards from the wall and opened fire, preparatory to assaulting in concert with the scouts. The failure of the attack of the scouts and the strength of the garrison, which seemed to be at least 500 men, caused Madritov to decide that he could not hope to capture the city.

He accordingly ordered Lieutenant Piounovskii to take command of the scouts, to remove the dead and wounded, and to retire. The Lieutenant sent eight men to carry off the dead and wounded, but as they approached they were almost all killed by the Japanese fire. Madritov then ordered Lieutenant Linevitch to take with him a platoon of scouts and a half-troop of Cossacks and to take position on the left of the half troop commanded by Girs. Lieutenant

Linevitch was ordered to keep up a strong fire against the side of the fortress near which our wounded were lying, so as to attract the attention of the garrison towards himself. The Japanese at once began to reply to Linevitch, and the scouts profited by it to advance toward the wounded; but they also were nearly all struck.

Perceiving that all efforts to carry off the wounded merely resulted in new losses, Madritov ordered his men to a commanding position until night, in order that he might carry off the wounded under cover of darkness.

Such was the situation at 9 o'clock in the morning. The detachment had, therefore, to maintain itself in position for at least twelve hours.

At about half past nine, a Japanese company, preceded by cavalry patrols appeared on the other side of the river from the direction of Long-ben. Half of the Oussouri Cossacks immediately galloped towards the bridge and set fire to it, but the Japanese, nevertheless, rushed upon the burning bridge. The scouts of the Fifteenth Regiment and the Oussouri Cossacks drove back the Japanese company by volley fire, and it did not show itself again during the day.

The Russians continued to exchange shots with the garrison until 3 o'clock in the afternoon. At this moment, the Russian detachment was joined by Lieutenant Eilers, who had been sent with a patrol on the Ping Yang road and had destroyed the telegraph line for twelve miles. The Lieutenant reported that a column of about 600 infantry of the enemy was coming from Ping Yang. The two companies quickly appeared, one of which moved upon Anju, while the other directed itself upon the left flank of the Russian detachment. Lieutenant Linevitch, who was on the left flank, had only seventeen men on his skirmish line, so that the situation was critical. Having changed his front, Linevitch opened fire upon the company which was advancing by rushes, and shortly afterwards Captain Bodisko took post 200 yards behind him with the scouts of the First Rifle Regiment. Linevitch could then carry off the dead and wounded, and began to retire.

Bodisko allowed the Japanese to approach very close before opening fire. When they had reached the distance of seventy paces, our volleys disordered their front rank, and the rear rank, after having carried off the dead and wounded, retreated with great losses toward the fortress. Our troops awaited a new attack, but the Japanese, probably thinking that our detachment was much stronger than it was, and that it would assume the offensive on its own account, remained behind the city walls. The firing broke out anew and lasted until nightfall, when an account was made of the losses of the detachment and found to be as follows: Three officers wounded, including Bobrov, who died during the night; nineteen killed, and forty-three wounded.

The dead were buried in two ditches. Bobrov was placed with his men, and crosses were planted above the graves. The wounded were carried in improvised litters, and the detachment fell back at 2 o'clock in the morning.

At the end of about ten miles the command was halted for rest. Our soldiers, exhausted by long fighting as well as by the night march, had just gone into bivouac, when the outposts returned at a gallop and reported that the Japanese were at hand. The wounded were immediately sent off under an escort, and the detachment took up a position in a defile. After deducting the litter-bearers, the escort for the wounded and the horse-holders, there remained only 150 men for the fighting line.

The Japanese with a strength of two companies appeared at about noon and took up a position a short distance away. Friends and enemies for two hours faced each other without firing, when the Japanese retired. The Nippons probably thought that our detachment was the advance of a strong column, not suspecting that so small a force would have the boldness to place itself in rear of a great army.

After having destroyed his train, which delayed his march, Madritov fell back towards Toktchen, passing by way of Kaitchkhen. The wounded were carried by natives. A detachment was dispatched under the order of Lieutenant Girs to examine the eastern coast between Gensan and Khamkhyng.

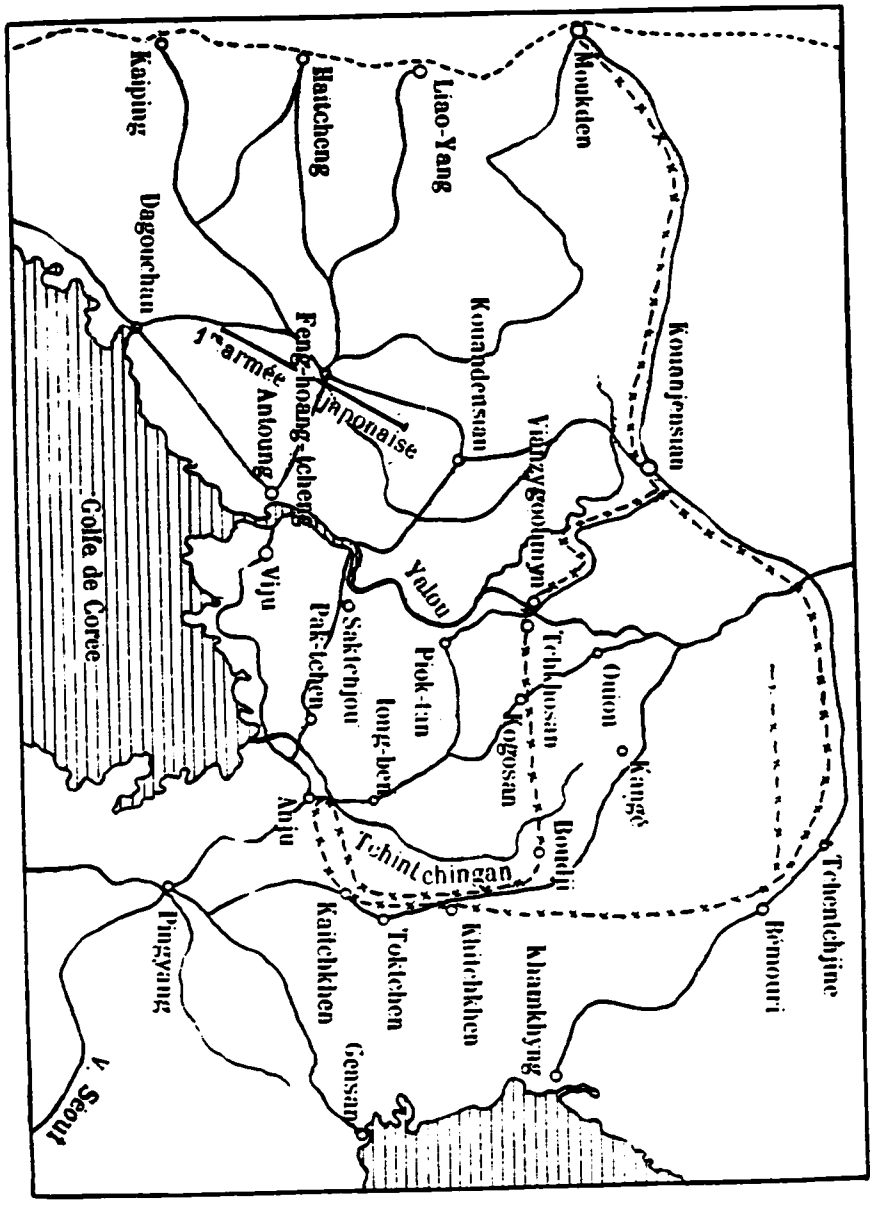
When about forty miles from Gensan, Girs learned that

the city was garrisoned by 2,000 Japanese and that the third line of defense was not entrenched between Gensan and Ping Yang. He then marched upon Khamkhyng, the richest city in southern Korea, situated in a valley surrounded by fertile plantations. The garrison of the town consisted of about 600 Korean soldiers, who received our troops with volley firing. As a punishment, Girs burned the town to the ground.

By the light of the fire the march was continued upon Tchentchjine and the main command was rejoined at the village of Bémouri, just as the latter was fighting a lively engagement with the Koreans, who held the defile in rear of the Russians. Having dispersed these Koreans on the 23d of May, the column passed through Tchentchjine, which had been abandoned by the inhabitants and troops, who had all retired to the strong fortress of Koni.

On the 27th of May Lieutenant Linevitch was sent forward with a half-troop toward the village Tchoumak-Kori with orders to hold the place at all hazards until the arrival of the column. Madritov had taken this decision because the village is upon one of the roads which crosses the Yalu and might have been held by forces of the enemy. Linevitch was received with rifle shots, but rushed on to the attack, drove the Koreans from the village and maintained himself there with the loss of one killed and three wounded. Madritov marching rapidly drove the Koreans from a new position that they occupied upon the heights and chased them towards Kange.

Since Madritov had collected all necessary information, there was no longer any reason to attack this fortress, so he retreated upon the Yalu, having burned forty-eight Korean villages, of which all the male inhabitants were fighting of their own free will against the Russians. On the 1st of June the detachment recrossed the Yalu closely followed by the Korean garrison of Kange, who kept up a continual fire. After crossing the Yalu the detachment marched on Kouanjensian, where he reported the presence of infantry, cavalry and artillery of the enemy. Madritov then fell back upon the left wing of our army, taking with him all his wounded.



From this it will be seen that Madritov's raid upon the rear of the Japanese army under difficult conditions had considerable results. It lasted two months. It is an example of what can be done with a small detachment commanded by a bold and energetic chief.

THE LESSONS OF THE BOER WAR AND THE BATTLE-WORKING OF THE THREE ARMS.

A LECTURE DELIVERED BEFORE THE BERLIN MILITARY SOCIETY, ON 30TH MARCH, 1904, BY MAJOR BALCK, OF THE GREAT GENERAL STAFF.

Translated by Permission.

[From The *Journal* of the *Royal United Service Institution*, Nov., 1904.]

1. *General Conditions and Lessons for Infantry Combat.*

IF we do not enter into the question of guerilla war, only the battles up to the capture of Pretoria on the 5th June, 1900, come really under purview for tactical consideration.*

The distinguishing mark of the Boer method of fighting is one of passive defense pure and simple, which may well

*The Boers laid particular stress on this question of guerilla war, when they protested against Lord Robert's manifesto of the 13th September, 1900, directed against their determination to carry on what was practically a war of this nature. "The truth is," writes State Procurator J. C. Smits, in the *Nieuwe Rotterdamsche Courant*, 23d June, 1901, "that we have begun a new method of carrying on the war, which the enemy is stigmatizing by the old perverted name of guerilla. Having carried on the first half of the war in the old methods, we are now convinced that the English superiority in force is too great for us, and we have therefore struck out a new course, in which strategy, mobility, and the distribution of small fighting bodies over a wide extent of country are of much greater importance than a battle proper."

avoid a defeat, and stave off any decisive results from day to day, but can never achieve victory. Only the leader who has attacked and destroyed the enemy can call himself victor. The Boers failed to understand that a *counter attack* must also follow a *fire-defense*. In December, 1899, the English attacks on Magersfontein and Colenso were repulsed: but the Boers allowed the English abundance of time to bring up reinforcements, enabling them, five weeks later, to repeat their attack on the Upper Tugela, and, after nine weeks, at Paardeberg. As the Boers only wish to keep the enemy at a distance, and drive him back by their rifle fire, they dispense with Reserves. It is astonishing with what small forces such a defense is possible. As, with but few exceptions* the front and flank attacks of the English were not carried out simultaneously, the Boers were able, thanks to their mobility, to withdraw men from the less threatened positions and use them at other points. Everyone, however, did not fight in the firing line. Against the wish of the leaders, faint-hearted men remained behind under safe cover to await the result or to recover from the effects of the fatigues of fighting. Dr. Schiel† thus describes what he saw while a fierce fight was raging not far off upon Spion Kop on the 24th January, 1900, and every rifle was required:

"I arrived, after about an hour's march, at the foot of Spion Kop. * * * There I came upon a tolerably large number of Boers, who were making coffee under the protection of some overhanging rocks; others joined them there, coming from the hill; others again, went off to take part anew in the fighting, after having rested and refreshed themselves. * * * Everything was done in order and quietly; there was no attempt to drive men into action: but whoever wanted to join the firing line did so, and whoever wished to keep away altogether could do so with the greatest ease."

*"Kriegsgeschictliche Einzelschriften," No. 32, p. 34: at Elandslaagte 21st October, 1899; Driefontein, 10th March, 1900: also No. 33, p. 36.

†"Mit den Deutschen im Burenkriege."

In an unpublished account a former German officer, another companion in arms of his, made the same statement. Such casual fighters are, however, no tactical Reserves. A true offensive was foreign to the Boers; their method of attack was to creep forward from cover to cover in order better to be able to shoot down their opponents. Boldly to charge the enemy they at first ridiculed as mere stupidity on the part of the foreigners.

The defense positions consisted of long connected groups of deep rifle pits,* which, as inconspicuous as possible, were mostly placed where the enemy's eye would least expect them, special care being taken that nothing showed against the sky-line. In order to prevent the clouds of sand caused by the explosion of the guns, the ground in front of the guns was covered with the hides of freshly slaughtered animals. The grass was often burnt in front, in order that the khaki-clad English should show up in sharp contrast to the black ground beneath them.

The Boer is an adept at deceiving his enemy. Thus sham positions were made in which dummies, to serve as targets, were set up; guns using black powder were fired that attention might be drawn from the real positions (Magersfontein), and bursting charges exploded to deceive the enemy's gunners in observing the effect of their shots.

It is ingrained in the Boer nature to take advantage to the fullest extent of the carrying power of his rifle, even to over 2,000 yards, so that it was only in isolated cases that the leader could succeed in making the men reserve their fire until close range. But when this occurred the effect was very marked. There can be no question of a controlled long-range fire. Every man firing adjusts his own sights independently, and alters them according to his own observation. As the Boer shot with a fine sight, he accepted the metre-graduation of the Mauser rifle without anything further than the paces by which he estimated his distance, and opened

*Boulders proved good cover only for thin firing lines; with the men in closer formation the opinion was strongly held that the splinters from the rocks increased the effect of the bullets and endangered the people near.

fire with shots at short ranges, which were easy to mark, and allowed the enemy to advance within the zone of fire. Worthy of notice was how, in a fire-action, with an enemy lying down, they watched for the opportunity if a man raised himself. Immediately bullets began to fall, and even if these did not hit, they raised a feeling of insecurity, often nipping in the bud any attempt to advance. One thing, however, was wanting in the Boers, that was the desire resolutely to await the assault, in order to engage in hand-to-hand fighting.

The English infantry was compelled in almost all actions to advance against the enemy over a plain completely destitute of cover, and whose position was difficult to locate. An army cannot disappear as the Boer detachments were able to do. The English scouting might certainly have afforded better results; no attempt was made to tear away the veil which the Boers had spread in a great measure over the whole country. Finally, the English cavalry failed to continue scouting on foot when they could go no farther on horseback. In whatever direction the slow-moving infantry was led, the more mobile Boers were always able to oppose a new front to the enemy. The case was, however, otherwise when their increasing strength enabled the English, with their columns extending over a wide front, simultaneously to seize several positions within the veil, and to force the Boers to occupy a definite stretch of country, thus rendering them immobile. It would be wrong to endorse these tactics, which were called into being under quite exceptional circumstances, without a wider survey of the theater of war. The course of the attacks in the first battle were as follows:

One or two days before the actual attack the artillery opened on the position with shrapnel and lyddite shells from flat-trajectory guns. This fire had but little effect, as the opportunity was neglected of simultaneously bringing forward a stronger force of infantry, in order to hold the Boers to their position. The hope, too, of inducing the Boers to return the fire, in order to gain footholds for the capture of their positions, was not realized.

The attack was hurriedly carried out—after the fashion of maneuvers. In thin skirmishing lines, the reserve detachments likewise in loose order, with, as a rule, but a slight loss, a distance of about 800 yards from the enemy was reached. The volley firing laid down by the Regulations could not further be carried out, as with the thin skirmishing lines, the officer could only exercise control over the men near him.

The uselessness of this method of firing and the increasing effectiveness of the enemy's fire paralyzed all energy, and quickly engendered that fatalistic inactivity and lack of mobility, which set a limit to the attack earlier than was justified by the extent of the losses. "The void of the battlefield" has become the significant expression for a new phenomenon, opposed to which the English fighting training proved ineffectual. The invisibility works directly upon the *morale* of the man, upon the true sources of his energy and his mettle. The soldier who cannot see his enemy, ends by seeing him everywhere. From this impression to a feeling of insecurity and then to one of fear is only a step. This feeling of unsubstantiality an Enlish officer characterizes as the most painful in the conditions of the modern offensive attack. "It originated in smokeless powder, which was used in South Africa for the first time, and through the artfulness of the Boers in making themselves invisible to their enemies. When attacking, a man has the feeling of advancing against an invisible fate, against which he possesses no weapon. Should a man wish to open fire at longer range, he shoots more or less at haphazard. The defender, however, fires as soon as a man rises and advances, without his enemy being able to see him.

The troops of the second line approached with the expectation, in the spirit of the Regulations, of carrying all before them by a bayonet charge, under the firm conviction that the Boers would not stand against an attack with the *arme blanche*. The trust in the *arme blanche* was thoroughly justified, but it must only be based on a successful issue of fire action. Before, however, the fire superiority was established, the advance by rushes began. The detachments,

meeting a heavy fire, threw themselves down and returned it, often without knowing where to aim, except in the general direction, where the enemy was supposed to be. As a rule the attack now came to a standstill. When, however, it came to storming isolated positions, only a portion of the fighting line advanced, against which the defenders could direct their fire all the more effectively, as the guns had ceased firing.

Compared with former battles, the small proportion of losses to the large number of prisoners is astonishing. Although it is true that in South Africa isolated detachments often in a short time suffered heavy losses, yet, considered as a whole, the losses were but small. They amounted in the battles to not more than fourteen per cent., although, naturally isolated, especially the smaller detachments, suffered considerably more. In their colonial wars, English troops have achieved victory by great physical exertions, still with but small actual loss of life. Such battles have the disadvantage of misleading the army in its views as to the losses which a seriously pressed home attack demands to-day. The heavy losses which English troops suffered in the Peninsula, at Waterloo, and in the Crimea have been forgotten.

Public opinion in England, which is all-powerful, influenced by sensation-hunting ignorant correspondents, went even so far astray as to consider small losses the sign of good tactical dispositions; and leaders, who have inscribed their names in history in iron characters, must give way to generals who subscribe to the precept that discretion is the better part of valor. It is conceivable that the English commanders were more or less influenced by this morbid flood, which hindered them from bringing the war to an end by summary, powerful blows. How pertinent and classical for all time are Clausewitz's words: "Let us not hear of generals who conquer without bloodshed. If a bloody slaughter is a horrible sight, then that is a ground for paying more respect to war, but not for making the sword we wear blunter and blunter by degrees, until someone steps in with one that is sharp and lops off the arm from the body." That such long drawn out wars without bloody annihilating battles

tend in the end to produce the heaviest losses, is directly proved by the war in South Africa.*

The more sternly and remorselessly a war is waged, the less are the opponents able to come to an understanding with each other; the fewer are consequently wont to be the number of prisoners. At Isandlwana (1879) an English battalion (the Twenty-fourth) succumbed, with the exception of a few who escaped, to the spears of the Zulus; at Maiwand (1880), also, scarcely a man surrendered to the Afghans, as quarter could not be depended upon. Quite otherwise was it in South Africa: Boer and Briton understood the same language; the intention to kill their opponents was seldom displayed by the Boers; equipments, horses and arms were taken from their prisoners, who were then generally let go; only a portion were interned at Pretoria, and these were well treated. We may draw a comparison here with the insults to which our prisoners in France were often treated.†

Even in the very early days of the campaign came the laying down of arms by strong detachments, which apparently was not punished with the severity which it merited. We almost get the impression that surrender was looked upon by the men as a means for getting themselves out of a difficult situation.

*The following statistics of the losses up to 5th November, 1900, are given in Conan Doyle's "Great Boer War:"

	Officers.	Men.
Fell in action	283	2,683
Wounded	1,064	12,365
Died from wounds	35	179
Missing and prisoners	283	7,330
Of these were exchanged or escaped	240	6,299
Died	3	86
Died of sickness	149	5,472
Died of accidents	3	101
Invalided	1,219	27,937

There were 368 officers and 3,462 men who met their death through the enemy's lead, as against 152 officers and 5,573 men who succumbed to sickness or accidents. The total losses of the army including prisoners, amounted to 1,782 officers and 30,002 men, out of a force of 5,880 officers and 151,546 men.

†Lieutenants Puttmann and Brüggemann, of the Third Brandenburg Regiment, in their history of the regiment, give details of the unworthy treatment to which German prisoners were subjected in France.

In country devoid of cover, commanded for a considerable distance by the enemy's fire, to break through was of course difficult; a retreat doubtless attended with great losses. It was therefore easy for the mounted Boers to waylay isolated detachments; we must also further bear in mind that the war was carried on in the hottest time of year in a country poorly supplied with water, and that the men became exhausted sooner than would have been the case under other conditions. Thus there was an excuse, for example, for the men who, exhausted after their night march, capitulated at Stormberg; not so, however, to take another example, for the detachment under Colonel Carleton, which capitulated at Nicholson's Nek after a feeble defense. Here it may certainly be admitted that individual Englishmen, who had already surrendered, stood mixed up with the Boers, so that the leader did not really know how he ought to act under the circumstances, and this hesitation was decisive of his fate. It must be imperatively required in the future that troops surrounded in open country make a serious attempt to cut their way through before there is any thought of laying down their arms. As opposed to this conception, the English court of inquiry on the 226 cases of surrender which had taken place up to 1st June, 1900, admitted justification in all but three, where only individuals had allowed themselves to be taken prisoners.

The want of success of the English attacks was to be traced to defective arms and an inadequate training in shooting under battle conditions,* and more especially to the unsatisfactory tactical training of the superior officers, whose lack of initiative and fear of taking responsibility became a

*In a competitive shooting match, picked shots at Shanhaikwan, on 18th and 19th August, 1902, made the following scores at 200 yards against the German ring target with ten shots; the highest possible score being 120. The English detachment made 84-6; the German, 79-2; the French, 73-2; the Japanese, 70-9; the Russian, 66-9; and the Italian, 40-8.

"A requirement which the English could not fulfill," remarked a Boer, "we, on the other hand, could always comply with, viz. judging distance and independent choice of sighting by men individually. In this respect the English, as far as we could ascertain, were not only quite unskilled, but what is worse, they had been trained on an utterly erroneous system. Perhaps

by-word, while the younger officers did very much better. The troops themselves were brave enough, but not prepared for such duties as fell upon them in South Africa.

Major Balck then quotes from Lord Roberts's evidence before the War Commission as to the want of individuality and resourcefulness on the part of the English soldier at the beginning of the war, and his defects as a marksman as compared with the Boers, and his want of knowledge of how to use ground. (Report of War Commission, p. 440.)

All reports concur in the view that the sectional and company commanders showed in almost every case energy, self-reliance and determination; that their tactical training was, however, insufficient, and that the senior officers were not anxious to take responsibility upon themselves. It may be because with increasing years these latter had become more irresolute, or that they had had no practice in handling strong detachments. But the whole system of peace training was unfavorable for producing self-reliant leaders: everything was laid down, every attempt at independent action repressed. Thus General Colvile declares: "It is much better for a young officer to make mistakes and learn what the consequences will be, than that he should be trained to avoid faults, as in that case he will then become a puppet, which can only move when his superior pulls the string." The fear of once blundering in the choice of expedients was extraordinary; it led to inaction, and was the cause of many favorable opportunities being allowed to slip away by those in command.

The leaders must be blamed for not understanding how to regulate the co-operation of all arms, in order to carry through a united attack. Above all, they hesitated, when the issue hung in the balance, to achieve victory for the

that this was so was of more importance than is supposed. Of thirty-five men whom we took prisoners, after they had fired at us up to 350 paces, not a single one had got his sight correct. Most of them had kept their sights fixed at 800 and 850 yards, because no order to change them had been given. Such a thing was not possible with the Boers. Certainly if a whole line of Boers had never all had their sights right, on the other hand, they had never all had them wrong. Every man could adjust his own sight, he could make a mistake; but he made the attempt to observe the change of distances."

English colors by putting into the fighting line the whole strength of their reserves. At Colenso (15th December, 1899), out of 15,600 men opposed to 5,000 Boers, only some 4,800 were actually engaged, who suffered a loss of fifteen per cent. On the 24th January, 1900, the day of Spion Kop, there were 20,000 available for the attack, of whom from 3 A. M. to 9:30 P. M., only 2,600 took part in the action: about 11 o'clock these were reinforced by another 1,600, and again at 5 by 1,500 more. What the strength of the Boers was it is impossible to state accurately; at all events there were only some 3,000 men at this spot. The English were, however, beaten, although there were 14,000 men who never came under fire at all. Here the leadership failed from lack of determination.

Various pleas have been urged in excuse for this: the numerical inferiority of the English forces at the beginning; the disproportion of the troops to the great extent of the theatre of war; the difficulty of bringing up reinforcements from the distant mother country; the eventual effect of heavy losses upon the recruiting for an army based on voluntary service; and even the influence which a defeat might have had upon the attitude of the European Powers. Still, all these pleas could not exonerate the leader on the battle-field. For this neglect the English Drill Regulations are primarily responsible, which lay down hard and fast the necessity for keeping back the reserves in a picked position. Clearly these Regulations, which were no longer suited to the times, were a heavy drag on the English army. The Infantry Regulations, while only attaching small importance to the fire action, laid great stress upon the shock action of a strong second line with the bayonet, and over-rated the importance of isolated attacks upon the course of the whole battle. Unfavorable conditions of training in the mother country militated against the development of a modern system of tactics. Whilst the importance of enveloping movements was certainly appreciated, frontal attacks were, often, even regarded as a sign of unsatisfactory tactical knowledge. But it was not recognized that enveloping movements required unconditionally the firm holding of the front, if they

are to be effective and the enemy not to be left free to withdraw at will as soon as his flank is sensibly threatened. But the English forces holding the front were handled in such a way that their feeble and hesitating movements left no doubt as to the real intentions of the attackers. It was only an empty threat with insufficient means. The knowledge also that infantry and artillery must work together in order to establish fire superiority was not general in the army. Artillery preparation in advance and infantry attack were two things sharply separated from each other.

Sounder views had developed before the outbreak of the war in South Africa in the various actions on the Northwest Frontier of India; but the troops who had taken part in these actions were shut up in Ladysmith after the early successes.

Only painfully and slowly could the troops trained at home under quite other conditions, and strengthened by reservists who had passed through a yet earlier training, accustom themselves to the new conditions.

All troops coming fresh into the field have to divest themselves of a mass of habits unconsciously acquired on the maneuver ground during peace, which have mostly led to an insufficient appreciation of the effect of weapons. This was evident with the Austrians in 1866, during the battles in August, 1870, and in the Russian abortive attempts to storm at Plevna. While the rapid course of the campaign in Bohemia hindered our then opponents from changing their tactics, we see in the Franco-German War a difference in the method of the earlier and later methods of attack, which was plainly noticeable by even the superficial observer. We need only compare, for example, the attack by the King's Grenadiers on Schloss Geisberg and that of the Grenadier Regiment No. 11 on the Gorge-Rezonville road with the attacks by the Baden Life Grenadier Regiments on the railway cutting at Nuit and the attack of the Guard on Le Bourget in order to appreciate the extent of the advance made on our tactics at that time.

In every war the impression of the effect of the enemy's fire upon soldiers only trained under peace conditions will

be so overwhelming—an impression which no peace training can convey—that all, like the Austrians in the first battles in 1866, ourselves in the Franco-German War, the Russians in the Balkan Peninsula, will be astonished at what seems to them an unprecedentedly hot fire. It was the same in South Africa. But the history of war shows that, even up to the present day, good troops fully and completely get over this impression. The leaders of all grades must only be prepared in advance to find the remedy immediately on the spot. This, however, can never lie in the defensive, but only in the attack. Major Kunz is right when he recommends that the lessons learned by any body of troops at the beginning of the war should be made known as quickly as possible for the common good of the whole army. Only in this way can mistakes be avoided, such as occurred on the 18th August, 1870, when a battalion (III. 86) attempted to make their way through the effective fire zone of the enemy in double column. Taking a comprehensive view, our Regulations of 1889 for that reason lay down: "The normal formation must be given up without hesitation, where the vicissitudes of the fighting require it." In this sentence the capability of adapting our instructions to modern conditions reaches a climax. Attempts were even made in England to justify* the new conditions, whilst still under the influence of the first failures at the Irish maneuvers of 1898, acting upon the principles enunciated by Lord Roberts as to the unassailability of the front.

Two fundamentally different tactical methods arose in the level plains of the Free State and in the mountainous country of Natal. In one case to embrace in the struggle, an extension of front, ever increasing, from fight to fight, by complete abandonment of any deep formation, before the enemy had even opened fire; in the other, a smaller breadth of front, with the deepest formation, without giving this up

*See also Lord Roberts' Order of the Day, 20th January, 1900: "Against such an enemy, every attempt to capture a position by a frontal attack will certainly fail. The only chance of success lies in the possibility of turning one or both flanks, or, which will mostly be equally effective, of threatening the enemy's line of retreat."

in the course of the battle. In the west the attacks failed because the supports, which should continually press forward to strengthen the firing line were wanting; in the east, because the weak force at the beginning was never strengthened, nor was the fire strength of the enemy ever opposed on equal terms. The caution in the Infantry Drill Regulations against the use of insufficient forces out of misplaced economy in the carrying out of a battle plan, is not given without cause after our campaign experiences. "One would constantly fight with inferior against superior numbers, and voluntarily forego the advantage that such superiority would give. An unsuccessful undertaking, however, not only causes useless losses, but damages the *morale* of the troops." The English leadership in battle was wrecked because the extension of front and a deep formation could not be reconciled with each other.

Lord Roberts's operations at Paardeberg and Bloemfontein determined the whole later course of the English tactics pursued. He had to overthrow the enemy while himself avoiding any failure: new defeats would have damaged the prestige of England, and might even have brought about the interference of some of the European Powers. How much this was feared in England was proved by the extensive measures taken by the navy for the protection of the transports. Thus from the outset of his taking over the command his actions showed the impress of the cautious leader. There was certain to be a difficulty in maintaining a steady flow of reinforcements to make up for losses. So he determined to avoid frontal attacks and to maneuver the enemy out of his positions, not, however, with the view of compelling him to fight in the open country, but only to obtain possession of the country held by the Boers. That was the distinguishing mark of the operations: the winning of positions, not the destruction of the enemy!

By a rapid flank march Lord Roberts threatened the communication of the Boers at Magersfontein; by a night march they attempted to escape; but, brought up in a very clever manner by the cavalry on the 17th February, 1900, they on the next day repulsed an attack made upon them

during the absence of Lord Roberts. Lord Roberts stopped the further carrying out of the attack, and after being surrounded and bombarded for ten days the Boers were compelled to lay down their arms. The same thing happened in the fighting at Poplar Grove on the 6th March. The enemy was held but no attack was made, in the certain expectation that he would evacuate his position during the night. It is true he did so, but only to make another stand a few miles further away.

The advance was arranged from the outset with the avowed intention of surrounding the enemy. The troops advanced with the dispositions for battle fully developed. In the advance on Diamond Hill, 11th June, 1900, Lord Roberts's force, 40,000 strong, moved forward with a broad front of about thirty miles, with an interval of between twenty and thirty paces between the skirmishers. Only against a broken enemy, who it is known will not advance to the attack, is it possible to take liberties of that kind. The idea of destroying the enemy remained quite in the background.

But what may thus have been saved in bloodshed on the day of battle was more than made up for by the sacrifice entailed through the prolongation of the war. Timidity in the face of the enemy was most apparent in Buller's actions on the Tugela. Battles which opened favorably were stopped short, partial successes not taken advantage of, only because the further attack would have become a frontal one. Nothing could be more fatal than to allow troops to believe that a frontal attack is impracticable. On the contrary, troops must learn that in great battles almost all attacks will be frontal. It must naturally be assumed that as in any other attack, fire superiority has first been established. If other methods do not suffice, there remains only what is recommended by our Drill Regulations, viz., to approach the enemy under cover of the darkness, and then at daybreak reopen fire at closer ranges. This was also several times attempted in South Africa. The English army had had in peace a good training in carrying out night attacks. Bearing in mind the storming of the Egyptian lines at Tel-

el-kebir (1882) in the dusk of the morning, and the successful march to storm the Khalifa's position on the Atbara (8th April, 1898), much might well be expected from night actions. The experiences gained in 1882 were, however, forgotten, and less weight was attached to the preparations and to the acquiring all necessary information indispensable for success. Thus it came about that at Stormberg and Magersfontein the troops came on the enemy too late, and instead of taking him by surprise, were themselves surprised in close order by their opponents' fire, which wrought great havoc in their ranks. So reliance on this method of fighting died away, and the dusk was not taken advantage of, viz.: after an indecisive action, when, as we now can see, a night attack would have certainly insured victory.

It was only a small step from reluctance to making a frontal attack to the belief that it may generally be impracticable. Major Baden-Powell lays down the close connection of the *operative offensive* with the *tactical defensive* as a fundamental principle.* But only under particularly favorable circumstances does he consider that a frontal attack can be carried out. But the South African War shows plainly that whoever wishes to obtain a decisive result must press the attack home in spite of all difficulties. Only the attacker can use to good effect the shortcomings and blunders of the enemy. Whoever plans in advance merely the warding off of attack and a system of defense has already recognized the superiority of the enemy before the decisive blow is struck.

If weakly held positions could not be taken by numerically superior forces, it must be attributed to the faults committed by the English. This disparity between attacker and defender was apparent both in earlier wars, and to a greater extent in South Africa: the more inadequate the cooperation of the artillery, the less protection the nature of the country offers, the more difficult will envelopment become. But a skillful and energetic leadership has even in South Africa been victorious without a great superiority.

*"War in Practice." By Major B. F. S. Baden-Powell, Scots Guards.

Without doubt the attack has become more difficult and more costly for infantry. The troops can only respond to the demand made upon them if they find a support in the inflexible will of the leader who is determined to win in spite of all difficulties.

All half measures, then, are fatal. Our attacks will be bloody, but they will not exact greater sacrifices from us than Frederick the Great demanded from his infantry in all his serious battles. Because the expectation of incurring heavy loss restrained a leader from attacking; because, owing to the dislike of the Boers to hand-to-hand fighting, it was nearly always possible to maneuver them out of their positions; because an attack already begun was not pushed home, it need not be inferred that a frontal attack is generally impracticable. The South African War only confirms the lessons of earlier wars:

1. That the attacker, generally speaking, should have the superiority, the great advantage of which shows itself in the power to envelop.

2. That every well-prepared attack, which is founded upon the principle of fire superiority, must succeed. (Elandslaagte, Driefontein.)

3. That the supposed dictum as to the impracticability of frontal attacks is one that cannot be sustained.

4. That the troops must, under cover of the darkness, win what remained unattained during the day. (Modder River, Spion Kop, Paardeberg.)

"What form now does the infantry attack take, after the previous lessons have been turned to account: what can we learn therefrom for the advance over level country, if we have nothing to suffer from the enemy's artillery?"

The English infantry was surprised by the enemy's fire at Magersfontein and Colenso in close formation, at Belmont and the Modder River in battle formation. In order to avoid similar experience, a new fighting formation at ample distance from the enemy—about eight miles at Poplar Grove, for example—was adopted, which permitted only of movement straight forward; an advance in such a formation was only possible where the veldt offered no obstacles and the

important question was to hold the enemy. The brigades formed with their four battalions a sort of open double column, with an interval of between three and four hundred yards between the battalions. The battalions opened their columns in such a way that their eight companies, each in a thin line, with at first two paces interval between the men, which was finally increased to twenty, followed with an interval of from a hundred to one hundred and twenty paces.

The advantages of the deep formation, and of having the troops well in hand, so that they could also be used for other purposes than a purely frontal one, disappeared. As the brigades advanced in complete fighting formation, the cursory information obtained by the cavalry tumbling against the enemy's positions sufficed. But such a method must form the exception. For serious attack such scouting would not, however, suffice. Out-pickets may be able to prevent approach, while foot patrols, turning the slight cover of the ground to the best advantage, may be able so far to approach the position that they can make out details. This method was almost always neglected by the English, although the necessity for a more accurate scouting both for infantry and cavalry repeatedly showed itself. Here infantry officers' patrols must do the work, who, ensconcing themselves under cover before the position, must examine the country with good glasses, calculate distances, and signal their observations by means of flags. By such so-called patrol-groups the advance of their own infantry under fire, even over wide distances, can be assisted.

When the position of the enemy is approximately ascertained, a further extension of the fighting line takes place. On the 18th February, at Paardeberg, four out of the five battalions of the Sixth Division were at once moved up into the firing-line. Each battalion of eight companies occupied a front of from 400 to 500 yards, formed in three lines, of which the first two were in skirmishing order, with intervals of about two yards; the third line consisted of two or three companies in close order. The whole front of the four battalions covered more than 2,000 yards.

The Highland Brigade, on the right of the Sixth Division, went, however, further in the extension of their fighting front. Towards 7 A. M. they broke up their bivouac east of Paardeberg Drift, and advanced in an easterly direction, the Argyll and Sutherland Highlanders leading, followed by the Black Watch and the Seaforths, at a distance of some 2,500 yards from the enemy's front, in long ranks one behind the other, with four paces interval between the men, until the head of the Argyll and Sutherland Highlanders had arrived level with the artillery on Gun Hill, behind the left wing of the Sixth Division. Here, after turning left about, the whole brigade, except two companies of Seaforths, who followed behind the left wing, advanced over the open plain towards the river in an extended, weak skirmishing line, with a front of more than 4,000 yards without supports and reserves. The English, without doubt, went too far in broadening their front; but the new weapons undoubtedly permit an extension of space in the attack of single units, which, however, must be less than in the defense.

In possession of a long range weapon, fitted with a convenient, long-distance sighting arrangement, the English infantry allowed themselves to be enticed, by the distant fire of the Boers at ranges from 1,200 to 1,300 yards (the Guards at Modder River), even 1,600 to 1,700 yards Sixth Division at Paardeberg), into opening fire on the enemy, whose position could not be detected even with the most powerful glasses.

The complaints, recurring again and again in all reports, that it was almost impossible to discover the enemy, who lay motionless behind their cover, shows the necessity of training the eyesight of officers and men in detecting difficult objects at medium and distant ranges. The battles in South Africa confirm the old rule that if an attacker has once opened fire at long range, he generally does not get within close range. At once to throw oneself down to return it, when the enemy opens fire, shows how fatal peace training is. The losses were in any case small, certainly not in any way comparable to those suffered by our Guard in the advance against St. Privat through the effects of the Chassepot fire.

without being able to return it. Small losses must be borne, until heavier losses make it necessary to open fire with individual units, in order to make the further advance of the main force possible.

Just for these duties machine guns have shown themselves very useful. Every English battalion had one of these weapons. Whilst in the Soudan these guns were used as batteries against the dense masses of the Dervishes, in South Africa they were used with the battalions. Often there was no opportunity for using them, which was left to the discretion of the commanding officer. When attacking it was difficult to get the weapons on the carriages on which they were mounted forward, as they offered a mark like a gun. It was not without reason that an officer said: "It was as if their outward appearance had made leaders and men alike forget that they had in their hands a weapon of the limited efficiency of these guns." As the Boers never offered good targets for machine gun fire, the troops were dissatisfied with the effect they produced. In the attack on Talana Hill a machine gun proved very effective in a small wood behind a wall; in open country the guns were, however, very quickly silenced. This, for example, happened at the Modder River to the Scots Guards' gun at 900 yards, at Magersfontein to the Seaforths' at 600 yards, also at Rietfontein on the 26th October, 1899, the Gloucesters' guns at about 900 yards.

Wherever the attempt was made, the English infantry in their skirmishing lines were able to advance with only small loss to a distance of between 700 and 800 yards from the enemy; then, however, these thin firing-lines undoubtedly showed themselves much too weak, either to advance further or to gain undisputed fire superiority. The new English regulations therefore lay down that in their skirmishing lines, with intervals of six to twenty paces, when a distance of 600 yards from the enemy is reached, the line is then to be brought up to full strength, that is, a man to every yard. It is considered an advantage of thin skirmishing lines that they suffer less from fire, that each man has greater freedom of movement, that they are more difficult to locate, that presumably the enemy will also open fire upon them later. But certainly there is some ground for stress being laid upon the fact, that a man's sense of duty, when in the thin firing line he suddenly finds himself exposed to danger, wavers sooner than when he sees his comrade close to him in the same action.

The question whether on principle thin or close skirmishing lines are to be employed does not permit of a definite answer. Our duty must be to bring into position a firing-line superior to the defender's at close range. If we have to advance through country with cover, which interferes with the effectiveness of the enemy's fire, we immediately enter upon the decisive fighting, and we must utilize the advantage of a uniform bringing up of skirmishing lines possessing fire superiority; if we have to advance over open country nothing remains but to move forward with thin lines, gradually strengthening them to the fullest extent. Stress has been laid upon the point that in this advance in several lines, one behind the other, the units will get mixed, and that also the rear lines might fire upon the advanced ones. The first point must be conceded; the second, at least as demonstrated by the war in South Africa, affords no ground for apprehension.

Doubts have also been expressed whether the reinforcements can reach the firing-line. The war in South Africa proves this. At Magersfontein the Highland Brigade, holding on to their close range positions, were reinforced by a battalion which advanced by rushes and even succeeded in gaining another stage in advance; at Paardeberg a half-battalion of the Cornwall Regiment were equally successful, reaching the firing line partly by creeping and partly by rushes. In general, it is recommended that the reinforcements be brought up by rushes to about 200 yards from the firing-line, the last stretch to be crossed by the men creeping, as soon as they arrive within the fire zone directed against the skirmishing line. At what distances the principal fire position will lie depends upon the nature of the ground and the results of its examination, as well as upon the efficiency of the enemy's artillery. The attack to-day consists, above

everything, in winning fire positions. Every precipitate advance from these, if the fire of the defenders is not yet weakened, may even lead to the destruction of the attacker. This struggle with all its disappointments and repulses, may last for hours, and even throughout an entire day. The attacker will be forced to try and adapt himself to the tactics of the defense, and he may even, under some circumstances, have to entrench himself. Thus the chances of the attack and defense are gradually more and more equalizing themselves, although it is certain that as the battle progresses, the moral superiority of the advancing attacker will increase proportionately as the defender on his part begins to bleed to exhaustion.

When once the fire of the defender has been weakened the further progress of the attack must vary according to circumstances. The view has been chiefly held that the best method of advance is by rushes by companies, as soon as reinforcements have reached the firing-line.*

But these reinforcements, having worked themselves forward into the enemy's fire without firing a shot, would plainly be glad to be able at least to open fire. Were the strengthened line now to spring up, a heavy fire would be directed against them, which would soon compel them to throw themselves down again. If a rush is to succeed, the fire must first have been effective for some time; all regularity of movement must be discarded.

The section leaders must independently take advantage of every opportunity to bring their men closer to the enemy. It is just in this that English officers so often failed. Any preparation taking time, which the simultaneous rush forward of long lines especially calls for, is, as it attracts the attention of the enemy, bad. Quick as lightning must the springing up from the ground and the rush forward follow each other; whether the men move with their breech-blocks open, with loaded or unloaded weapons, is immaterial. In the rush forward the men are generally too much out of breath to shoot immediately; rapidity of movement is the main thing.

Indeed, in the Franco German War we experienced increasing difficulty with each rush in making the men rise quickly and carry their rush forward far enough. English officers fully bear me out. It is obvious that on principle the rushes must be as long as possible, so as not to have to repeat oftener than necessary what is the critical and the most difficult moment to be got over. This is the view taken up by the new Austrian and English Regulations. The extent of the rush is limited by the staying powers of the men and by the enemy's fire. It will be easier to shorten the rushes than to prolong the short ones to which the men have been trained. If under favorable circumstances a rush can be some eighty yards long, it will come down to forty yards or even less at close ranges. It is of decisive importance for the length of the rush, whether the losses occur when the men rise from cover or whether during the rush itself. In the first case there will often be no rush forward at all, or the men will throw themselves again to the ground after ten or fifteen yards.

This small success in winning ground does not compensate for the waste of moral strength in making the men get up quickly. Creeping forward, however, comes quite naturally in the field; the men get over the ground more quickly, with fewer losses and without great fatigue. The difficulty of getting troops to storm under these conditions is not experienced. In the open country this creeping forward was carried out in spite of a steady fire. English officers assert that it is practicable to support these units while they are creeping forward by firing over their heads.

The Boers in this way often succeeded in driving the already disorganized enemy out of their positions by means

*In the "Militärischen Betrachtungen über den Krieg in Südafrika" (Beiheft 8, *Militar-Wochenblatt*, 1900), the following observations occur: "The men do not all rise together; this gives a watchful enemy time enough to greet those who get up last with a well directed fire. Accordingly, even short rushes with long lines become too costly to be carried out for any length of time. Small groups, on the other hand, can be put in movement almost immediately, and surprise, in my opinion, is the only thing that can guarantee a rush success. For this reason it should only last as long as the surprise. Everything likely to attract the attention of the enemy by a sudden cessation of fire must, therefore, be carefully avoided. And this is alone possible with small groups."

of their rifle fire. The firing line, continually firing, crept forward slowly and steadily in a way which is said to have exerted upon the defenders, who were tied to their positions, an impression all the more disquieting and paralyzing the nearer the uncanny, creeping, firing, serpent-like line approached them, and the less they were in position to inflict perceptible losses on these small prone objects, especially when they themselves were kept persistently under an effective fire.

The war shows, in opposition to the view held in our Field Service Regulations, that firing lines can lie opposed to each other at close ranges by the hour without any decisive blow being struck. English officers find an explanation, which is also confirmed by their opponents, in the circumstance that the Boers could fire at close ranges without raising their heads from cover, and only left their protecting cover if the English rose to advance. At Spion Kop the firing lines lay only about 250 yards apart from sunrise to dark.

In other cases, when the Boers had gained the fire superiority, they still waited and continued the fire. The English troops could scarcely have held the position against an advance to storm. As this did not follow—rising up and retreating was synonymous with destruction—their power of resistance relaxed during the long fire action, and in order to get out of this apparently unbearable position, which was becoming more acute every minute and paralyzing every vigorous resolve, the only possible alternative seemed to be to lay down their arms. It only needed some trifling incident to have sent them flying in wild confusion. It is just in this that the importance of the storm attack lies. An energetic enemy does not give ground to lead alone; he will not willingly expose himself to certain destruction from a pursuing fire; he needs first the advance of an attacker determined to come to hand grips to force him to evacuate his position. The attacker will advance by rushes and creeping as near as possible to the defenders; any premature forward rush, any isolated advance of single units, may jeopardize what has up to then been a success.

It is just here that disappointment over the exact effect produced by weapons is easy. The silencing or weakening of the enemy's fire gives only a deceptive check—an error which generally avenges itself by destruction. It appears to be somewhat hazardous to place the power of sending the men forward to storm in the hands of anyone, especially in those of the youngest section leader. To wait and keep up the fire is nearly always better than a premature rush forward. At Driefontein men advanced to storm when they saw some of the units break away from the firing line. At Elandslaagte, on the other hand, there was a feeling in the whole line that the decisive moment had arrived, and that they must either go forward or back.

"But how is the storming to be carried out?"

The one thing certain is that an advance without fire support is impossible unless the defender evacuates his position with the bulk of his men. For a certain time the artillery can well afford this support, but after a time it must cease, or better still, direct its fire upon the ground behind the position in order not to endanger its own infantry. Perhaps the defenders will remain under cover. But how if they rise, or how even if they only fire in a horizontal direction without rising? English attacks have failed even when the stormers had arrived within from fifty to eighty paces of their goal. The Austrian Regulations, recognizing the value of fire support, have decided that one unit should remain lying down; but this appears hazardous, when the beat of the drums and the bugle puts everyone in motion. What, then, finally, can a single unit effect, even for the front of a battalion? Are the men to throw themselves down and take up the fire combat again if the enemy opens his rapid fire? May this not be the beginning of a repulse? What will become, then, of the units which have been driven back?

This cannot be the solution. The enemy is worsted in the fire combat, that is, he attempts to protect himself against the storm of bullets and shrapnel hurtling over his cover. During this storm the enemy must be kept under cover and not permitted again to raise himself. This appears only possible through regular conventional fire carried out at the

commencement of the movement. To propose using this against an unshattered enemy under cover in order to worst him, as has been recommended several times since 1880, spells destruction. Here the question is only with regard to the further keeping in check defenders already broken. In the South African War success was several times achieved in this way.

One of the most distinguished and perhaps the best tactician of the English generals, Sir Ian Hamilton, who led his troops against the enemy at Elandslaagte and Doornkop, wrote to me as follows on this question: "My view is, that no matter what regulations are laid down in peace, men will fire when advancing to storm. Nothing will stop them; they rely upon it. It is as well, then, to count upon it in advance. The greatest danger is that the men will throw themselves down instead of continuing to advance. When stormers once lie down, they only get up to retreat."

The views of English officers, who are most experienced in war, certainly deserve consideration.*

*Von der Goltz writes in his "Training of Infantry for Attack": "The nearer the line approaches the defenders, all the more does the inherent effort of everyone show itself, to reach the enemy's position as rapidly as possible: from lying down to shoot comes the kneeling, then the standing to fire, and finally quite naturally follows firing while moving. Firing when in movement is permitted by the regulations, and is certainly ordered in these circumstances. There arises here a very natural feeling not to allow the enemy who is kept lying down to get up again. This fire when moving must not be confused with the former firing in movement of long lines of skirmishers at distant ranges, which was condemned in its day, and by which the keeping down of a worsted enemy, was not intended, but the overthrow of an intact one."

GENERAL FRENCH'S CAVALRY CHARGE AT KLIP DRIFT.

[The following inspiring account of the brilliant and successful charge of French's cavalry division at Klip Drift is taken from Colonel Waters's translation of "The German Official Account of the War in South Africa." This charge occurred in the advance of Lord Roberts's column for the relief of Kimberly in February, 1900. French's cavalry had marched in advance and seized Klip Drift on the Modder River on the 14th of February, and held it till the arrival of General Kitchener early on the morning of the 15th with the Sixth Division (infantry).—EDITOR.]

GENERAL FRENCH intended to continue his advance for the relief of Kimberly early on February 15th, in order, if possible, to reach that town on the same evening; but the Boers had blocked the road during the night, a detachment, about 900 strong with three Krupp guns, having occupied the kopjes north of Klip Drift in a semi-circle about two and a half miles in extent. Somewhere about the center of the Boer position there was a col 1,200 to 1,300 yards wide, which connected two neighboring kopjes, and the ground sloped gently up from the river. This col was within effective range of the Boers ensconced on both the kopjes, the three Krupp guns being on the western hill.

After the Sixth Division had occupied the position on the heights between the two drifts, where the cavalry had been, the latter assembled about 8:30 A. M. at Klip Drift. The patrols soon succeeded in ascertaining the strength and the extent of the enemy's position, because the Boers, contrary to their usual custom, opened fire on them at long range, and so disclosed their whereabouts. In consequence of the reports sent in, French ordered his batteries of horse artillery, which were soon afterward joined by two batteries of the Sixth Division, and two twelve-pounder naval guns, to come into action on the heights on the north bank. Supported by the fire of his guns, he intended to break through the center of the enemy's position. The artillery opened

fire at about 2,200 yards range, spreading it along the entire Boer position, and it soon succeeded in silencing the three hostile guns. Simultaneously with the opening of the artillery fire, the infantry of the Sixth Division advanced north of the river against the Boers on the high ground.

The hour was just after 9 A. M. French assembled his three brigadiers, informed them of his intention, and ordered Gordon's brigade with its two batteries of horse artillery to form the first line, with four yards interval between each two men, and to break through, across the col in the direction of Kimberly. The Second Brigade, under Broadwood, was to follow in support in line at 500 yards distance, while the First Brigade, under Porter, together with the remaining five batteries of horse artillery, which were to continue firing until the last possible moment, was to form the third line.

The two leading brigades at once deployed, and the horsemen, who were soon veiled in dense clouds of dust, dashed into the enemy's fire, the divisional general riding at the head of the Second Brigade. The spectacle displayed to the eyes of the Sixth Division was magnificent; every man held his breath; the moment was one of extreme tension, for it seemed as if the bold attempt must be utter destruction of the gallant riders. It had, however, already succeeded before the spectators were really able to appreciate the fact. After the dense clouds of dust, caused by the 6,000 horses, had somewhat dispersed, the three brigades were seen to rally nearly a mile beyond the enemy's position, and the road to Kimberly was open. It was marvelous that the division should have ridden almost without loss through the Boer fire; the casualties amounted to only one officer, and fifteen men killed and wounded, together with about twenty horses. This remarkably small loss is explained chiefly by the great rapidity of the maneuver, which completely surprised the adversary. The impression caused by the dashing mass of horsemen was such that some of the Boers took flight before the cavalry had approached within effective rifle range. Those of the enemy who held their ground fired for the most part too high in their excitement,

especially as they had occupied, contrary to their usual custom, the summit of the heights and not their foot. The cavalry too were enveloped in such dense clouds of dust that they offered no certain target. The effective preparation and support of the attack by the artillery, contributed, also, greatly to its success, and one of the Boers present stated that "the fire from the English guns was such that we were scarcely able to shoot at all at the advancing cavalry." The main body of the Boers, leaving fifteen killed and wounded, fled towards Magersfontein, and their terror was such that, by their exaggerated accounts, they communicated their dejected spirits to other burghers in the laager. A number of Boers, unable to get their horses in time, had surrendered. A British officer described his impressions in the following language:

"The enterprise appeared to us at first as quite hopeless: we believed that only a few of us could come out of it alive, and, had we made a similar attack at Aldershot, we should certainly have all been put out of action, and have been looked upon as idiots. When we had galloped about a quarter of a mile, we received a very hot frontal and flanking fire, and I looked along the ranks expecting to see the men falling in masses; but I saw no one come down, although the rifle fire was crackling all around us. The feeling was wonderfully exciting, just as in a good run to hounds."

This charge of French's cavalry division was one of the most remarkable phenomena of the war; it was the first and last occasion during the entire campaign that infantry was attacked by so large a body of cavalry, and its staggering success shows that, in future wars, the charge of great masses will be by no means a hopeless undertaking even against troops armed with modern rifles, although it must not be forgotten that there is a difference between charging strong infantry in front, and breaking through small and isolated groups of skirmishers.

Editor's Table.

THE JOURNAL OF THE U. S. INFANTRY ASSOCIATION.

By virtue of an arrangement with the Infantry Association, its *Journal* will hereafter be furnished members of the Cavalry Association at $1.00 per annum. Under like terms the CAVALRY JOURNAL will be furnished to members of the Infantry Association. Members of the Cavalry Association desiring to take advantage of this club rate will please to remit the additional fee to the Treasurer of the Cavalry Association, who will have the *Infantry Journal* mailed to them.

This arrangement has been entered into to facilitate and encourage a study of the tactical use of the two arms combined in war, and to enlarge the usefulness of the two Associations in disseminating professional knowledge throughout the army.

WHY NO "COMMENTS?"

Has the sword actually become mightier than the pen in our cavalry, or is it that the book and the study thereof have driven both from the field? We are seeking the reason of the rest or rather the arrest of the cavalry pen. The Cavalry Association, which is the cavalry of our service, wants to hear from its members, and the pages of its JOURNAL are its chosen medium. There are no elect few to whom its pages are open—it belongs to all alike. Whenever one of us conceives that he has anything professional worth saying to his fellow cavalrymen—and such a feeling comes to everyone of us at some time or other, no matter how modest may be his mould—he has the JOURNAL at his command to say it in.

The service misses the "comments" which used to be such an interesting feature of the JOURNAL. Is it to be inferred that we have attained that millennial state of subordination and discipline among us which enables us to read article after article in the JOURNAL without having now and then aroused within us the spirit of disputation? Or is it that our garrison school work so absorbs our time that we have none left for writing our views on any subject through the JOURNAL? Or is it that we have no time even to read the papers in the JOURNAL?

The JOURNAL hopes to reap a harvest from the War Department order requiring that essays shall be submitted in the post-graduate course of the garrison school. The editor requests that copies of such essays may be mailed to him with permission to use them in the JOURNAL.

THE MILITARY SERVICE INSTITUTION.

The editor of the *Journal of the Military Service Institution* is to be thanked for the general index which he has just issued, and he and his able assistant, Captain Thomas A. Roberts, Seventh Cavalry, are to be congratulated upon the excellence of their work. Too much praise cannot be bestowed. It was a large undertaking. The form of the work, its style, its convenient arrangement, its scope, the soft dead white of its pages and the clear black print of its type, all appeal to one.

In glancing through this index, one who has not kept steady pace with the progress of the Military Service Institution, is struck with the array of professional subjects that have been discussed in the pages of its *Journal*, and one has but to look over the index of authors Captain Roberts's part of the task) to be convinced that most of the subjects have been ably treated, for in that list we find the names of most of the officers of our service—not all of them by any means—that have distinguished themselves as writers or otherwise since the Civil War.

And in looking over this index one cannot but be reminded, if one needs to be reminded, of the vast good the

Military Service Institution has done for our service. When, on that day in 1877, General Stanley, General Fry, General Rodenbough and Colonel Lieber issued the circular upon which the Institution was founded, they laid the corner stone upon which has been builded all the professional culture existent among us to-day. And there is professional culture in our army, more and of a higher grade, taking it as a whole, than there is in any other army in the world. And there ought to be. And it dates back to the founding of the Military Service Institution. All the other agents of our culture have followed in natural order, the Service School at Fort Leavenworth, the Cavalry, Infantry and Artillery Associations, each with its Journal, the Lyceum, the examinations for promotion, etc.

But the professional culture of our officers has not been the only aim or the only achievement of the Military Service Institution; its field has been even broader; its purpose has been the general improvement of the military service of the Nation, not alone of the Regular Army but of the National Guard also. Scarcely a reform, scarcely a change for the better, has been wrought in the service within the last quarter century, but has been first suggested in the pages of its *Journal*.

Few of these changes have originated at the War Department, but, thanks to those in authority there, they have been read of in the pages of the *Journal of the Military Service Institution* and put into effect. And through the War Department the influence of this Institution has reached the halls of Congress.

The Institution and its *Journal* are a quarter of a century old this year. Long may they live, and ever wax stronger in influence and numbers—the Institution in the number of its members and the *Journal* in the number of its readers and contributors.

Every officer of the army ought to be a member of the Military Service Institution.

FORAGE ALLOWANCE FOR INFANTRY OFFICERS.

Horsemanship is an accomplishment, it is not a natural gift. It must also be acquired in one's youth. One may have a knack at learning to ride, as one may have a knack at learning languages, but one can no more ride without learning to do so, than one can speak French without learning the language. And one can no more learn to ride by walking a half-century, than one can learn to speak French by talking English for a lifetime.

All this is said by way of inviting attention to the Government's inconsistency in expecting its infantry officers suddenly to become horsemen upon their promotion to majority, or appointment to the staff, without having given them the opportunity or encouragement to acquire the art of horsemanship. By act of Congress they become mounted officers in name, but, unless they have, at their own personal expense and under every sort of discouragement and inconvenience, kept horses during the long years that they have served as company officers, they come into their promotion certainly lacking a knowledge of the art which gives the office its distinctive name.

They ought to be horsemen in fact, as well as mounted officers in name; and they ought to be encouraged by the Government to become, and to continue to be, horsemen. The little knowledge of horsemanship one acquires at the Military Academy, good as it is for a foundation, cannot last a lifetime—cannot last a quarter of a century—unless it be kept alive by practice. And a large proportion of our infantry field-officers have not had even the advantage of that short course of training. To be sure, most efficient infantry officers, while in their junior grades, serve in one or more of the regimental staff positions which entitle them, for the time being, to keep their mounts: but this is not enough. To be a good rider one must ride habitually, and the mounted officer that is not a good rider lacks just so much in efficiency. Every bit of attention that a major has to devote to his personal safety in the saddle, is just that much attention taken off his battalion.

Many infantry officers, we may say most of them, a large part of the time, in the face of all discouragement, keep horses and buy forage for them. They have no stables, but must find an old shed here or there to put their horses in, or beg a stall in a troop or quartermaster's stable. This is not as it should be. The Government ought to find the forage and provide stable-room for at least one horse for every infantry officer. It would make for efficiency, and it would be a small price to pay. And it would be fair to the infantry officer. It would not be expecting the field and the staff officer of infantry to be what he has had scant chance to become—a horseman.

THE NEED OF STAFF TRAINING.

We are fortunate in being permitted to include in this number of the JOURNAL the remarks made by Major Swift, instructor of military art, at the opening of the first term of the Infantry and Cavalry School and Staff College.

The following letter, which is also reproduced by permission, expresses the appreciation of a distinguished Confederate general and accomplished staff officer:

"SOUTH ISLAND, S. C., November 4, 1904.

"*My Dear General Bell:*

"I have just finished reading the admirable "Remarks" by Major Eben Swift, introductory to your course at the Staff College, of which you kindly sent me a copy; and I cannot refrain from thanking you for it and expressing my very warm appreciation of their value and suggestiveness. When I picture to myself an army with a staff trained in the course he sketches, I indeed seem to see the dawning of a great day for the Nation. At last the lesson is being learned that the organization and handling of armies is a great and complex art. I believe it is perhaps the greatest and most complex of *all* arts. And it demands long study and training, not only at the head of the army, but throughout the staff of every organization in the army.

"In our Confederate army our staffs were often filled, from top to bottom, for sentimental reasons. Anybody would do for a staff officer. Sometimes even our best generals had but vague appreciation of the situation. There

were, indeed, many cases where men without previous training developed marvelous efficiency; but there were too many who fell far short. For instance, read the official reports of Malvern Hill by Lee's chief of artillery and by the Federal chief, and note the contrast. Yet the Confederate chief was retained to the close of the war

"Really, the *raison d'etre* of the book I have been trying to write for many years has been just to point out lessons teaching the necessity of staff training and attention to matters of smallest detail.

"Very sincerely yours. E. P. ALEXANDER."

ONE YEAR REËNLISTMENTS.

Old soldiers are what we miss most in our ranks to-day, and we use the adjective "old" in a very limited sense, meaning soldiers in a third or a second term of enlistment. No doubt it is a sign of prosperity in the land and a recognition of the excellence of training a man receives in our troops and companies. Corporations and individuals requiring trustworthy employees are on the lookout for discharged soldiers who can show a discharge certificate with the word "excellent" written on its face. Especially are such men wanted to fill positions requiring the management of groups of men.

Much as every troop commander desires to see his men better their condition, he cannot but regret the loss of every good man that quits his troop. He wishes above all, sometimes he hopes, and, if he has not lost faith through disappointment, he may even pray, that Congress would increase the pay of the noncommissioned officers to such a figure that every good soldier would strive for chevrons and cling to them when he got them.

But there is another thing Congress could do which might afford our troops some relief in this matter, namely, authorize reënlistments for a term of one year. If such a law could be passed and no soldiers took advantage of it, nothing would be gained to the service or lost to the Government. But some soldiers would surely take advantage of it, and in every such reënlistment the troop would gain a

trained and useful soldier instead of an untrained and (for many weeks) useless recruit, and the Government would save the expense of his recruitment.

Many a soldier at the end of his term would be willing to "take on" again for another year in his troop, especially if he be a noncommissioned officer; while he feels that he is not willing to enter into another contract for three years, until he has gone out and tried his chance in civil life.

But such a short term should only hold for reënlistments in a soldier's own troop. The discharged soldier should not be allowed to reënlist for a single year in any other troop or company than the one from which he was discharged; and the reënlistment should be made only upon the day following his discharge. A different rule would only encourage the spirit of change which already exists too largely in our ranks.

And further to encourage reënlistments, the Regulations might provide that every soldier upon reënlistment should be granted a furlough which, considered with what furlough he had received during his former term, would amount to three months; such furlough to be given at such time as the soldier desired it, provided his services could be spared.

One-year reënlistments with the additional provision that a soldier taking advantage of it in the Philippines should not thereby lose his travel allowance, would, it is believed, lessen the number of discharges in those islands, and do away with the necessity for transferring so many men from regiments about to start for service across the seas.

OUR CAVALRY AN ORPHAN.

The trunk of an army is its infantry. Indeed the infantry is the army, inasmuch as every army must be judged by the numerical strength and the quality of its infantry. The other arms and the staff corps are merely its members.

So the head of an army is the head of its infantry. An army commander is a commander of infantry, and he should be chosen mainly for his ability to command infantry in

campaign. He must, of course, understand the coöperation of the other arms, but, if he would win victories, he will leave to the chief of artillery the conduct of his artillery, and to the chief of cavalry the employment of his cavalry. At least, he will seek the counsel of such chiefs and most likely follow it, and he will leave to each the details of his own arm.

Every branch of an army needs a head, a father, to guard its welfare, to watch over its training in peace, and to direct its employment in war. The army commander or its chief of staff can no more properly look after the details of all the staff departments and fighting branches of the army, without assistants, than the president of a great railway can manage all of its departments, without a chief at the head of each one to assist him. And there are few railways that employ a larger number of servants, or possess a more complex system than our army even at its peace minimum.

The necessity for a head to every department and branch of our army, *except its cavalry*, is recognized by our Government. The cavalry alone has no chief, and it suffers accordingly in the uniformity of methods and equality of training among its regiments, in the equity of their assignment to stations and duties, in the character of their equipment and mounts, and in other matters that affect their contentment, efficiency and effectiveness.

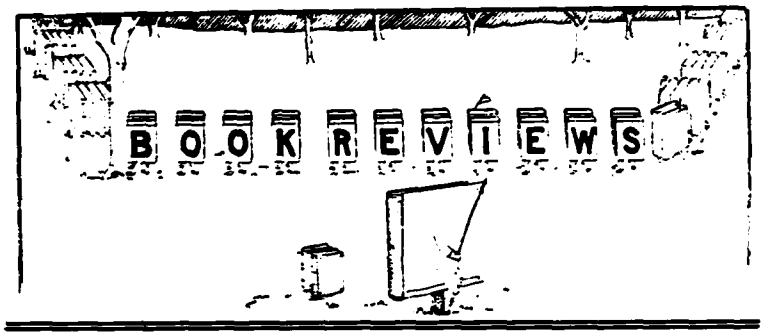
Who doubts that the Ordnance, the Quartermaster's, the Medical and other departments are better managed in every way than they would be if they had no chiefs? Even if all the supply departments should be consolidated into a single department, it cannot be doubted that each branch of it would still have its own sub-chief, and that only by such a division of the duties could efficiency be insured.

That the same is true of the line of our army cannot be doubted by anyone that has watched the change wrought in our artillery since a head was given to it. Up to that moment the artillery was a corpse. The well known affection that our last two commanding generals had for it was of no avail to quicken it. They had the rest of the army to look after; they could not give their entire time and atten-

tion to the favorite arm. But since then the artillery has not only come to life, it is the liveliest member of our military body to-day; it increases in life and efficiency with each succeeding day. And one has but to read the orders issuing nowadays from the War Department concerning it, to be persuaded that the change is mainly due to the chief.

Are we ever to have in our service a Chief of Cavalry? An officer with rank and prestige to give his entire time and thought to us only? Whose advice will be asked and listened to at the War Department? Whose judgment in cavalry matters will be depended upon? Whose decisions will be accepted? Who will sit at the seats of the mighty and relieve the Chief of Staff of the infinite details concerning us? Who will be a father to us? Or are we always going to be an orphan?

All that lacks is the creation of the office. Right men for the office are not far to seek either among our general officers or our cavalry field-officers. It would only be a question of election.



Guerilla or Partisan Warfare.*

Mr. T. Miller Maguire, M. A. L. L. D., Inner Temple, Barrister-at-Law, who has seen field service with British troops and feels deep interest in military affairs, has written a little book that may be read with interest and profit. Its title, "Guerilla or Partisan Warfare," while fairly indicating the purpose and scope of the work, is not respected so strictly that other valuable matter of collateral bearing is wholly excluded.

At the beginning, the author expresses surprise "that before the late war in South Africa, the operations of guerillas were not a part of the curriculum for the education of military officers in England" and that "in January, 1900, there was not one work on the subject in any London shop." By guerilla wars, he means "small wars, wars the leaders of which only had command of a few thousand men at a time; wars in which artillery did not play a leading part; and guerilla warfare in the bush and desert, and guerilla warfare in mountainous districts."

Of this kind of warfare, we may remark, both England and the United States have had much, and their military

*"GUERILLA OR PARTISAN WARFARE. By T. Miller Maguire, M. A. L. L D., Inner Temple, Barrister-at-Law. Hugh Rees, Ltd., London, Publishers.

history, if not text books, their experience, if not their curricula, make it tolerably familiar.

"The difference between partisan and guerilla warfare," says he, "is easier to describe than to define. A partisan—a *partida*, the leader of a parti—is a person in charge of a limited number of troops, whose operations are ancillary to the main operations, and yet, who does not occupy the position of a detaining force." In illustration, Stuart's, Forrest's, Morgan's, Mosby's and Stoneman's operations are cited, "whose object was to assist the general operations by distressing the enemy, perplexing the enemy, ruining the lines of communications of the enemy, and taking the supplies of the enemy."

"The destruction of railways, viaducts, bridges, is an important part of the duties of modern partisan troops." Quoting General H. W. Slocum as to the best method of destroying railway tracks, and as to the value of an efficient corps of foragers, known in Sherman's army as "bummers," Mr. Maguire in a foot-note declares: "No such foragers would be tolerated in France or Germany, or even in Manchuria."

The value of partisans in great wars may be seen from the following: "Four hundred and fifty thousand infantry, 50,000 cavalry, and 1,600 guns, were not enough in 1871 to hold down the French, who, though their "regular army was utterly ruined," were by the activity of their "francs-tireurs and other guerillas," enabled to force the Germans to use an additional "150,000 infantry, 6,000 cavalry, and eighty guns, to protect the railway that formed their principal line of communication." A similar task for similar reasons "was imposed on the 400,000 British soldiers in South Africa."

Still further illustration is discovered in the reduction of La Vendée: "Hoche conceived an ingenious mode of reducing the country, without laying it waste, by depriving it of its arms, and taking part of its produce for the supply of the republican army. In the first place he established some entrenched camps. He then formed a circular line, supported by the Sèvre and the Loire, so as progressively to coop in the whole country. This line was composed of very strong

posts communicating with each other by patrols in such a manner as to leave no free space by which the enemy, if at all numerous, could pass. Such methods had similar results a few years ago in South Africa. These posts were directed to occupy every township and village and to disarm the inhabitants. To accomplish this, they were to seize the cattle, which usually grazed in the common, and the corn preserved in the barns; they were also to arrest the principal inhabitants, and by no means to restore the cattle and the corn or release the persons taken as hostages, till the peasants should voluntarily surrender their arms. Now as the Vendéans were more attached to their cattle and their corn than to the Bourbons and Charette, in due time the peasants surrendered their arms." In Luzon, a like achievement, no less important and difficult, against a chief no less able and influential was accomplished by General J. F. Bell, whose measures, though generally similar to those of Hoche, were far more humanely executed.

But "limits must be set even to guerilla pertinacity: and when a man without uniform, without orders, without any connection with a regular government, and when the regular government was, properly speaking, abolished—when a man of that kind continues a war beyond reason, he then becomes to some extent an enemy of the human race." This accords with our theory and with—I was about to say practice: but experience in the Philippines makes it, at least, very doubtful whether officers will, in future, suit the practice to the theory.

As to Maxim and other machine guns: "That such light and handy and multiple guns are of inestimable value in trackless deserts against a foe ill-armed with artillery, or with no artillery, will scarcely be disputed."

When after Joubert's death, Botha was raised to chief command, "he was not ambitious to command masses of troops, but let the Boers fight in their own way with small flying columns, which appeared unexpectedly here and there, and were everywhere and nowhere at once. During the next few months, the English not only suffered considerable losses of men, but were placed at a serious disadvantage by

the erroneous waste of horses. The English cavalry were kept so constantly on the alert by the activity of these small parties of Boers, that the horses died by hundreds from overwork and from want of food and water."

The Cossacks "are the beau-ideal of partisan warriors. In April, 1899, the Emperor approved of new regulations for the action of Cossacks when in 'lava.' 'The "lava,"' wrote General Krasnov, 'is not, properly speaking, a formation of maneuvers; it is the whole tactical system of the Cossacks, and its form varies with each case. It is combat on horseback in open order, leaving to each man his individual initiative, and to each leader the means of profiting by all the favorable chances of the combat. Thanks to the intervals between the horsemen, the latter can move with rapidity over all sorts of ground, and cross obstacles as easily as if they were alone. They were very skillful in single combat, which was favored by their open order of formation; but they were always supported by bodies in close order. It was this formation, which was taken from the Tartar cavalry and called 'lava,' which enabled the Cossacks to weaken the enemy by isolated actions, and then to fall upon him in close order, so as to strike a great blow." All cavalry officers should study the "lava."

"Officers should constantly meditate on ruses, stratagems, ambuscades, and surprises. Hannibal was a master of this subject. Ample collections of *ruses de guerre* exist in French, and in the records of the American Civil War, especially in the lives of Stuart, Mosby, Morgan and other partisan leaders. Colonel Pilcher's little book 'Some Lessons from the Boer War,' just published, contains some excellent lessons in this branch of tactics."

The author's ideas on cavalry derived from the Boer War, are interesting:

"In the future a cavalry detachment, well trained with rifle, will probably often succeed in repulsing a superior force, and thus achieve a result which it could not have gained by ordinary cavalry tactics. This shows how important it is to give the cavalry soldier a good infantry training. I think it perhaps superfluous to draw attention to our

absolute unpreparedness with regard to horses in this war. The prevailing idea was either that we should never be called on to fight in a place where a preponderance of mounted men was necessary, or that our proportion of mounted men was sufficient. Be that as it may, we tumbled into a war where a man once mounted was five times as valuable as a man who had no horse.

"The Dutchman has an excellent way of teaching a horse not to stumble into holes. It is as follows: He finds a place where there is a good nest of holes, and he puts a native on the horse and lunges him around over the holes so as to train him not to put his foot into them. I think that perhaps the training of our troop horse is not that which makes him look out sufficiently for holes and bad ground: the more they are ridden over rough ground the better it is for the men who ride them when it comes to war."

Between regular and guerilla warfare important differences are noted:

"The strategical conditions are not reciprocal, and are against the regular invader, as the savage or irregular is not troubled about his lines of communication.

"Observe the swelling or contracting of savage forces, according to failure or success of invader.

"The subaltern officers were formerly of a higher standard of efficiency, relatively, than in regular warfare, but this condition is rapidly changing with the growing importance of individual efficiency in all wars. Still there is much more freedom and latitude of movement for subordinates.

"Savages are masters of surprises, and yet are taken aback by ambuscades and surprises applied to themselves.

"Reserves are not very much required for battles; but the flanks and rear are in constant danger on the march and in the battle.

"Attack early; savages and irregulars are not vigilant at dawn.

"Guns and cavalry produce an enormous moral effect in these wars.

"There is a danger of rushes by day and by night.

"The more irregular and desultory the campaign, the more important is the service of security.

"Attack and not defense is the first principle for regulars in small and irregular wars; but all isolated forces must be well protected, and have clear fields of fire, with flanking positions and obstacles."

The following arouses thought and sounds a warning:

"The natural man—the dweller in the hills and plains as distinguished from the product of the factory or large towns—has other qualifications besides eyesight and woodcraft which make him an ideal recruit. He can usually do with less food than his civilized brother; he will exercise greater frugality and economy with regard to what he obtains; he is an adept at cooking and preparing an impromptu meal; he knows where and how to obtain food if there is any to be had in the country; and he can usually manage to carry it with him in small compass. He is comparatively little affected by heat or cold; he can sleep as soundly on the ground as in bed; he is not often ill, and when he has slight ailments or has met with minor accidents, knows how to treat himself, and requires no medical advice. In a word, he is tougher, harder, more enduring than his more civilized brother, just as it is natural his mode of life should render him. In everything except discipline and armament he is, as a rule, superior to the man he has to fight.

"But now the growth of trade-routes and facilities of communication are rapidly taking away from us and the other civilized powers the privileges of better armaments. The possession of the newest and most perfect weapons is simply a matter of money, and the firms that turn them out will sell as freely to a savage as to the most enlightened of the world's rulers. * * * If Fuzzy-wuzzy be, as often he is, as good a man as Tommy Atkins, or Fritz, or Jacques, and is even approximately as well armed, numerical superiority, knowledge of the country, and better health, will go a long way to redress the balance in our favor, which experience and discipline in these days of loosened fighting may produce."

J. C. G.

Automatic Surveying Instruments.*

"Automatic Surveying Instruments and Their Practical Uses on Land and Water," written by Thomas Ferguson, member of the Shanghai Society of Engineers and Architects, is a booklet describing three automatic surveying instruments that were designed and used by the author: the pedograph, an automatic route-tracer for pedestrians; the cyclograph, an automatic route-tracer for vehicles; and the hodograph, an automatic register of courses and distances on water.

*"Automatic Surveying Instruments and Their Practical Uses on Land and Water." By Thomas Ferguson, member of the Shanghai Society of Engineers and Architects. John Bale Sons & Danielsson, London, Publishers.

The pedograph and cyclograph have been reduced to commercial form and are manufactured by the Nederlandsche Instrumentenfabriek, Oude Gracht, Utrecht, with great attention to detail and care in construction.

A review of the book must consist of a brief description of these instruments, because they are the subject-matter of the book, but it may be said, in passing, that the matter in the book is so clearly and happily expressed that there is a pleasure in its perusal that is independent of the interest awakened in the objects described.

When the reader is informed that the pedograph is a sketching board on which a little wheeled car is made to crawl around and leave behind it a trail on the paper that represents the course pursued by the pedestrian, he may be pardoned for some incredulity, but when he pursues the description further he finds that this is precisely what the pedograph will accomplish without other attention than turning a knob to keep the compass frame parallel with the needle.

The instrument is contained in a case 12 x 12 x 2½ inches, and weighs 7½ pounds. It is carried by a sling strap over the left shoulder, and hangs at the hip with the compass at the forward corner where it can be conveniently observed. When the surveyor has carried the instrument over the desired course, always keeping the compass frame oriented, he finds on the paper a trace, drawn to a known scale, of the route that he has pursued

The cyclograph is almost as startling in its operation and results as the pedograph. In its manufactured form it is designed to be attached to the handle-bars of a bicycle. When the bicycle with this attachment is ridden or trundled over the desired course, there is developed on the sketching board, in plain view of the surveyor, a trace in ink, at any desired scale, of the route pursued. The only manipulation necessary is the turning of a knob or handle which keeps the paper on the board oriented, with its meridian lines parallel with the compass needle. At any time the surveyor

may halt, and opening a hinged window, sketch in such details along the route as may be desired. The marker always indicates on the paper the station point at which the halt is made, and the sketch is always oriented to nature. In fact, the instrument is so constructed that the paper by its horizontality and constant orientation, represents the surface of the ground, while the little wheeled marker rolling over the paper and leaving a trail of ink behind it, represents in miniature the bicycle rolling over the ground and leaving its trail in the dust. The directions and distances pursued by the bicycle are reproduced in miniature on the paper. The mere thought of an instrument that will do his work while he is riding a bicycle over the country roads should be a delight to the worried and often exasperated military sketcher.

The hodograph is a most ingenious contrivance for keeping an automatic record of courses and distances traversed by a boat, and for plotting this record when made. This instrument has not been reduced to commercial form, and the author states that for similar work in the future he would apply the principles of the cyclograph and thus obtain an actual trace of the vessel's course instead of a record of directions and distances.

All who are concerned with "field sketching," whether for military or civil purposes, will follow with great interest and pleasure the pages of this little book, and will be especially struck with the evidence of persistent trial and patient experimentation involved in the designing, development and construction of the remarkable instruments that the inventor and author describes.

In the United States, James C. H. Ferguson, 220 Market Street, San Francisco, is the agent for the manufacturers of the pedograph and cyclograph. T. H. R.

Free Gymnastics and Light Dumb-Bell Drill.*

"Free Gymnastics and Light Dumb-Bell Drill," is the title of a very interesting and valuable little book recently published by Sergeant-Major J. B. Betts, of the headquarters gymnasium, Aldershot. The system of gymnastics as outlined in this publication is very complete and somewhat of an innovation over that now in use. It is invaluable in the training and developing of the soldier, and if properly directed will enlarge and strengthen the various muscles of the trunk, neck, arms and legs, and will expand the chest, render the joints supple, and will impart to the soldier ease and steadiness of carriage, combined with strength and elasticity of movement. The mode of gymnastics, which includes turning, bending, stretching, lunging, hopping, swinging and combination of movements, is simplified by excellent illustrations, and there seems nothing difficult or severe in executing any of the exercises. J. E. A.

Tactics for Beginners.†

The first thing that strikes an American in reading this little book, is the hopeless confusion he finds in the organization, or rather lack of organization, of the British army. One finds that a company may be commanded by a captain or a major; that a battalion consists of eight companies, and is commanded by a lieutenant-colonel; that a brigade consists of four battalions, and is commanded by a major-general, etc.

The regiment finds place only in the cavalry, and it consists of three squadrons, and each squadron is composed of four troops, and contains six officers and 120 noncommissioned officers and men. One is left to guess what the rank of the squadron commander is. A battalion of mounted infantry contains only four companies.

As in other European armies the telegraph corps forms part of the engineers.

*"Free Gymnastics and Light Dumb-Bell Drill." By Sergeant-Major J. B. Betts, Headquafters Gymnasium, Aldershot. Gale & Polden. Ltd., Aldershot, Publishers.

†"Tactics for Beginners." By Major C. M. De Gruyther, p. s. c. Gale & Polden. Ltd., London, Publishers.

The second chapter, "On Time and Space," gives the space, intervals and distances of different units in various formations, and contains several simple but useful problems, and their solutions, in determining the length of columns on the road. It is remarked that the cavalry trot of the English is at nine miles an hour.

The third chapter, "On Outposts," covers the same ground that is usually covered in similar texts under the same heading. We find here the term "outpost companies." Two systems are mentioned: the "chain system" and the "group system." The preference is given to the latter, which consists of Cossack posts, each post composed of a noncommissioned officer and six men. Among the things laid down for a sentinel to "understand clearly," the author, like all the rest, clings to that useless anachronism, the countersign. Does anyone that has had experience in war believe that the countersign is of any practical use?

An excellent set of rules is given for the selection of an outpost line, the best of which is that "time should not be wasted in trying to find an ideal line" at the start. "Patrolling posts" are not mentioned, but we find "standing patrols," which seem to be about the same thing under a different name.

The chapter on "Marches" is an excellent one. Marches are divided into two general classes: First, those made "beyond striking distance of the enemy"; second, those made "within striking distance of the enemy." In the first "the comfort of the troops is the main consideration"; in the second "everything must be sacrificed to tactical considerations." "More depends on the time the men are under arms than on the distance traversed." A march that keeps men under arms longer than nine hours is defined as a forced march.

Napoleon, Stonewall Jackson and Lord Roberts are mentioned as commanders whose personal influence over their men had great effect on their marching powers. Jackson's march in the Shenandoah Valley in May, 1862, is quoted as one of the remarkable marches of history. The author, however, fails to note that the speed of Jackson's "foot-

cavalry" was largely due to the entire lack of packs and impedimenta.

The next two chapters treat of the advance and rear-guard, and reports. Nine important rules governing the writing of reports are given.

Chapter VII discusses the subject of the reconnaissance. The "advanced cavalry," which comes in this chapter, is as concisely treated as could be desired. A distinction is made between the "advanced squadrons" of the cavalry-screen, and the "contact squadrons." The former correspond to the "contact troops" in our text-books, while the "contact squadron is entrusted with a special mission, and acts independently under its own commander."

The entire subject of minor-tactics, beginning with outposts and ending with patrols, occupies only 100 small pages; and yet, so full of meat are they that the "beginner" should feel after devouring them, that he has had all that is worth while on the subject.

In chapter VIII the evolution of tactics since 1866 is reviewed, and the deductions from the campaigns of '66 and '70 are summarized in twelve "lessons," while the summary of the lessons learned from the South African War embraces twenty-six headings.

Machine-guns proved so useful in this war, that since then one has been attached to each British battalion of infantry and regiment of cavalry. They are also being tried in our own service to-day. Each battalion of the Sixth Infantry has a machine-gun. However incongruous and out of place these guns appear borne along upon ugly mules at the dress parades of the regiment, they will find their place and use in any action these battalions may have the fortune to engage in.

The present campaign between Russia and Japan is mentioned, but the strict censorship maintained on either side, had made it impossible for the author to obtain data upon which to base tactical conclusions. Few trustworthy deductions will be drawn from the tactics of this war until after it shall have ended, and the reports of the various attachés shall have been published.

The chapters on cavalry and artillery contain nothing new, but the ones on infantry and "the three arms combined" are the most useful in the book, because they discuss in the light of actual experience, the formations, distances, intervals and methods of advance, etc., in the modern battle of rapid fire, flat trajectory, and smokeless powder—matters upon which all that was written before 1898 is now obsolete.

In one of these chapters, also, are stated the modern rules for the carrying out of orders, viz.:

"(*a*) A formal order must never be departed from either in letter or spirit, so long as the officer who issued it is present, and can see what is going on, or if he connot see what is going on, provided that there is time to report to him without losing an opportunity or endangering the command.

"(*b*) A departure from either the spirit or the letter of an order is justified if the officer who assumes the responsibility is conscientiously certain that he is acting as his superior would order him to act, if he were present.

"(*c*) If a subordinate, in the absence of a superior neglects to depart from the letter of his orders, when such departure is clearly justified by the circumstances, and failure ensues, he will be held responsible for such failure, and the excuse that he obeyed orders will not be accepted."

These might well have been reserved for chapter XIV, whose title is "Orders." This is a good chapter though it contains nothing original. The importance of the subject, how to write field orders, seems about to have a tardy recognition in our own service. The new Field Service Regulations will have some pages concerning it, with models of such orders. And that it is high time, no one that has made a study of the subject will doubt, after reading some of the orders issued in our recent campaigns in Cuba and the Philippines, not to say at our maneuvers. The basis of this chapter of the book under review is, apparently, Major Griepenkerl's "Letters on Applied Tactics," a book which ought to be on the shelf of every young officer.

Chapter XV gives in concise form the usual treatment of night operations.

The discussion of the attack and defense of villages contains little that is new, but strengthens the student in the opinion that it is a waste of good infantrymen to send them against stone buildings held by the enemy, before they have been battered to pieces by artillery. Our experience with the stone building on the hill at El Caney might have been cited as an example.

In his chapter on the attack and defense of woods, and wood-fighting in general, the author draws his best lessons from American battles—lessons which the Germans failed to profit by in their campaign against the French. In this connection he says: "Cavalry as such, pure and simple, are of little use in wood fighting. * * * But cavalry trained to fight on foot, like the American cavalry in 1864, are very useful."

Rivers, defiles and convoys have been treated so often in works on tactics, that nothing which is new is left for the author to say.

The last chapter concerns "Savage Warfare," but since the author seems never to have heard of American Indians or Moros, his lessons are not specially useful to us. One characteristic that he remarks of the savages with whom British soldiers have fought is equally true of our Indians—that of seldom attacking at night.

In campaigns against savages like the Zulus, the Matabeles and the Dervishes of the Soudan, whose tactics are distinctly offensive, the author recommends a combination of the *strategical offensive* with the *tactical defensive*. But when the tribes show a reluctance to attack, it is suggested that they may be induced to do so by a retrograde movement or other stratagem calculated to raise their morale. We know that our prolonged inaction and efforts to avoid trouble with the Filipinos in 1898–1899 were interpreted by them as timidity, and were mainly what induced them to bring on hostilities. Would such a policy have worked with Chief Joseph? If General Howard had turned back some Saturday instead of halting every Sunday, would Joseph have taken up the pursuit and attacked?

The success of the British at Omdurman, their slaughter of 11,000 Dervishes, leads one to wonder what might have been the result, if Custer's troopers had been armed with

magazine carbines instead of single-loaders. Not a single Dervish got within 250 yards of the British infantry.

On the whole, this is a valuable little book. There is no padding and little quoting. Examples cited seem to have a real purpose. Its form and arrangement are excellent. The discussion of each topic ends with a summary of the conclusions. The marginal notes assist the eye greatly in searching for matter, but they do not make fair amends for the omission of an index.

The author's style is clear and concise, but it would be too much to expect an English military writer to eschew the split infinitive or to say "different from," instead of "different to." Even Thackeray has said "different to," which would make it right, if anything utterly wrong could be right.

M. F. S.

GENERAL THEODORE J. WINT.
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CAVALRY IN MODERN WAR.

By Captain JAMES G. HARBORD, Eleventh Cavalry.
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"Cavalry is all that it ever has been and more; it moves abreast of tactical reform; more than ever it is a strategical factor; if now it seldom thunders down in ponderous masses upon the *front* of an infantry line of battle, it may yet dash with equal effect upon the hostile flanks. If more poetry in the past, there is full measure of glory and usefulness in the future."—*General T. F. Rodenbough.*

IN these days when our country carries more weight among the nations than ever before; when no important move is made in the world's politics without ascertaining in advance the attitude of America; with interests in every clime, and responsibilities as widely scattered as our regimental standards, we must recognize that increased importance creates jealousies, extended frontiers bring probabilities of friction, and be ready if necessary, to fight for peace.

As early as the time of Frederick some held that with the invention of firearms cavalry had lost its importance in battle. At the outbreak of our Civil War the same idea was prevalent, but both sides steadily increased their horsemen, until in 1865 the Northern guidons fluttered over eighty thousand cavalry. The cavalry emerged from that conflict with credit, and with its work in Indian wars, its part in the

Santiago campaign and the Philippine insurrection, still holds its place in public esteem. But cavalry is expensive, and few would advocate the false economy which provides something cheap and regrets it in the end. The best brains in Continental armies have studied the problem of having an effective cavalry ready to take the field in war without the burden of maintaining it during peace, and their failure indicates the impossibility of solution. With some still contending that the cavalry day in battle has passed, and facing certain expense if we maintain it, we should glance at what cavalry has done in modern war, and inquire what it can still do, and whether we have need of cavalry.

WHAT HAS IT DONE?

Napoleon's use of cavalry was tactical and strategical, but in the peace which followed Waterloo, men lost sight of cavalry efficiency until our Civil War commanded attention. In that great struggle cavalry importance increased, new characteristics were added, and old ones retained. Cavalry became self-protecting, fighting mounted and dismounted against infantry, cavalry and artillery, and almost reached independence on offensive or defensive, at rest or in motion. In the Gettysburg campaign it screened, raided, held positions until the arrival of infantry, reinforced infantry battle lines, and fought straight cavalry battles with revolver and saber. Perhaps so much cavalry efficiency was never crowded into so short a time as by Sheridan's horsemen from March 29 to April 9, 1865, a brief twelve days, which included Dinwiddie, Five Forks, Sailor's Creek; and it finally barred Lee's retreat at Appomattox that April morning until the arrival of the infantry ended the war. So too, Wilson's ride with twelve thousand horsemen through Alabama and Georgia exemplifies a complete school of modern cavalry warfare—charging mounted against infantry and cavalry, fighting infantry on foot, assaulting earth works, doing his own field engineering, and capturing cities and immense supplies.

From later conflicts the cavalry student has not much that is new to learn. Cavalry combats in the Six Weeks' War did little to influence general results, though after Königgratz the cavalry was found in advance of the main army. The results did determine the Prussians to increase their cavalry notwithstanding the breech-loader, and shaped their ideas for the Franco-German War. In that war after Worth and Spicheren their cavalry was found well in advance, gained full intelligence of the French, and provided for the security of the German armies. Nor was it wanting on the battlefield. At Mars-la-Tour 800 men charged a French corps d'armée, pierced the line of battle and charged on until met by superior cavalry, when it rode back through, having brought 40,000 soldiers to a standstill and gained invaluable time. This charge cost three-fourths of the little command, lost not to rifle or cannon, but to fresh cavalry who charged with saber and lance, and found Von Bredow without reserves. In the Turko-Russian War, Gourko's raid showed the Russian adoption of American methods, and in 1882 the British cavalry held Cairo until the arrival of the infantry, which resulted in the surrender of 10,000 men, and ended the war.

Within fifty years cavalry has faced the saber, revolver, lance and carbine of other cavalry; has suffered fire from old smoothbore and modern cannon; has charged the muzzle-loader, breech-loader and magazine rifle of infantry; has developed the function of screening, and perfected the duty of security and information; has proved its ability to take care of itself against infantry in country unfit for mounted action; and has raided through hostile country—always emphasizing the importance of the dragoon, the type of cavalry toward which all nations are turning, and for the model of which military students still search the history of our Civil War.

WHAT CAN CAVALRY STILL DO?

Under present conditions its chief use is strategic. It finds opportunity far to the front at the opening of war to hinder the enemy's mobilization, gain touch with him, occupy important points on the line of advance, seize magazines, make requisitions, destroy roads, railroads, telegraphs, canals, junctions and bridges, and to gain the advantage of moral

effect. Far in advance it meets the opposing cavalry attempting the same for the enemy's army. Cavalry battles result, and to one side or the other accrues the prestige, never to be underestimated, of the first victory. That side by driving its opponent upon his infantry secures a strategical advantage. Generally cavalry must whip cavalry before it can attack the other arms. If encountered in wooded or broken country it fights on foot. Where delay is desired it engages dismounted at bridges, defiles, embankments, cuts and fords. It holds its own or more with the enemy's dismounted cavalry, and brushes aside small bodies of infantry. Its judicious employment in reconnaissance should have a paramount influence on the campaign. When the main armies meet and the cavalry has played its part in battle, the victor will use his cavalry in pursuit, and it will again be opposed by cavalry and have to defeat it before it pursues the infantry and artillery. Undertaking this duty, it establishes and maintains contact with the enemy, scouts the country, searches telegraph and post offices and railway stations, and exhausts all sources of information. The opposing cavalry observes the victor, ascertains whether all his force is pursuing, makes stands to delay that pursuit, destroys bridges, fords, railroads, canal locks, tunnels, rolling stock of railways, besides scouting the country for information. During any period of operations an efficient cavalry may undertake raids. It will ravage the country, destroy property and supplies of the enemy or his adherents, break communications and get information, decoy his cavalry from where its presence is inimical, disturb his plans, perhaps even causing detachments from his main army, and damage his morale and help its own.

Tactically, cavalry is well adapted to advance and rear guards. In battle it has as much usefulness as ever. The power of modern arms has increased the difficulty of choosing the moment for cavalry on the battlefield, but the problems still remain. The equipment of cavalry with the magazine carbine (in our service it is to be identical with the infantry rifle) has greatly increased its efficiency. The fire of dismounted cavalry is as effective as that of infantry.

The open order fighting of infantry gives cavalry a chance it never had when squares could be formed against it. The loss of life in battle has been diminishing in proportion to the numbers engaged as projectile weapons have improved. Considering the horse a missile of the cavalry, the reduced caliber gives it an advantage over other days. Who chooses a thirty-caliber Krag to shoot tigers, if he can get a twelve-bore rifle? What officer who knows the Moro, will risk the thirty-eight caliber revolver if he can get a forty-five? And the object is the same, to stop a charging animal. The small bullet may perforate bones without fracture and in any case may leave life enough in the horse to bring him to contact with his rider's enemy.

When the infantry of the main bodies clash, the cavalry passes to protect the flanks of the army. From there it may be hurried where its fire action will be of use in the line. It may charge the opposing cavalry in any circumstances under which cavalry has ever charged it. When may cavalry charge infantry? Charging cavalry now needs nearly three minutes to cross a fire space of about 1600 yards while the rifleman is firing fifteen to eighteen shots. The maneuver instructions for 1904 assume that fresh infantry firing over an open plain with magazine rifle will inflict losses of one and one-fourth per cent. per minute on mounted troops moving in the line of fire at charging gait, at five hundred yards. If you balance the added accuracy they will have under 500 yards against the lack of it from 500 up to 1600 yards, the losses will not stop well trained and patriotic cavalry. No moral effect on either side is considered. But battles are not decided by arithmetic. The instinct of self-preservation is as strong in a man with a magazine rifle as it was in a cave-dweller carrying a club. In the best of foot soldiers there still lingers a trace of that dread of the trampling hoofs of charging squadrons which has existed since men first went to war on horses. Cavalry in battle is used in smaller bodies than formerly. It appears from the flanks in small flexible columns which admit of a rapid deployment into line. Infantry in extended order is particularly vulnerable to attacks on its flanks. Cavalry may charge to roll up

a firing line or compel an unfavorable formation. When infantry have nearly spent their ammunition, when exhausted by rifle or artillery fire, or in retreat, or when it is of poor quality or surprised, there is every prospect of the success of a charge Cavalry has in all time charged unshaken infantry to enable its own to arrive or get away, and even in the most hopeless case it will be useful to the extent that it draws fire or causes delay. The cavalryman, like every other soldier-man, must be prepared to make sacrifice. When infantry fires against infantry or two artilleries oppose each other, each is too occupied to watch the enemy's cavalry, which may thereby gain its flank or rear unperceived. Carefully trained, armed and mounted, the cavalryman should believe that no infantry can stand his charge, for even against unshaken troops who shall say what infantry is shaken and what not? Fine troops from an exterior view may have lost heart and morale. Arms have improved, trajectories have flattened and powder no longer smokes, but the man behind the gun is the same old kind of a man. Proportionally he has not improved with his rifle. The lifted veil of smoke now shows him what was hidden in other days, the dead and wounded, the ghastliness of torn limbs, gaping wounds, and the ebbing of the crimson life-tide. There still comes a time when tension and exertion long sustained, the loss of comrades, the cries and groans of wounded, unnerve the soldier, no matter how recent the patent of his rifle, and make him the prey of charging horsemen.

The cavalry of to-day is conspicuous for its self-reliance. With all the dash of the old days, it charges wih saber or revolver in hand, and carries its infantry support in the carbine scabbard.

DO WE NEED CAVALRY?

With a peace army that is only a nucleus for one of volunteers, the proportions of the several arms differ from those of an army complete for war. The cavalry and artillery in our peace army should be relatively greater than the infantry. Cavalry is the arm needed first, and it takes the longest to create. Business sense, sanctioned by the practice of all

the great military nations, dictates that we have least relatively of that which can be most quickly replaced. The cavalryman must be taught the use of three weapons and the care and use of a horse. It is the arm which ought to be kept in a constant state of preparedness for war. This is why the great Continental powers maintain expensive hosts of cavalry in long years of peace. Cavalry cannot be improvised. Mount a poor rider with pack in front and behind him, hang on a saber, revolver and carbine, and you no more have a cavalryman than you can get a doctor by clothing a man in professional garb and arming him with a box of pills. Our strength in war lies in the Volunteers. The infantry of the National Guard reaches into many thousands. The cavalry and artillery number but a few hundreds. The National Guard and our Regular Army will form our first line in war. The expense determines that the Nation shall furnish the mounted branches while the Guard assists with infantry. In 1898 there were five volunteer cavalry regiments and some scattering troops, while the infantry went beyond two hundred thousand. There are several hundred military schools and colleges scattered through the country, some government aided and some private. All of them give infantry instruction, some add artillery, but less than a dozen profess to instruct in cavalry. In every other business the experience of the old and wise is valued. We either reject the practice and belief of the older military nations or must maintain a force of cavalry which, when combined with a proper amount of artillery, the thirty regular infantry regiments and those of the National Guard, shall form a well balanced, correctly proportioned force for our first line in war. Surely we should follow this policy.

Organization in proper numbers must precede action, or even the preparation for action, by practical and theoretical instruction. No matter how scholarly and dutiful in peace, nor how dashing and devotedly patriotic her cavalry may be in war, there is something to be done by the Nation in properly utilizing such qualities, or they may but lead to her misfortune through the wasteful sacrifice of some of her best blood.

SIMPLER COMMANDS IN THE CAVALRY DRILL.

By Captain SAMUEL D. FREEMAN, Tenth Cavalry.

THE object of military commands is to secure the orderly execution of prescribed movements in drill or evolution. To insure this result, the command should accurately describe in military terms the movement to be executed; its language should be such as clearly to distinguish this movement from all others; it should be as brief as is consistent with the preceding conditions, and, finally, it should conform to a consistent system of military terminology. That is, the essential elements of a good military command are clearness, brevity and conformity to system, stated in their order of importance.

Generally the commands in our very admirable drill book conform pretty well to all these elements, but I believe that, particularly in regard to the last two named, there is still room for improvement. This seems to me particularly true of commands in the "evolutions of the regiment," and in a lesser degree of those in the "school" of the squadron and of the troop.

Military formations are of three classes, as described in the definitions of the drill book, viz.: order in line, order in column, and order in echelon. The last may be considered as a variation of either of the other two. Either may consist of elements, or units of various forms and dimensions, as is readily seen. The designation of either class of formation and of the units which compose it is a complete description of that particular formation to the military man. The object of the whole series of commands in the manual is simply to tell the different units of the organization how and when to change from one position to another, or from one of these formations to another, and the cases are rare in which

anything more than a brief indication of the movement and a signal for its commencement is required or desirable.

It will probably be conceded at once that the largest organization that can safely be maneuvered by a single voice or trumpet is the squadron, and that, consequently, the squadron must be considered the largest tactical unit of maneuvers. Commands, therefore, for the evolutions of the regiment should be addressed to the majors, and the squadrons should move to the execution of the evolution at the command of their majors. This is provided for, of course, in the drill book in a great many cases in a most admirable way, but in others it is made difficult. Majors are required to repeat the commands of the colonel and then to give the commands necessary for the movement of their squadrons. Now in some cases the colonel gives long, complicated commands, which include those for the movement of a particular squadron, which are identical with those of the major of one squadron, but which do not concern the others at all. To repeat such commands according to the rule is very cumbersome and possibly confusing.

Such a command, for example, is: 1. *Column of fours.* 2. *First troop, first squadron.* 3. *Right forward.* 4. *Fours right.* 5. MARCH.

There is no real necessity for such commands.

In order to avoid the repetition of such complexities, it should be sufficient for the colonel to indicate in general terms the character of the movement to be executed and to signal or command its beginning. This is most admirably done in such commands as: 1. *Line of fours.* 2. *On (such) troop (such) squadron.* 3. MARCH, though there is really no good reason why the colonel should descend to such particulars as specifying the troop which shall be the base of the movement.

It is an accepted principle of the drill that, after the formation of the squadron, no cognizance is to be taken of the relative order of troops in the squadron or of platoons in the troop (Par. 704). It is equally well established that after the formation of the regiment, no cognizance is to be taken of the relative order of squadrons in line or column. It

should, therefore, in general, be a matter of indifference to the colonel in what order the troops or platoons of a squadron may be found upon the completion of a movement. Some simple general rule would suffice to regulate those matters in all cases except where the colonel, for reasons, chooses to specify the order of movement with more particularity. All that is desirable might be accomplished by a modification of Par. 851, directing in more general terms that majors shall conduct their squadrons to position by the most direct methods of the school of the squadron that are applicable to the particular case. This would give both the colonel and the majors latitude in handling their commands.

The principal cases in which simplification of commands is possible and desirable are: (1) Those which involve formation of column, by troops, platoons or fours; (2) those which concern formation of line of fours, or line of platoons in column of fours, and (3) those for changing front.

Take the third case: The change of front by a single command is provided for in only one case, that of the regiment in line of masses (Par. 903). In all other instances it requires two commands and two movements to accomplish the same thing, and this without gaining anything in time, simplicity or directness. If the movement is a desirable one, as it seems to be, there is not the slightest objection, so far as I can see, to using the same form of command, as in Paragraph 903, for a regiment or squadron in line of any kind (Par. 732, 904), and other similar cases.

Paragraphs 749 and 771 require no change, though it is to be noticed that the figure in the text for Paragraph 771 is wrong for the movement there laid down, but corresponds exactly to "Squadron right." For a simple change of front, the commands suggested might well be introduced.

In movements of the second class above, viz.: those involving formation of line of fours, it is to be remarked that there is no essential difference between a line of troops in column of fours and a line of platoons or squadrons in column of fours (Par. 881), and all are provided for in the text.

If it be desirable to restrict the term "line of fours" to the line of troops in column of fours, it is certainly permissible and, I think, advantageous to say "line of fours by platoon" or "line of fours by squadron"; neither expression would cause the least confusion in the mind of any one who knows what is a line of fours.

The present command seems to me very clumsy and more liable to produce error than if such a formation were designated "a line of fours by platoon." Thus (Par. 774) the command might be: 1. *Right front into line of fours by platoon.* 2. MARCH. And Par. 746: 1. *On right into line of fours by platoon.* 2. MARCH. And so for other cases. Similar commands would be good in the school of the troop. (Pars. 615, 616.)

In regard to the first class of movements above—forming columns of various units—it is desirable to be able to form column to the front or rear as well as to a flank. This may be done in a manner entirely similar to the formation of the column of fours forward or to the rear in the troop drill. In this connection, it may be remarked, there seems to be no command in the "school of the regiment" for advancing in column of fours from line.

The regiment, or squadron, being in line, to advance in column of fours, platoons or troops, the following simple form of command is sufficient: 1. *Column of fours* (*platoons* or *troops*). 2. *Right forward.* 3. MARCH. If by fours, the major of the right squadron gives the same command for his squadron, and the movement is executed as in Par. 720, school of the squadron. The other squadrons move by fours to the right and follow the first.

If by "troop or platoon" the right unit moves forward as before, the remainder execute fours right and then fours left in time to follow the leading unit in column. There is no complexity, no delay, no multiplication of commands, no introduction of new things.

Being in line of columns or line of masses, to march in column of fours forward or to a flank (Paragraphs 748, 896, 757, 758 and 901) the command may be: 1. *Column of fours,* 2. *Right* (or *left*) *forward.* 3. MARCH. Or: 1. *Column of*

fours, 2. *On first* (or *fourth*) *troop*, 3. *Right* (or *left*), 4. MARCH. So from line of platoon columns, to march in column of platoons (Pars. 772 and 910) the command may be: 1. *Column of platoons*, 2. *Right forward* (or *right*), 3. MARCH. And in Par. 1047, review: 1. *Pass in review*, 2. *Column of platoons*, 3. *Right*, 4. *Guide right*, 5. MARCH.

Other changes suggest themselves, but these cover about all of the cases where simplification may be urged as decidedly advantageous. There might, for instance, be something said in favor of returning to an old expression, "by fours," inasmuch as the same very accurately descriptive form of words is used to advantage in such cases as "by file," "by trooper," "by twos," "by platoon," and is perfectly familiar to everybody. For the sake of uniformity, or "system," it might be better to adopt the somewhat longer expression, "column of fours," even for the troop, and say: 1. *Column of fours*, 2. *Right forward* (or *rear*), 3. MARCH. And: 1. *Column of fours*, 2. *Right*, 3. MARCH. There is a tendency, too, and it seems to me a very natural one, to drop the word "forward" in putting a column in motion and changing direction at the same time, as there is really no more reason for saying "forward, column right" than there is for saying "forward, right turn."

Effort should be made to simplify and generalize the commands of superior officers, leaving to subordinates the duty of giving the proper commands for their units in turn. I believe that this, in addition to other advantages, would tend to secure greater alertness at drill on the part of every officer and man.

The commands of the colonel should conform more in style to those laid down for the brigade commander—direct, simple indications of the movement to be executed—for the reason, as before stated, that it is practically impossible for one voice or one trumpet to control the movements of a full regiment of cavalry.

It may be worth while to call attention to an apparent exception to the above statement. In the formation of the regiment, the adjutant gives the commands for drawing saber and presenting to the colonel; whether the adjutant, being the mouthpiece of the colonel, is supposed to have a more powerful voice than any one else, is not determined.

It would seem quite appropriate to omit the saber present at formation and allow the adjutant to report when the regiment is formed, as is done in the case of the squadron. If it is desired, however, to retain the present, the majors should command "draw saber" while the adjutant is proceeding to join the colonel, and the command "present saber" as soon as the adjutant takes his post. When the salute is acknowledged, they should bring their squadrons to "carry saber" and await the pleasure of the colonel.

THE ORGANIZATION OF AN ARMY.

By Captain JOHN P. RYAN, Sixth Cavalry.

THE purposes to be subserved by military organization may be divided into two general classes: First, those which relate to the employment of the army in battle, and second, those which relate to its general maintenance both in peace and war. The first gives rise to what is termed the tactical organization of the army; the second to its administrative organization. Originally these two forms of organization were often quite distinct; thus, companies and regiments were purely administrative units, while battalions were only employed in war. To a greater or less extent, this distinction continues to exist in most armies at the present time, as in the regiment of artillery and in the heavy infantry regiments of some of the Continental armies.

It is now recognized that the best organization for an army is that which serves both the tactical and administrative needs, and this is the direction of all modern improvements in organization. Success in battle being the ultimate object of all armies, and this depending mainly upon the facility with which the army can be commanded and maneuvered on the field, it follows that tactical considerations are of vital importance in determining the organization to be given to the army. It is, of course, desirable that the arrangement and grouping of the troops should facilitate the important questions of supply, sanitation, etc., but these and all other administrative needs must be regarded as secondary.

Organization, in the most general sense, means the bringing of independent bodies into such interdependent relations with one another as to form a single organic whole, in which all the parts will work together for a common purpose. As

applied to an army, the independent bodies are primarily the individual soldiers, and the tactical purpose to be accomplished by organization is so to bind together the general who commands and the soldier who executes that the whole may act as a unit in accordance with the wishes of the commander. The manner in which it is sought to bring about this result is practically the same in all modern armies, and may be briefly outlined as follows:

First, those individuals who are to use the same weapon are assembled in small groups and placed under a leader by whom they are trained in the use of the weapons and by whom they are commanded in the fight. Several of these groups are then united to form a larger group, and these are again combined to form still larger groups, and so on, each unit-group and each combination of groups being commanded by a leader who receives his orders from, and is subordinate to, the commander of the next larger group of which he forms a part.

The system of organization now in use is based on the experience of centuries of warfare. It has been a progressive development, keeping pace with improvements in arms and methods of war and the ever-increasing size of armies.

To a better understanding of present methods, it seems advisable to review briefly this development. Following the downfall of the Roman Empire and for many centuries thereafter, practically no military organization existed in Europe. While wars were frequent during the middle ages, no permanent armies were maintained, and the profession of arms was the occupation of adventurous spirits who were banded together in companies, sometimes four and five hundred strong, under the leadership of more or less renowned captains, and who were employed by kings and princes in their petty wars. Armies were raised only when war was imminent, and were made up in great part of these mercenary bands, in part of national levies, and later of feudal contingents. Companies and regiments were sometimes formed for administrative purposes, but tactical organization there was none. The battle was a mêlée and the troops, once en-

gaged, could only be withdrawn when one side or the other was defeated.

With the collapse of feudalism and the consequent growth of national life, standing or permanent armies began to be maintained. In the beginning, these armies were often made up of the old bands of wandering mercenaries, and while they were organized into companies and regiments, each company continued to carry its own banner, indicating its real origin, and there was no uniformity either in the strength of the company or regiment. With the introduction of regular and scientific tactics, which followed as a natural consequence to the standing army, the advantage of bodies of uniform strength became apparent, and battalions and squadrons were introduced as the fighting formations of infantry and cavalry.

Originally, battalions were dense masses numbering several thousand men and containing many regiments. As changes in arms led to the adoption of more extended formation, it became necessary to subdivide into smaller fractions, and battalions were gradually reduced in size until they became mere fractions of a regiment. Finally, when the advantages of uniform and permanent organization were more fully understood, regiments were also made of uniform strength and the battalion became a fixed fraction, usually one-half or one-third of a regiment, but still retained its distinct character as a tactical unit; while for administrative purposes, recruiting, payment, clothing, etc., the regiment was the unit.

About the latter part of the seventeenth or beginning of the eighteenth century, brigades, formed of several battalions, were first used; later, divisions, composed of the several arms, were occasionally employed in battle. It was not, however, until the latter part of the eighteenth century, during the wars of the French Republican armies that the division as we now understand it, having its permanent commander and staff and proper proportion of the different arms, became a permanent feature of army organization.

Prior to the introduction of brigades and divisions, the army was merely an aggregation of battalions and regiments. For the battle, the army was formed with an advance-guard, a first and second line, and a reserve. It was also divided into wings, there being distinct commanders for these bodies as well as for the infantry, cavalry, and artillery. The higher commanders were all attached to the general headquarters, and were detailed for these subdivisions of the army by the day, and there was no bond of union between the general and his command, as there is between a general and his division.

In 1805 Napoleon formed the first army corps, which, because of its utility in handling large armies, was shortly after adopted by the other nations. Later developments have been the grouping of separate armies under the command of a general-in-chief.

This brings us up to the present time and to a consideration of the armies of to-day. The various groups into which an army is subdivided arrange themselves naturally into two classes: First, those groups which are made up entirely of one arm of the service, and which have a certain degree of permanency, as companies, squadrons, battalions, regiments; and, second, those groups which are formed by the combination of the several arms, and have a temporary character, as brigades, divisions and army corps. The lesser groups constitute the special organization of the several arms of the service. The larger groups relate to the organization of armies. This distinction has been recognized in the preparation of this paper, and the subject is treated under the two sub-heads: "The Special Organization of the Several Arms," and "The Organization of the Army."

Beginning with the company, which is the smallest group of infantry and which has its counterpart in the troop or squadron of cavalry and the battery of artillery, its strength is determined within limits by the requirement that it should be able to act as a unit in the battle under the direct command of a single leader. Thus, at the present time, we find companies consisting of from 100 to 125 men led by a dismounted captain, as in the British army and the army of the United States; and of 200 to 250 men commanded by a

mounted captain, as in the Continental armies and the army of Japan.

Before the development of the present dispersed order of fighting, and when the attack was made by the battalion as a unit in a deep column of subdivisions, the size of the company was of very little importance from a tactical point of view. In some cases, as in the army of Frederick, the company organization was entirely ignored in the battle, his battalion of five companies being divided into eight platoons or sections for the purpose of drill and fighting. At this time the company was merely an administrative unit consisting usually of about one hundred men.

With the development of the line attack, the difficulties of command were immensely increased It was no longer possible to handle the battalion as a single unit and its rôle in this respect was gradually assumed by the company. As the new rôle of the company became recognized, the advisability of adding to its strength and thus increasing its efficiency in independent action became apparent, and it has been steadily augmented until it has attained its present size of 250 men, which is probably a maximum under present conditions of warfare. The company has, in effect, replaced the battalion as a fighting unit, and the battalion of to-day is the brigade of the eighteenth century.

With the development of extended order, the number of men that can be directly influenced by a single leader has rapidly diminished, and while it may be possible for a mounted captain to exercise direct command over two hundred dismounted men, he can not exert over all the men, when deployed in extended order for battle, that personal influence and control necessary to give effect to his commands. The company is therefore subdivided into several platoons, each led by a lieutenant, the platoons are divided into sections led by sergeants, and finally the sections are divided into squads of eight to twelve men under the charge of corporals, thus carrying out the idea of personal leadership to the last man.

The company is also an important administrative unit. The captain is responsible for the discipline, instruction,

supply and general maintenance of his company, and the fighting efficiency of the army largely depends upon the character of his work.

The next larger group of infantry is the battalion, which in the armies of all the great powers contains on a war footing about one thousand men, and is formed by uniting four strong companies, or eight weak ones, as in the British battalion. The only exception to this rule is found in our own army, where the battalion is made up of small companies and has a war footing of about five hundred men. During the War of the Rebellion, our battalion was in some instances organized as in the British battalion at the present time, that is, of eight small companies aggregating about eight hundred men, and our experience appears to have been that of foreign armies: that the battalion was too large to be handled as a fighting unit and contained too many companies to be treated as a group of separate units. Upon the outbreak of the Spanish War, the battalion was reëstablished for the infantry, but was reduced to four companies numbering about four hundred and fifty men. While the battalion may be considered to have lost its function as a fighting unit, it is still referred to by most military authorities as the tactical unit of infantry. Used in this connection, it appears to mean the smallest body of infantry capable of carrying out a definite object in the attack through its several phases.

The term, tactical unit, as used at the present time, is not susceptible of exact definition. By some authorities it is defined to be the smallest fraction of a body of troops which can fight independently and perform some specific duty on the battlefield, the individual men and horses composing it being personally known to the commander, who must, moreover, be able to direct it by word of command. By others it is used in referring to any tactical group which forms one of the main subdivisions of a larger group: thus the regiment is sometimes called a tactical unit of the brigade: the division, the tactical unit of the army, etc. Colonel Wagner says the tactical unit on which the organization of an army should be based is the largest body of troops that can be directly commanded by a single leader and at the same time

be able to appear in close order on the battlefield without quickly incurring ruinous losses from the enemy's fire.

However, most authorities agree in considering the battalion, the squadron and the battery as the tactical units of the different arms. Referring to the small size of our company and battalion as compared with that of all other large armies, I offer the following suggestions:

It is a fundamental principle of tactical organization that the number of independent units in an army or other body of troops should be as small as possible—this to facilitate the transmission of orders and the execution of commands.

As a corollary to this, it follows that the strength of any independent unit should be a maximum consistent with the natural limitations of the case. If a mounted officer, assisted by four lieutenants, can maintain effective control over two hundred men in battle, then it is advantageous and economical to have this organization. With this size for the company, the battalion would naturally be 1,000 men, for the battalion commander can handle four companies as readily as the brigade commander can maneuver four battalions or the division commander several brigades. On the other hand, the difficulties of command and control are greatly increased with untrained soldiers; smaller units and a greater proportion of officers are necessary. This would seem to fit our case.

The battalion is not ordinarily an administrative unit, though in the British army it replaces the regiment in this respect. In our army it has not been customary to retain the battalion organization in time of peace, but by the law of March 2, 1901, the infantry regiment was organized with three battalions, and an administrative staff consisting of a commissary and quartermaster was assigned to it. To this extent the battalion has become with us an administrative as well as a tactical unit.

The regiment, which is made up of two, three or four battalions, was originally an administrative unit solely, and it still retains that character in the British army, where it has no place in the order of battle. In practically all other modern armies, the regiment is now regarded as an ideal tactical unit. The German Infantry Drill Book very aptly describes the importance of the regiment in the following words:

"The regiment is, owing to its centralized form, the homogeneity of its staff officers, the number of parts comprising it (three or four battalions) and its historical associations, preeminently adapted to executing in a uniform manner any tactical task that may devolve upon it. The regimental system facilitates the tactical coöperation of its component parts and the regulation of the proportion of infantry which it may be desirable to employ in the first line."

To which I may add that the regiment is to the officer what the company is to the soldier, "his home," and the spirit of comradeship developed by association in time of peace proves the strongest tie in holding the regiment as a unit in the fight.

In foreign armies it is usual to maintain a depot battalion in each regiment. In peace time this battalion exists in skeleton form, but when war breaks out it is officered and becomes the recruiting depot for the regiment. This was attempted for the regiments on foreign service in our army in 1899, but the exigencies of the service caused it soon to be given up. It is probable that under more favorable circumstances it would be adopted.

CAVALRY.

In the cavalry the squadron is the basis of tactical organization and in practically all armies but our own it has a war footing of 150 to 175 men.

Marshal Marmont, writing on this subject more than half a century ago, said: "The fighting unit of cavalry is called a squadron, and the rule for determining its strength is to unite the greatest mobility with maintenance of order. A squadron having too great a front would easily be thrown into disorder by the slightest obstacle, and every troop in disorder is half conquered. Experience proves that the best formation, that which most completely unites strength and consistence with great facility of movement, is a squadron of forty-eight files, ninety-six men, divided into subdivisions

of twelve files each. The inconsiderable number of men and horses permits that arrangement in the cavalry which would be impossible in the infantry, that is, the fighting unit is the same as the unit of administration."

Our own cavalry has at different times been organized as here outlined; the last time in the War of the Rebellion when the cavalry regiments were formed of three battalions of two squadrons of two companies each, making six squadrons of 150 men to the regiment. After the war the present organization of three squadrons to the regiment was adopted, probably to conform to the infantry organization. In foreign armies the squadron is both a tactical and administrative unit; it is usually commanded by a major with a captain second in command, and is subdivided into several troops commanded by lieutenants. With us the troop of one hundred men is the administrative unit. The cavalry regiment abroad is made up of from three to seven squadrons, one of which is usually a depot squadron.

ARTILLERY.

The battery of six guns is the basis of the tactical organization of the field artillery.

With the advent of the rapid fire field gun it is probable that the battery will be reduced to four guns. This reduction has already been made in our service by a recent executive order, and is made advisable by the increased difficulties of regulating and controlling the fire of guns which can deliver twelve aimed shots per minute, as compared with the old gun having a capacity of only two or three rounds. Moreover the increased consumption of ammunition will demand additional ammunition wagons and teams, and will add materially to the personnel of the battery.

Two or more batteries working together under one command constitute the battalion of artillery. Our battalion of three batteries corresponds to the British "brigade-division." The battalion organization now existing in our field artillery is purely for purposes of instruction and administration. The regiment of artillery, recently abolished in our service but still retained in many foreign armies, is an administrative unit solely.

By the reorganization act of 1901, machine gun batteries are declared to be part of the field artillery, though no tactical organization for machine guns has yet been adopted. The tactical use of machine guns is at present in an experimental stage. The British have organized their machine guns into sections, which they have attached to the infantry and cavalry brigades, and this is the direction of our experiments at this time.

ENGINEERS.

In the United States Army the engineer troops accompanying the army in the field perform the duty of sappers, miners and pontoniers. In most European armies they are also charged with the duties of signaling, and in some instances they have the additional duty of the management of the railroads within the theatre of operations. Engineer troops are organized into companies, battalions and regiments in the same manner as infantry. The strength of the company varies with the particular character of work it is intended to perform, and usually contains from 250 to 500 men. It is probable that our regular engineer troops will shortly be organized into companies of pioneers and pontoniers, the pioneer company to consist of 165 men, twenty-five of whom shall be mounted, and the company to be equipped with intrenching tools and explosives. The ponton company to consist of 150 men, five noncommissioned officers being mounted. The companies are united into battalions composed of three pioneer and one ponton company. When serving with the cavalry the engineer troops will be mounted

In the United States Army it is usual to supplement the regular force by details from the line of selected individuals, or by transfer of entire organizations. Both of these methods were pursued in the War of the Rebellion, but upon the outbreak of the Spanish War special enlistments of trained mechanics were made and they were organized into a brigade of three regiments, equipped as infantry.

SIGNAL CORPS.

The Signal Corps is charged with the management of the field telegraph and telephone, the military balloons and the service of signaling generally. For service in the field signal troops will be organized into companies of 150 men, who will be mounted when serving with the cavalry. These signal companies with us correspond to telegraph sections of the engineer companies in foreign armies.

MEDICAL CORPS.

In all modern armies there is provided for the army in the field a complete sanitary organization which usually comprises detachments of the Hospital Corps attached to batteries, battalions and regimental field hospitals, including a bearer and ambulance section for collecting the wounded and conveying them from the dressing stations to the field hospitals; an advance medical supply depot which accompanies the first line of supply; the hospital transport, railway trains, hospital ships, etc., by which the sick and wounded are conveyed to hospitals along the line of communication or to the base, and, finally, the base hospitals and convalescent camps.

This completes what might be termed the special organization of the several arms and we have now to consider how these squadrons, battalions and regiments shall be assembled to form an army.

In the organization of an army the main points to be determined are: What shall be the size of the army? What shall be the proportion of the different combatant arms and special troops? How shall they be combined? And finally, what shall be the primary subdivisions of the army?

When we come to consider the proper strength of an army we find a general concensus of opinion among military writers, supported by the practice of nations, that a single army should not exceed 150,000 fighting men. Experience has demonstrated that very large armies have less cohesion and flexibility than smaller ones, and that the rapidly increasing difficulties of command soon tax the ability of the

average leader. Larger armies have many times been formed, but usually under force of circumstances and to meet exceptional conditions. Where the force put in the field exceeds this number it is customary to divide it into two or more separate armies, and, where these separate armies have the same objective, to combine their operations under a general-in-chief. This principle of the division of large combatant forces into several armies has been exemplified in all recent campaigns; was practiced by both the North and the South in the Rebellion, and is now being carried out in the Japanese army in Manchuria.

PROPORTION OF THE DIFFERENT ARMS.

In determining the proportion of the different arms that shall go to make up the army, we find that there is no fixed rule. In a comparison of many field armies of the past century, if the infantry be represented by unity, the cavalry has varied, usually from one-fourth to one-tenth, while the artillery has varied from two to five guns per thousand combatants; and even these limits are often exceeded.

In Johnston's army during the Atlanta campaign there were 144 guns to 53,000 men, or from two to three guns per thousand, while the cavalry was from one-fourth to one-fifth as numerous as the infantry. In Sherman's army at the same time the cavalry was one-seventh as strong as the infantry, and there were about two guns per thousand. At a later period, during the march to the sea, the guns were reduced to one per thousand and the cavalry to one-fifteenth of the infantry.

In the Union army at Gettysburg the cavalry was almost one-fifth and there were from two to three guns per thousand. These proportions were about the same as the Confederate army. The act of Congress of July, 1861, providing for the mobilization of 500,000 volunteers, directed that not more than one company of cavalry or artillery should be raised to every regiment of infantry. Actually there were organized on the Union side during the war 1,700 regiments of infantry, 272 regiments of cavalry and 78 regiments of artillery.

According to Napoleon, the cavalry should be from one-fourth to one-fifth as numerous as infantry, the artillery one-eighth, the engineers one-fortieth and the train one-thirtieth. In the Second German army in 1870, which numbered over 250,000 men, the cavalry was between one-fifth and one sixth, the artillery from one seventh to one-eighth, the engineers about one twenty-second, the train one-thirteenth and the sanitary troops one-twenty-fifth.

Applying these general averages to a particular case, an army of 100,000 men might be composed as follows:

Infantry	65,000
Cavalry	12,000
Artillery (300 guns)	9,000
Engineers	4,500
Sanitary troops	4,000
Signal troops	600
Train	5,000
Total	100,100

The English army in South Africa was composed as follows:

Infantry	62,369
Cavalry	16,431
Artillery (270 guns)	7,930
Engineers	3,100
Train troops	5,750
Total	95,580

PROPORTION OF THE THREE ARMS.

The relative numbers of the infantry, cavalry and artillery will vary with many conditions, principally, however, with the character of the country in which the operations are to be conducted, the composition of the enemy's forces, and the adaptability or otherwise of the people for a particular arm.

In a difficult, mountainous country, having few roads, the cavalry and artillery would find little scope for their operation and would be proportionately diminished. On the other hand, in an open country, against a mounted enemy, a large proportion of cavalry and artillery is needed. The influence of conditions of this character on the composition of an army

was very markedly shown in the war in South Africa. General Kitchener, testifying before the commissioners on the conduct of the war, said: "Except in Natal, and even there to some extent, the infantry were at a great disadvantage against mounted enemies, and for this reason, in the latter part of the war, all operations were carried out on the British side by mounted men."

Lord Roberts, testifying before the same commission, said: "What I think is, that in all future wars we should require a far larger proportion of mounted men than we have ever had hitherto, and that the cavalry must be prepared to fight on foot much more than they have ever done before."

In the Japanese army in Manchuria at the present time the cavalry force is insignificant. This is due to the fact that the Japanese are indifferent horsemen and there are few, if any, horses in Japan fit for cavalry service.

Having determined upon the strength of the army and the proportions of the different arms, the next question to be decided is the manner in which the several arms shall be distributed in forming the higher tactical units of the army. Whether, for instance, fractions of the army shall be made up entirely of cavalry and artillery, and others of infantry only, or whether the cavalry, artillery and infantry shall be distributed uniformly among the main subdivisions according to their strength.

CAVALRY.

Until the latter half of the nineteenth century it was the usual practice to form a large part of the artillery and cavalry into reserves, which were held in rear of the army and under the immediate command of the general commanding. This frequently resulted in withholding just that much cavalry and artillery from the fight, and history contains many instances of lost opportunities due to the impossibility of getting these reserves into action in time to be of any use. These reserves have now practically disappeared. The cavalry has found its proper place in front of the army instead of in the rear, and the artillery is gradually moving up to the line of battle; the artillery reserve gave way to the

corps artillery, which is in effect but a smaller reserve, and this in turn is about to be absorbed into the divisions.

Following the developments of the War of the Rebellion and the Franco-Prussian War, it is now generally recognized that the most advantageous use of cavalry is in screening the movements of our own army and gaining intelligence of the enemy. To do this effectively, the cavalry must operate well in advance of the main body, and its movements will, to a great extent, be regulated by those of the enemy. It must therefore be independent. These considerations lead to but one conclusion: the principal part of the cavalry must be organized into independent bodies under their own leaders, only so much cavalry being assigned to the infantry divisions as is necessary for their immediate security.

In fixing the size or strength of these independent cavalry bodies we are influenced by several considerations. Experience in past wars has demonstrated that very large bodies of cavalry are difficult to handle and supply, and, moreover, they lack the mobility and cohesion of smaller bodies. Marmont, whose ideas are always carefully considered, says: "I place at 6,000 horse the utmost force of cavalry manageable."

During the Napoleonic wars great masses of cavalry were frequently used. In the grand army which invaded Russia, Murat commanded a cavalry reserve of four corps, numbering 40,000 men. This use of cavalry has now practically disappeared, and it is rare indeed to find 10,000 cavalry in one body. During the War of the Rebellion the largest body of cavalry united under one command was 13,000, the cavalry corps of General Wilson in 1865. The present tendency is still further to reduce this strength, and the cavalry is now usually organized into divisions of about 3,600 men. This was the organization of the German cavalry in the Franco-Prussian War and of the British cavalry in South Africa. This is also the organization proposed by our Field Service Regulations, though our cavalry division has a strength of 9,000 men, our brigade corresponding to the European division. It may, therefore, be accepted that the cavalry corps will rarely be organized in future, and that the cavalry will be organized into divisions and placed under the orders of the army commander.

The present accepted rôle of cavalry, that of acting as a screen to the movements of the army, will often take it many miles in front of the main body, and if it is not to be held back by small detachments of the three arms its power of resistance must be increased. It is, therefore, usual to assign to each division of cavalry several batteries of horse artillery. In European armies, infantry in wagons sometimes accompanies the cavalry division.

ARTILLERY.

When we come to consider the proper grouping of the artillery a different course of reasoning prevails. While artillery produces its greatest effect by the concentrated fire of many guns, we read of immense groups of from twenty to thirty batteries in action under one command, as at Gettysburg and at Wörth and Sedan; yet, if the artillery occupied its place in column in large masses of this size, it would often be difficult, or even impossible, to find suitable positions for its employment, and much of the artillery would be kept out of the fight, or would have to be distributed along the front of the battle. It is therefore better to distribute the artillery in groups of not more than eight to ten batteries among the infantry columns, where it marches near the head of the columns ready to come quickly into action, provision being made to form larger groups under a single command when the favorable opportunity arrives. This increased distribution of the artillery is also favored by the great range of the modern field gun, which makes it possible to concentrate the fire of widely separated batteries on a single objective, and by its increased mobility, which enables the batteries to concentrate rapidly when desired.

At an earlier period when the field gun had a comparatively short range and was difficult to move from place to place on the field, it was, perhaps, necessary to keep the artillery massed in reserves, if its fire was ever to be concentrated on a single point.

INFANTRY.

Turning now to the infantry, which, under modern conditions of warfare, is by far the most numerous and most important arm of the service, it is with the proper grouping of this arm that army organization has mainly to do.

The theory of the formation of the modern army is that it shall consist of several fractions or units, equal in size and composition, complete in all parts, and able to act independently at any time. It is by this arrangement that the army is rendered flexible; thus, it may be moved in several columns on parallel roads, and if any column be attacked, it will be able to maintain itself until supported by the others; or, if it be necessary to detach a portion of the army, it will not be necessary to gather together infantry, cavalry and artillery and create new staffs, etc.

This fraction or unit is the "division," sometimes called the "infantry division," and of which Napoleon said, "It should be able to fight unsupported for at least an hour." Modern opinion puts it at about twelve to sixteen thousand infantry, somewhat more than the Emperor was accustomed to give it. Such a force will have a battle front of from two to four miles, and its length in column will be such that it can deploy for action within three or four hours.

In order that the division may act thus independently it is necessary that it be provided with cavalry and artillery and a proper proportion of special troops; also a supply train carrying a reserve of ammunition and food and a complete administrative staff.

To facilitate the exercise of command and to give greater flexibility, the infantry of the division is subdivided into several brigades of two or three regiments each.

The following is the proposed organization of the division in the United States Army:

Three brigades of infantry.
One regiment of cavalry.
Six batteries of field artillery.
Three batteries of horse artillery.
One battalion of engineers.
One company of signal corps.

Four field hospitals.
One ammunition column, composed of three sections of twenty-one wagons each for small-arms ammunition, and two sections of twenty-one wagons each for artillery ammunition stores.
One supply column, composed of three wagon trains of twenty-seven wagons each, and one pack train.

When the army consists of 100,000 men or more, the divisions are assembled into army corps; this on the principle that five or six independent units is as many as one commander can efficiently manage. In an army of 150,000 men there would be ten such units; it is, therefore, better to organize the army into four or five corps, each containing several divisions. There is universal agreement that the army corps should not exceed about 30,000 fighting men. A body of troops of this size would occupy about fifteen miles in column of route, and would require an entire day to deploy for action.

When the army corps is created, it, in many cases, replaces the division as the unit of organization, and the number of cavalry, artillery and special troops with the division is proportionately diminished, the troops withheld from the divisions being united to form the corps cavalry, the corps artillery, the corps administrative troops, etc. This is the case in many European armies where the corps organization is maintained in time of peace. In such cases we find the division usually constituted as follows:

Two brigades of infantry.
One to four squadrons of cavalry.
Four to six batteries of artillery.
One company engineers.
One bearer company.

In either case, however, whether the corps is the unit of organization, having its own corps troops, or whether it is merely an aggregation of divisions, the total strength of the corps remains about the same.

Where the army corps is the unit of organization, if it be necessary to detach a division, a proportion of the corps

troops, cavalry, artillery and administrative troops are attached to it, and it becomes the reinforced infantry division, similar in strength and composition to the division proposed for our army by the Field Service Regulations.

Finally, when several army corps are united under a single chief they constitute an army. One or more cavalry divisions usually form part of such an organization.

SURRA.

Through the courtesy of General Wint and his aide, Lieutenant William L. Karnes, Sixth Cavalry, the JOURNAL has been furnished the following extracts from the exhaustive report on the disease of surra, made by the board composed of General Wint, Lieutenant-Colonel Ramsey D. Potts, Artillery Corps, and Lieutenant Karnes. The board not only made a thorough investigation of the disease in the Philippines, but also visited India, Burma and Java, and it is believed that their report contains more useful information concerning this fatal disease than anything ever before published on the subject. These extracts, which contain the gist of the report, must, therefore, be of interest to every American officer who has served in the Philippines, or expects to serve there. They are published by permission of the Chief of Staff.—EDITOR.

THIS disease has existed in certain sections of India for generations, notably on the northwest frontier and in the Punjab; an outbreak occurred in almost every district in India and Burma within the twenty years preceding 1897. It has been reported from the Persian Gulf, Tonquin, Korea, Egypt, Syria, Algeria, and Zululand, and latterly from Java, Borneo, Madagascar, Mauritius and other points; in fact the disease has appeared almost everywhere in the far East.

Dr. Lingard, in a report dated 1899, stated that there were also strong reasons for believing that animals had succumbed to this disease in Abyssinia, the Zambesi, East Africa, Australia, North America, Brazil and Southern Europe, but the reasons are not given.

It is impossible to assign a date for the first appearance of this disease in the Philippines, but it is believed that it is not of recent origin. It has doubtless existed there for many years unknown, under various names signifying fever, debility and emaciation, its marked characteristics. Careful inquiry during the past eighteen months amongst native veterinarians (so-called) and horse owners at many different points in the Islands, has elicited the fact that a disease

entirely similar to the one which has recently swept off nearly all the native ponies (surra), has existed in the Islands for many years in a varying degree from year to year, but generally epidemic every third or fourth year. It is unquestionably a fact that the disease attacked and carried off many native ponies in certain sections, notably Batangas, South Camarines, and Albay provinces in Luzon, and the island of Panay, before it appeared amongst American horses and mules at all; and it is also believed that it appeared at these and other points some months before animals in Manila were affected.

It is also well known that Dr. Nockolds, veterinarian First Cavalry, recognized and reported the presence of the disease months before. Dr. Nockolds was born in India, and was familiar with the parasite and disease from actual experience. Corroborative evidence on this point was obtained from American teamsters and packers who had entered those provinces with the first American troops and, on discharge, had taken service with the Quartermaster's Department, their service there being practically continuous, antedating the first appearance of surra amongst American animals, or glanders as it was generally called before the parasite was discovered. Whether or not this disease was epidemic in the Islands upon our advent or was imported afterwards, is a material point, and affects very closely the measures to be taken to prevent the spread of the disease or its further introduction, as the case may be. If recently imported, the problem of its extermination is greatly simplified; but the burden of proof is quite adverse to this theory, and it is believed that there are many infected districts throughout the islands which will have to be determined and then avoided, as in India and Burma. There the gravity of the situation and the deadly nature of the disease was at once appreciated, and the fact soon became apparent that they could not cure it. Hence, every effort was made to stamp it out by measures of prevention rather than cure. Exhaustive study and investigation showed that the disease was epidemic in certain districts and localities; these were noted and indicated by shaded areas on maps which were issued for the information

and guidance of all concerned. No military animals are allowed or kept within these districts, and grass is never cut therein for military use. The grazing of animals on the road or in camp is absolutely prohibited, except in places known to be uncontaminated, and pack animals which are not under individual control are provided with a muzzle, a practice which could be introduced in the Philippines with great benefit. It was a noticeable fact that surra many times appeared amongst the ponies of native grass cutters and attendants, who do not observe any precautions, without a case amongst military animals. In regard to water, great precautions have been taken to avoid danger from this source, even to digging wells on routes through infected districts, which native stock are never allowed to use, and to boiling the water under specially unfavorable conditions. Contact with native stock is avoided as far as possible. Even at this late date, when surra has not appeared among military animals for many years, mounted organizations marching to take part in the recent coronation ceremonies at Delhi, were required to make considerable detours to avoid passing through any of the infected areas.

In districts where the disease is epidemic, it will be impossible to prevent sporadic cases, but the spread of disease to government stock can be prevented by prompt precautions, and to this end all energies should be bent. As it is believed that the disease is endemic in the Philippines, every effort should be made to find out infected areas and similar precautions taken in regard to them. It will be practically impossible to maintain a mounted command in such a district without frequent recurrences of the disease.

It has been found impossible to learn whether the natives hold to any theory in regard to the origin of the disease here, but the low grounds were evidently regarded as dangerous during the rainy season, for it was the custom to drive all stock to high ground after the crop was planted, and, as far as possible, before the heavy rains began; but on account of the insurrection, and later the ladrones, this has been impossible for the last five years, and stock has been kept in the

lowlands, feeding and watering in the old rice paddies, overflowed and swampy lands, with the result that in many districts native ponies have almost entirely disappeared. When driven to the hills a few animals would die, evidently infected in the lowlands, but cases did not originate, and the disease gradually died out, mountain streams and upland grass in the nature of things not harboring the parasite.

Native veterinarians do not regard this disease as necessarily fatal; in fact, they claim to be able to cure it in many cases, but it is a fact within the knowledge of the board that they have always failed to do so in a determined case. The knowledge of this disease which is generally claimed by them is not consistent with the theory of its recent introduction into the Islands. They seem to be able to relieve an animal temporarily, and in several cases have returned it as cured: but a relapse invariably occurred in a few days, and the disease followed the usual course. So far as is known, no permanent benefit has ever been derived from treatment by native veterinarians. Being ignorant of the true nature of the disease, and having no means of determining it absolutely, it is evident that if any cures have been effected, the disease has not been surra. They are very secretive as to their treatment, and will not undertake to cure any animal unless it is turned over to them and taken away. What means of drugs they employ, if any, is so far unknown

As this disease was unknown in the United States, and as our American text-books touched on it very lightly, if at all, our veterinarians and army officers generally on arrival in the Philippines, were wholly ignorant of it, and excusably so. It is not, therefore, surprising that it was not recognized when it first appeared, and that many American animals died before anything definite was learned. It is surprising, however, that it should have been so generally diagnosed as glanders; for such a gross error as this there seems to be no reasonable excuse on the part of veterinarians; but it is undoubtedly true that a great majority of the earlier cases were falsely diagnosed, and animals destroyed without knowledge of the real disease being increased one particle. As surra is invariably fatal, this error in judgment was not expensive,

as far as animals actually suffering from it were concerned; but the dread which glanders inspires in the minds of most veterinarians and officers led to further false diagnoses in the cases of animals suffering from lymphangitis, influenza, catarrhal troubles, etc., all tractable diseases; but the animals were ruthlessly destroyed: ignorance and fear of responsibility cost the government many animals. It is also true that some veterinarians did not make this mistake, notably Dr. Faust, but regarded surra as an entirely new disease, and endeavored in various ways to treat it specifically, but without success. As is usual in such cases, it has been announced from time to time that a given treatment has proved successful; every treatment, however improbable or absurd on its face, has been given a fair trial at the quartermaster's corrals in Manila without success.

The first mortality amongst our quartermaster's animals that attracted and received special attention, occurred in and around Manila during and following the rainy season of 1901; native animals were also dying in this part of the island of Luzon in great numbers, and had been for many months previously. The fact that the disease was probably due to the presence of a specific parasite in the blood was made known in October, 1901, but the parasite, though determined, was not recognized, and was generally considered to be entirely new.

Dr. J. G. Slee, assistant veterinarian, board of health; Dr. J. J. Kinyoun, surgeon U. S. marine hospital service, and Captain Allen M. Smith, assistant surgeon, U. S. A., were all identified with the discovery of the parasite, but it is difficult to assign the credit to any particular one. It is understood that the identification of the parasite was the result of a pure accident. The army medical officer in turning over the pages of a work on bacteriology, wherein the disease was described, found the parasite illustrated. The parasite having been discovered and identified, the attention of all turned to the treatment in the hope of finding some means of destroying it. It may be said in brief, that most of the germicides have been employed subcutaneously, intravenously and through the mouth without success Sub-

cutaneous treatment was almost immediately abandoned, because the powerful drugs employed almost invariably caused serious local ulcers.

Whatever doubt may exist in the minds of some as to the origin of surra, it has been universally recognized as a wet weather disease; it disappears almost entirely in the dry season here and elsewhere, only sporadic cases occurring, undoubtedly transmitted from case to case by inoculation through the agency of flies or other biting insects. Such insects are doubtless responsible for many cases, more than was at first supposed. It is recognized that they are much more numerous in wet weather, but they are never wanting, even in the driest season, in sufficient numbers to perpetuate the disease in any stable or locality, once it appeared there; whereas it disappears entirely in many stables and localities during the dry season, which fact clearly points to some other source of infection.

The fly theory is founded upon successful experiments and can be accepted as proved. It accounts for the spread of the disease after once introduced, but as it everywhere disappears almost entirely during the dry season, it is difficult to understand how it is kept alive from season to season, especially as it has been found impossible to detect parasites in flies that have been kept from surra cases twenty-four hours or over. In this connection it has been suggested that wild animals may have the disease in a chronic form, like cattle, and not dying, may perpetuate it from season to season. The idea is plausible, but information as to the existence of surra in wild animals is almost entirely wanting, and admitting that they carry the parasite, will scarcely account for the serious outbreaks that have occurred here and elsewhere, as contact is essential to the spread of disease by inoculation. With cattle, the case is quite different; their blood may swarm with parasites, but they rarely die, and may harbor them for months or years, and thus bridge over the interval from one wet season to the next, or much longer intervals. Contact with other domestic animals is also assured, and fleas or biting insects may do the rest. This is a most important fact, and should receive special attention in

the Philippines. The presence of parasites in the blood of the cattle can be readily detected by microscopical examination, and infected cattle are a great source of danger to animals in which the disease is fatal.

Surra is unquestionably due to the presence of the *trypanosoma evansi* in the blood, but it is admitted that there is some difference of opinion as to how the parasite gets there, and where it comes from. It must have an origin, and there is overwhelming proof that its recurrence is always during or following a wet season, and in localities subjected to overflow or containing marsh lands; and, what is equally important, that it disappears when these conditions no longer exist, either naturally, as in the dry season, or from improved drainage and proper precautions in regard to food and water. It is therefore impossible to ignore such important facts or to avoid the conviction that conditions under which the disease invariably recurs are responsible for its existence. The parasite cannot exist except in wet or damp places, and it is quite certain that when in the dry season the surface water disappears by evaporation, many of them die, and others in some form, follow the moisture below the surface and disappear from grass entirely. They are thus dormant until a recurrence of the moist conditions (rainy season) brings them to the surface; and both water and grass growing in it may convey the disease to any susceptible animal consuming them.

That the disease is spread by inoculation through the agency of flies and biting insects, and probably fleas and lice from rats which are frequently found infected, is no longer disputed. In fact, this agency is credited to-day with many more cases than formerly. Diseased blood is carried mechanically on the proboscis or feet and legs of flies, and is usually introduced into an animal through an abrasion or open wound of some kind, but it is extremely probable that the boring apparatus of the fly, as it punctures the skin, carries infection with it. Flies congregate in great numbers on animals suffering from surra, and apparently suck up blood faster than they can consume it, and an animal of light color

will appear covered with small spots of blood and flies standing in them; their feet and legs thus become covered with diseased blood, and, if they alight upon the abraded surface of a well animal before the blood has had time to coagulate and destroy the parasite, it will undoubtedly pass into the blood of the animal, and surra will result in a few days. To avoid infection from this source it is absolutely necessary to protect animals from flies. The sick being usually fewer in number, it will be simpler to prevent flies from biting them, and this will usually be sufficient when only a few cases exist, provided prompt measures are taken to isolate all suspects; otherwise protection should be provided for all.

Cleanliness is a great measure of precaution, and should be rigidly enforced; the stables and grounds in the vicinity should be thoroughly drained, and no stagnant water should be accessible to stock. It is during the latent period that danger is greatest, because unrecognized, and frequent tests as to temperature and condition of blood should be made, that animals in that stage of the disease may not be left in contact with the well; determined cases should be destroyed at once.

Rats are quite susceptible to the disease, and when it is around generally contract it. Animals inoculated with the blood of such have contracted the disease in a virulent form and died in from two to seven days, with frequently a long period of incubation. This fact led to experiments with excreta of rats, in whose blood the parasite had been determined, as to whether if mixed with grain it would produce the disease. It has also been claimed that the disease has been produced by rat fleas. As sources of infection, the above seem rather remote, but accepting Dr. Lingard's experiments as conclusive of the fact, it becomes necessary to protect all forage from the ravages of rats, and, primarily, the destruction of the rats themselves would remove all danger.

Working upon the theory that the disease was communicated by water and grass, the government of India has succeeded in exterminating the disease entirely from India, Burma and the Straits Settlements. Green forage is seldom

fed to animals, and never unless it is grown upon thoroughly drained land and under military supervision. Everywhere great piles of dried grass or hay were found stacked, as the generally expressed opinion was that the disappearance of surra was mainly due to its use. Government farms exist in various parts of the country, and mounted organizations marching from point to point seldom rely upon grass cut on the road. It may be stated that finally Lingard, Evans and other experts hold to the above theory, and in view of the result obtained there and our unqualified success in the Philippines, we could not do better than accept it and fight the disease on similar lines. The opinion, even of experts, unbacked by results, would prove very little. We must have results following the application of any theory to make it tenable. As stated, the theory has generally prevailed in India and Burma that water and grass are the original sources of infection, flies being regarded as spreaders, but not originators of the disease, and efforts based entirely upon this theory have resulted in the extermination of the disease so far as military animals are concerned, and cases are very rare amongst private stock.

In a new country with a new disease, it is perhaps natural that there should be much diversity of opinion, both as to its origin and its spread, but it is to be regretted that very marked differences of opinion exist here. We cannot afford to reject the experiences of our neighbors, extending over many years and resulting in the practical extermination of the disease, and accept and act on conclusions founded upon finely drawn theories, incomplete data and experience. It is useless to combat the disease on the theory that it is originally contracted through eating swampland grass or drinking impure, stagnant water, and ignore the great probability, in fact, absolute certainty, of inoculation by biting insects. The converse of the proposition is equally true. All possible means of infection have got to be taken into consideration, and a uniform and comprehensive system of fighting this disease adopted by both civil and military departments involving both public and private stock, or we shall have it with us always. Differences of latitude and altitude have

been found to exert very little influence upon the contraction of the disease, if the topographical and climatic features are favorable, and none at all upon determined cases so far as the result was concerned. But cases have not been known to originate at an elevation of 7,500 feet and higher, yet even this elevation has no effect upon determined cases, but does influence the progress of the disease, in that parasites are fewer in numbers and paroxysmal periods more continuous. This important fact was communicated by Dr. Lingard, founded upon his most recent investigations.

Surra has been defined as a specific and continuous infectious, febrile disease occurring in solipeds (solid hoofed animals) and camels, and capable of being transmitted by inoculation to other animals. It is due to the presence of a specific flagellate parasite in the blood. The fever is caused by irritation due to the presence of these organisms. The fever is of an intermittent, remittent and sometimes relapsing type, and continuous for varying periods from a few days to months, depending upon the animal attacked, its physical condition at the time, and the treatment it receives from the earliest indications. Animals which are worked after fever sets in, fail very rapidly and pass almost immediately to the final stages of the disease, many of the intermediate symptoms being entirely absent. Surra is found especially in horses, asses and mules, but is not confined to these species. Outbreaks have occurred among camels and elephants in India; cats and dogs are also commonly affected, the latter in the Philippines contracting the disease by licking the blood of animals that have been shot. It has also been transmitted by inoculation to cattle, buffaloes, sheep, goats, rabbits, guinea pigs, rats and monkeys. In camels, the disease generally assumes a very chronic type and lasts for months and even years. It is a fact that a camel which survives three years very frequently recovers.

The blood of cattle may swarm with it without apparent harm, and they do not die. The parasite was generally found in the blood of carabaos in Southern Luzon at a time when they were dying in great numbers, supposedly of rhinderpest. In no case was the parasite present in great

numbers, and it is not believed that it is always fatal: but that they do die of it, has, it is believed, been fully proved in Manila and elsewhere. Sex plays no part in regard to susceptibility, as both horses and mares are affected; age very little, and breed none at all, except that in India it has been found that Australian animals are much more subject to the disease than Asiatics. This fact deserves great consideration in the Philippines, in view of the considerable number of such animals now there and annually imported from Australia, and the fact that the period of incubation, under certain circumstances, greatly exceeds the duration of a voyage from Australia. Highly bred and high strung animals yield more rapidly to the disease than common stock and those with a phlegmatic temperament.

Our experiences in the Philippines show that horses and mules are alike susceptible, but it is probable that color has nothing to do with it further than regards its attraction for flies. Observation has shown that a white animal amongst a lot of dark colored ones infected, will receive much the greater share of attention. The limits of infectivity of surra are not yet determined, hence all mammals must, for the present, be regarded as possible carriers of the disease until negative experiments prove them to be refractory. There is no such thing as immunity by becoming acclimated or otherwise. G. H. Evans states most emphatically "that the popular idea regarding immunity of the indigenous ponies in Burma is a fallacy, as they all die equally with other breeds, as also did the Panthe mules which are bred .. the northern and Chinese Shan States; so much so is this the case that hardly a mule or pony escapes in the upper Irrawaddi and other districts; so that all hope in the direction of naturally acquired immunity in breeds is lost." Experience in the Philippines fully corroborates the above opinion. Native stock is even more susceptible than American animals, owing doubtless to impaired vitality due to insufficient and no nutritious foods and hard work added to general neglect.

Dr. Lingard informed the board that the parasite had not yet been found upon grass cut from swampy and overflowed lands, but had been found in the stagnant water re-

maining after a high water period. As far as known the parasite has not been determined in either, in the Philippines, but investigations in this direction have been very limited. Both water and grass may, and probably do, harbor the parasite in its immature form which, as has been stated, cannot be detected by microscope. Impure water is therefore a more dangerous source of infection than grass; both will have to be avoided if a recurrence of the disease is to be prevented.

The symptoms are very numerous, but very marked, and with experience we should be able to diagnose the disease by the symptoms alone. It is a fact, however, that the two absolutely certain ways of diagnosing the disease are the determination of the parasite in the blood by means of the microscope, and the reproduction of the disease in other susceptible animals by inoculation; in the absence of a microscope the latter plan should be resorted to. The symptoms vary with a great many circumstances; first, as to method of contraction, whether naturally or by inoculation. When acquired in the ordinary way the onset of surra is that common to all low forms. Lingard gives the most complete summary which has yet been published, and, as it cannot be well improved on, it is in general followed, in so far as it is applicable to this disease as it has developed here. For complete analysis, see Lingard's own report, 1893, or as reproduced in "emergency report on surra."

The first stage of the disease is not usually marked by symptoms of a serious character. The skin feels hot; there is more or less fever; the appetite may be capricious, and the animal appears dull, and stumbles during action; but for several days there is nothing to indicate serious illness.

A most difficult point to clear up, and one which up to the present time has not been recorded, is the latent period of surra in cases in which it is contracted naturally; that is, the time which elapses between the introduction of the cause into the system and the first appearance of the parasite in the blood of the general circulation. This difficulty can be more readily understood when it is recognized that the forage or water or both are, in all probability, the source of infection, that it is generally impossible to fix the inferior limit of time, and that when the symptoms of the disease become apparent the animal may be in an entirely different part of the country. This matter of incubation period is of great importance with reference to the time that suspects should be isolated, especially animals that have been in contact with the disease.

A symptom which usually appears early in the disease, and is of great importance in that it may be the first indication of indisposition, is the appearance of a general or localized urticarial eruption resembling nettle-rash or hives. These may be the only symptoms noticeable until the parasite is determined. The blood will appear normal, and under the ordinary treatment for fever the animal frequently improves in health and spirits. This condition lasts for only a few days, and with the first appearances of the parasite the animal is again dull and dejected in appearance, and well marked symptoms appear. If the blood be examined microscopically, a few small but rapidly moving organisms will readily be seen, giving to the blood as they pass among the corpuscles a peculiar vibrating movement, which once observed will not easily be forgotten. At this second stage of the disease the skin is very hot, with marked rise in temperature, 101° to 104° and over, 56 to 64 beats per minute; the visible mucous membranes may appear clean, but the conjunctival membranes, especially those covering the *membrana nictitans* (third eye-lid), usually show dark red or claret-colored patches, of varying sizes in different animals. This symptom is especially characteristic of surra, though found in other animal diseases. There is more or less thirst, and possibly a slight loss of appetite, or rather discrimination as to food consumed; but this symptom is not common in the Philippines, an appetite which may be called "ravenous" existing from almost the beginning of the disease to the end, even during the high fever periods; a quite unusual condition, but peculiar to surra.

There are slight catarrhal symptoms present, including lachrymation (very common), and a little mucous discharge from the nostrils. At this period of the disease, in a consid-

erable number of cases, the submaxillary glands will be found swollen and sensitive to touch, but not closely resembling the same symptom in glanders. It is the swelling of the glands and the mucous discharge from the nose that has led to the diagnosis "glanders." While this disease closely resembles malaria in the human subject, Dr. Lingard remarks that one symptom is markedly absent—any signs of chilliness. This is equally true of cases here. At an early stage of the disease it will be noted that there is some swelling and edema of the extremities, generally between the fetlock and the hock, with a tendency to involve the entire leg, which pits when pressed with the finger, but does not appear especially sensitive; also in males some swelling of the sheath. There is one symptom which can be said to be universally present from the determination of the parasite to the end, viz.: the rapidity with which all animals lose flesh, especially about the loins. From first to last there is progressive anemia, with more or less ulceration externally from this cause. Dr. Lingard says that anemic ulcers are not frequent in cases in India, but in the Philippines they generally appear at some stage of the disease.

If the blood be examined microscopically daily, it will be seen that the parasites gradually increase in number until they are literally swarming, the period varying from one to five or six days, in which condition they may remain one or more days, when they gradually or suddenly disappear entirely. With the disappearance of the parasite, the temperature lessens until normal, or even subnormal, is reached. If the parasites disappear suddenly, the temperature drops in the same way from 104° or 105° at night to nearly normal the next morning. It will thus be seen that the disease is characterized by periods of paroxysm, when parasites are always present, accompanied by fever in proportion to the number and periods of apyrexia or intermission, in which there is neither fever nor parasites, also of varying length. It may be stated as a law, that the amount of fever varies directly with the number of parasites present. During fever the temperature rarely falls to 102° Fahrenheit, but is generally 103° or over. In but a single instance within the knowledge

of the board have parasites been found in the blood with a subnormal temperature; this was the case of a mule at Camp Vicars, in the pink of condition as far as external symptoms went, but showing a very few parasites in the blood in the morning examination for four or five days, with temperature of 98° or very slightly over, the evening temperature always being four to four and one-half degrees higher. The case bears out Dr. Lingard's explanation in regard to cases in the hill country of India, Camp Vicars being at about 3,000 feet elevation and having a cool climate.

During the intermission periods an animal frequently improves in appearance, and external symptoms are more or less modified; and, but for loss of flesh and edema of the extremities, there is little to show that it is seriously affected. With each recurrence of fever and parasites, all symptoms grow worse and worse: the animal becomes more and more dull and dejected, until its nose is almost on the ground, and it makes no effort to remove tormenting flies which swarm on it; in fact, muscular power over the skin seems lost. The visible mucous membranes become yellow, and dark spots appear on the conjunctival membranes; the action of the heart is irritable and at times irregular; the breathing is quickened and irregular, being more abdominal than thoracic in character; and in noting an animal at this stage, it will be seen that it makes seven or eight short respirations, which are followed by a more prolonged or sonorous one. The swelling and edema increase, and serum sacks under the belly, often of very large size, are formed, extending from the sheath to the forelegs; the swelling of the sheath is greatly increased; it is enormous in size and nearly trailing on the ground; the penis is much swollen, and there is a constant tendency to erection, and what is called "horsing" in mares. The periods of alternating paroxysm and intermission may go on for some time; the progress of the disease is variable and greatly depends upon the condition of the animal attacked, the weak ones failing very rapidly; but each return of fever increases the severity of the symptoms. During the progress of the disease the wasting away is con-

tinuous, until the animal is literally nothing but skin and bones.

In the Philippines, a more or less tendency to constipation has been noted in the early stages of the disease. Diarrhœa is not common at any stage, but is extremely offensive when it does occur. Towards the termination of every case the animal shows great disinclination to move; there is a manifest loss of power over the hind quarters, which reel from side to side if the animal is forced to move, accompanied by a dragging of the hind feet, somewhat resembling paralysis. There is also frequently present paralysis of the *sphincter ani*, and a dilated condition of the anus. Numerous post-mortem examinations show that up to the end of the disease animals seem to digest their food very well, but there is also a partial paralysis of the lower bowel and rectum for some ten or twelve inches, as they are unable to eject their excreta; it gets stalled at a point eight or ten inches from the anus, and muscular efforts to dislodge it cause secretion of considerable mucous.

Dr. Lingard says that the above symptoms, taken together, point to some interference with the normal functions of the spinal cord in the lower dorsal and lumbar regions, and are probably due to pressure caused by an exudation within the spinal membranes. However caused, they were amongst the most pronounced symptoms. In many cases, shortly before death, the action of the heart becomes so violent, that it shakes the body and can be heard at some little distance. Death occurs in several ways: The animal may drop dead from a standing position, or may drop and die after a short struggle; or, being down from weakness, death may occur after a series of struggles, in which the animal apparently suffers intense pain, and may sweat profusely.

It must not be expected that all animals will exhibit the symptoms given above or run closely approximately thereto. As near as can be determined, they represent a normal case, departure therefrom being due to the varying conditions of individual cases. Some of the visible symptoms will certainly be present, and the microscope will settle the matter beyond dispute. Fever will always be present, and surra

having appeared, a temperature of 101° or over without assignable cause, must be regarded as suspicious. As a safeguard, the temperature of all animals should be taken daily, preferably towards night, and all suspects should be promptly isolated. As has been stated, the onset of the disease is so insidious that the animals may show no pronounced symptoms until the appearance of the parasite, and much time may be lost, during which the contagion may be communicated to other animals.

In the case of animals contracting surra by inoculation, an opportunity is afforded for studying the progress of the disease, and data are necessarily more exact, but the conditions vary so much in different animals and depend so much upon the way in which the disease was communicated, that no general law can be enunciated. The results of an elaborate series of investigations in which surra has been reproduced are given in "emergency report" previously referred to; no such exhaustive study has yet been made by the military establishment in the Philippines, but there is no reason to believe that the disease so induced would take any different course here.

Blood, serum and body fluids have been used for inoculation intravenously, subcutaneously and through the mouth, and by smearing an abraded surface, all taken from surra cases before and after death, and the disease has been reproduced in every case. If taken anti-mortem and during a paroxysm the number of parasites in the blood is important, as, when very numerous, the disease is reproduced in much less time than if taken during an intermission or apyrixial period, when parasites cannot be demonstrated in the blood. The disease has also been introduced by infected blood administered in drinking water, but this method has frequently failed, and it is not believed that surra will result, unless the animal has a cut or abrasion of some kind through which the parasite comes in direct contact with the blood. This is doubtless true with regard to water and grass as original sources of infection, and will account for some animals contracting the disease and more escaping, where all are watered and fed in the same way.

It may be as well to state here, that blood from a determined surra case, even though the most searching microscopical examination does not reveal a single parasite, will always reproduce the disease, a fact which seems conclusive as to the existence of the parasite of surra in some other than the matured form in which it is always seen; in fact, it is now generally believed that it does exist in an immature form, not visible under the microscope, and hence indeterminate and so far intractable. If taken post-mortem, the number of hours after death, the quantity of blood or fluid introduced, and the method of inoculation, all influence the result.

A single illustration of the result of subcutaneous inoculation of a small quantity of surra blood as given by Dr. Lingard will suffice. Twenty-four hours after inoculation a small and somewhat raised swelling is noticed at seat of inoculation; after forty-eight hours, the tumor has increased in size, with edema and tension of parts involved, and is generally tender on manipulation. The fourth day the tumor may measure three inches or four inches by two inches or three inches, one inch to one and one-half inches high, and is quite movable. These symptoms will vary under the conditions noted above, until from the fourth to the thirteenth day the tumor will be found to have lost a certain amount of its tension and tenderness; after this, the swelling and edema will gradually grow less, and from the tenth to the fourteenth day there will be nothing left but a slight thickening of the skin over the point of injection; but at the moment when tenderness and tension suddenly decrease, a symptom of importance clinically takes place, viz.: at that moment the organism of surra enters the blood of the general circulation. Up to this time the disease has been completely localized and the ordinary operation for tumor will remove it. Fever may supervene on the day of inoculation, or not for several days; the indications may be very slight, or there may be a considerable rise lasting two to six days: but at the time the parasites enter the blood there is always a decided rise, 103° and over, accompanied by all the symptoms noted in cases contracted naturally, and from this point the progress of the disease is practically the same.

In summing up, Dr. Lingard says:

"The fever of surra varies to such an extent in different cases, that it is impossible to group them under one system of description as regards the stages of the disease. The insidious nature of the onset in naturally contracted cases devoid of symptoms during a considerable period, renders it impossible to recognize it, until such time as the organism enters the blood. Consequently little is known concerning the latent period and stage of invasion, and in such cases, when untreated, the form is of a continued type, with more or less intermissions at long, but irregular intervals, ten or more days. If, in untreated cases, the paroxysmal periods were regular the life of the parasite would be known, as the termination of this period announces the destruction or disappearance of the matured form; but the number of such paroxysms an animal will survive and their duration, vary with each case.".

Young horses in good condition may pass through nine or ten paroxysms, and cases have been known to linger along for as much as a year, while in some cases, notably old and worn-out animals and those that have been overworked or subjected to unusual exposure, the course is very rapid, and may be one or two weeks or less. In India, average duration for different outbreaks is variously given as forty-three days, not less than two months, one month or more, and fifty-two days. In the first volume of Lingard's report a précis of numerous cases acquired naturally and artificially produced is given, containing much useful information and showing the variations in individual cases.

TREATMENT.

It is obviously imperative that the existence of the disease be detected at the earliest moment possible, and the animal put under treatment at once, the rapid destruction of the parasite being the point of greatest importance. Most animals fail so rapidly after the appearance of the parasite that a single day will make all the difference in the world, and unless the animal is in good condition as to flesh and

strength, it is perfectly useless to attempt treatment. On account of the deadly nature of the disease, treatment should only be attempted under the most favorable conditions; that is, when the animal can be completely isolated and protected from the weather, flies, etc., and fed all it will eat; under the usual conditions of service animals should be destroyed at once. In brief, then, treatment has so far failed. Lingard has experimented with the following drugs, with the results given:

Mercuris chloride has been employed subcutaneously, and also by direct injection into the circulation, with negative results.

Iodine and iodide of potassium by intertracheal injection, and also by subcutaneous inoculation, followed by negative results.

Iodoform by subcutaneous injection, and also by direct injection into the jugular, produced no good results.

Oleum terebinthinae by subcutaneous injection, and by injection into the jugular, was followed by negative results.

Potassi bichromas, direct injection into the circulation and by gastric ingestion, produced no marked effect on the infusorian.

Mixed cinchona allaloids and arsenic did not destroy the infusorian.

Carbolic acid and iodine, 76 drams of the former and 34½ drams of the latter in six days, produced no apparent effect on the infusorian.

Quinine in large doses had no effect on the infusorian.

Iodic hydrarg, a very powerful antiseptic, had no effect.

Santonin had no effect.

Potass had no effect.

In the Philippines pretty much all the foregoing have been used with negative results. Also powerful salt solution, formaldehyde gas, sulphur, etc. Bichloride of mercury injected either in the muscular tissues or intravenously arrests the disease in every case and destroys the parasite; the animal almost invariably improves in appearance, and for a few days is apparently better; but the use of this drug cannot be persisted in, as symptoms of mercurial poisoning appear, and it destroys the red blood cells about as fast as the parasites reappear, and the animal fails very rapidly. The only drug that so far promises any return is arsenic, and three cures in India were effected by the administration of arsenic and iodide of arsenic and mercury. The only case believed to have been cured in the Philippines was effected by the administration of Fowler's solution of arsenic intravenously, and tonics of iron, quinine, etc.

As early as January, 1902, the board investigating surra in the Philippines reported that arsenic administered intravenously destroyed parasites in nearly every case, and that animals so treated were doing well. Treatment not conclusive as to cure. More extended inquiries showed later that the improvement was only temporary, and that animals invariably died after a period, depending upon their ability to stand the arsenic treatment, with the single exception of the mare mule noted above.

The following treatment is the only one known which gives the least promise of a successful issue: Arsenic in the form of Fowler's solution, the maximum dose depending upon weight and condition of animal treated. Commence with five grains, given twice daily for forty-eight hours, the quantity being increased by half a grain after every four doses have been administered, until seven grains are reached. The latter amount should be continued twice daily for seven days for animals under 800 pounds in weight; for animals of 1000 pounds or over, the dose may be increased by the addition of half a grain up to nine or even ten grains twice daily for the same period. The dose should then be gradually reduced by half a grain to one grain, according to condition of patient until a five-grain dose is reached. If the condition of the animal permits, repeat the treatment after a period of two days, increasing and then decreasing the dose of arsenic as above described. But the fact must never be lost sight of, that if the arsenic be administered to an animal for a prolonged period, symptoms of gastric irritation will sooner or later appear, and there is always danger of cases suddenly developing symptoms of chronic arsenical poisoning. These are usually effected by partial loss of muscular power with

great unsteadiness and nervous tremors, and usually prove fatal in forty-eight hours, even though the use of the drug is discontinued at once. Acute nephritis is a common complication of surra, but it must not contra-indicate the administration of arsenic, although the maximum doses cannot be maintained, otherwise the animal will relapse and die. Daily microscopical examinations of the blood should be made, and the number of organisms recorded on a chart for ready reference, as "none," "few," "numerous," "swarming," together with the temperature, pulse and respirations of the patient, which should be taken three times daily, say at 8 A. M., 1 and 5 P. M.

Most animals will take the drug in water without trouble; excessive thirst is usual and if the water is withheld for some time they will drink it freely. If refused, it can be mixed with the feed, and in very obstinate cases, administered in the form of a bolus or draught. The compound tincture of lavender is sometimes added to the solution to make it more palatable.

After the parasites have disappeared from the blood for several days, the animal should be gently exercised, short distances at first and gradually increased to one mile, provided no unfavorable symptoms recur. If the temperature rises, all exercise must be stopped, and should never be allowed as long as parasites are demonstrated in the blood. If the case progresses favorably, the edema of the lower extremities, sheath and under surface of the abdomen should disappear gradually under the influence of the arsenic and exercise; this may be accelerated by daily massage of the body and limbs. The above treatment advocated by Dr. Lingard is the only one known that offers any prospects of success, even under the most favorable circumstances, and only in cases of animals able to stand the prolonged treatment with arsenic. It took months to cure the few cases known to have survived.

After twenty years' experience with the disease in India and Burma, notwithstanding the vast amount of investigation, study and experiment devoted to it, no treatment worthy of the name of cure has yet been discovered; the same

want of success has attended, so far, all efforts in the Philippines.

It has been suggested that the administration of arsenic to all animals as a measure of precaution at the commencement of the rainy season, especially to those likely to be exposed to infection, is worthy of attention and trial. This idea is founded upon common sense, as arsenic certainly destroys the matured form of the parasite, and there seems good reason to believe that an animal would be more refractory by its use as a prophylactic measure.

Post-mortem examination does not show any structural disease. Structural changes are not found in the kidneys, liver, spleen, heart, lungs or mucous membranes of the stomach and intestines. According to Dr. Lingard there is no specific lesion present. Organs and tissues are in the anemic condition, and abscesses are usually found in the stomach and abdominal cavity. Evans is of the opinion that in all cases of death from chronic surra, or in animals that have been destroyed after the disease has lasted some time, ulceration of the stomach, more or less extensive, will be seen post-mortem. The pericardial sack and pleural cavity are generally full of serus fluid, but inflammation is not present; ante-mortem clots are found in the heart.

LETHALITY OF SURRA.

All authorities are now afraid that surra is invariably fatal. Untreated cases are hopeless and all treatments have, so far, failed. But three cases are known to have recovered under treatment in India, and possibly one in the Philippines. It is a peculiarity of this disease, that a cure does not result from the destruction of the natural form of the parasite in the blood, and it invariably reappears after a variable interval, with fever and all concomitant symptoms. This fact points to the existence of the parasite in some other than the matured form shown by microscopic examination, which is not destroyed by the germicide, and remains in the system after the disappearance of the latter. The matured form can be destroyed in several ways, but beyond this point absolutely no progress has been made in the treat-

ment of the disease. Of the immature or "resting" form, so called by Dr. Lingard, but very little is known, and, so far, it has been found impossible to combat or destroy it; until this is reached it is obvious that the disease is necessarily fatal. The reason of the disappearance of the parasite from the circulation even in untreated cases at irregular intervals, has been earnestly sought for; during the intermission periods the most searching examinations of the blood reveals nothing until the matured form reappears. The parasite multiplies by division, sometimes longitudinally and sometimes radially during the paroxysmal periods, until the blood is literally swarming with them, and then they suddenly disappear. From the similarity of the disease to malaria, the theory that the parasite itself secretes a toxin which finally destroys it has been accepted by many.

Dr. Lingard stated to the board, that it was his belief, formed on his most recent investigations, that the parasite secretes a toxin during the paroxysms which increases with the number of parasites until it ultimately destroys them, and then passes off through the urine. Discoloration of the urine during the intermissions has been noticeable, and dead parasites have been determined during the time the toxin is present in the blood and passing off. During this time the resting form of the parasite retires to the bone marrow, spleen, or organs, and remains until the toxin has disappeared; it then returns to the circulation, becomes active, matures very rapidly and commences at once to multiply. Dr. Lingard has noted subdivision going on within a few hours after its reappearance. Hence, recovery unaided is impossible, and by no treatment yet devised have investigators been able to reach the resting form.

PREVENTION.

As we cannot cure surra, our greatest efforts should be devoted to prevention, both as to contraction and spread of the disease. Until experience has determined the districts and localities through the islands in which the disease is endemic, this will be most difficult. Hence the absolute necessity for acquiring this information as soon as possible.

So far as such districts are concerned, there seems to be no remedy save the one applied in India and Burma, and that is to avoid them entirely. We must also adopt their rule in regard to green forage, that is, feed none but that grown under competent supervision, or known not to be infected. If, as is believed, green forage under a stated condition is an original source of infection, all other measures of prevention are powerless to stamp out the disease, as long as we continue to feed it. It seems to be the part of wisdom to discontinue feeding uncured grass entirely, until we have acquired more complete knowledge as to which is harmful and which is not. As a matter of fact, the greater part of the grass supplied under contract is of such inferior quality and contains so little nutriment, that the small quantity now fed could be discontinued without detriment to the animals.

The same precautions must be taken in regard to water, and animals must not be given or allowed to drink impure or stagnant water; this is even a greater source of danger than the grass, and carelessness in regard to it will make all other precautions useless. All stagnant water in the vicinity of stables, corrals, etc., should be drained away. This simple precaution in India has, in several recorded cases, stopped the disease by removing the cause. Animals should not be grazed in localities where they can get at stagnant water, and on the march, or in the field, animals not under individual control, should be provided with muzzles. Contact with native stock should be prevented in every way possible, and where the military control the situation should be prohibited.

The application of some such system as that suggested above can alone control the situation so far as native stock is concerned. With the above precautions taken, there remain the measures necessary to prevent the spread of the disease when it appears in spite of them, as will doubtless be the case for some time to come. Prompt recognition of the disease and the immediate isolation or destruction of the animal, are the measures of first importance.

Surra having appeared in a stable or corral, all animals therein are under suspicion, and should be critically exam-

ined daily; temperature should be taken at least once daily, preferably in the afternoon, and any animal having fever 101° or over, without well defined cause, should be immediately removed, and no contact permitted with any other animals till the case determines. The blood of all animals with fever should be carefully examined daily, and, upon the appearance of the parasite in any case, it should be destroyed at once or removed to as great a distance as possible. Animals which do not develop surra should not be returned to duty until they have shown no fever or parasites for at least ten days. Animals arriving at any stable or corral, especially if coming from an infected district, should not be allowed to mix with stock on hand, till they have been held under examination a safe interval, say thirty days. The difference in detention periods suggested is due to the fact that the disease would in all probability spread by inoculation in the first case, when the incubation period is much shorter; while in the latter case, if surra appeared, it would be more than probable that the disease was contracted naturally, with a much longer incubation period. When surra prevails in any district, animals should not be moved round from station to station more than is absolutely necessary, and animals under suspicion of surra should not be moved at all. Experience in the Philippines has been particularly unfortunate in this respect, but now that the number of stations to be permanently occupied is practically fixed, the necessity for constant changes no longer exists, and data as to the infection or otherwise of any station can be acquired.

THE FRENCH SCHOOL OF APPLICATION FOR CAVALRY AT SAUMUR.

By Captain FRANK PARKER, Fifteenth Cavalry.

THERE seems to be no question that the French School of Application for Cavalry, is the best equipped and best organized institution of its kind. A simple statement of the major details of this school from the standpoint of equitation will show the completeness of its equipment.

There are for instruction in equitation alone, twelve riding masters, or écuyers. These officers are without exception horsemen of repute, selected upon their records as such. There are in all fourteen hundred horses at the school; there are two hippodromes, and one cross-country terrain, all equipped with obstacles and tracks, for training and racing; there are four riding halls, with complete equipment.

I give these details to show the completeness of the organization and equipment of the department of equitation alone.

I shall commence with this department, as the horse is the subject of foremost interest at Saumur. Later I shall describe the other departments, none the less important, and all organized and conducted with a thoroughness that one sees in every detail of this admirable institution.

Captain Mott, in his article published in the January 1903 number of the Cavalry Journal, gives a most excellent general description of methods employed in the instruction of equitation at Saumur.

I shall, therefore, pass at once to a description of the system by which the high standard of rider and horse is maintained at Saumur. This excellence is due to the gentlemen of the "cadre noir," the "écuyers" or riding masters, cavalry officers detailed for five years in this work. I shall describe

the means by which, and the reasons for which an officer is appointed to this cadre, an appointment bearing with it a prestige of the highest order.

Let us take the case of the cavalry officer coming up from the ranks—the number of officers of this class equals approximately that of the cavalry class graduating from Saint Cyr, but they are not commissioned until after graduation

CAPTAIN DE HAATECLOQUE TAKING BAR.

from Saumur. This young man must have had at least *two* years as sergeant (this means at least four years of enlisted service in the French army), he must have been recommended by troop, regimental and brigade commanders, and *then* he must pass a competitive examination, and only two men are sent from each *brigade*. Therefore the chances are that he is an excellent man.

Once at Saumur, the year for these noncommissioned officers is not essentially different, as regards equitation, from that for second and first lieutenants; naturally, the theory is less advanced. By the end of the year, the riding masters

have had ample opportunity for remarking the qualities of each student, and in each class there will always be a half dozen or so who will be conspicuous as easy, graceful, fearless riders, good all-round horsemen, good in the manège, good on the buckers, good in steeple-chasing, and cross-country, good in horse training, good in hippology and general horse knowledge.

Granted that each man rides three hundred and fifty horses during the year, and horses of all kinds, ages and descriptions, in all sorts of work, his instructor, who watches him and notes him daily, has a very thorough idea of his capacity at the end of the year.

Next, to pass to graduate of Saint Cyr:

The system of equitation at Saint Cyr is exactly the same as at Saumur, only in a lesser state of excellence. However, in the short time that I spent at this school, one day only, I was struck with the admirable installation and arrangement of the department of equitation.

There are four fine riding halls, two large maneuver fields arranged for exterior carrière, and five hundred fine horses, thoroughbred, half-bred, Anglo-Arab, Tarbe, etc., all excellent.

The course at Saint Cyr lasts two years. During the first year infantry and cavalry ride together, and have only about one hundred and twenty hours of riding. At the end of this year the candidates for cavalry present themselves for competitive examination in practical horsemanship, and one hundred are chosen. At end of second year eighty approximately are commissioned as second lieutenants and sent to Saumur. During this second year the class has ridden about four hundred and eighty hours. Therefore on arriving at Saumur a second lieutenant has already had two years of equitation. From this point on to the end of the year, what I have said concerning the noncommissioned candidates applies to the second lieutenants.

Four or five years after graduating, one out of four of the second lieutenants, the proportion is one to each brigade, is sent back for an additional year, upon the recommendation of his colonel and brigade commander, and once again they

go through the same hard year's equitation with the additional work of kriegspiel, regulations, service in campaign, hygiene, German, etc.

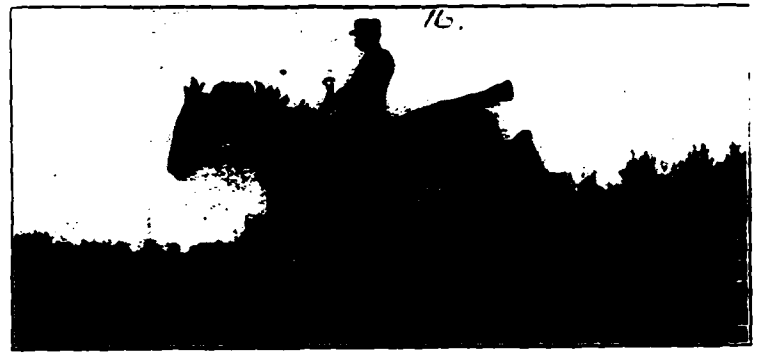
Let us see how the ardent French cavalry lieutenant has passed the four or five years between his first and second course at Saumur.

France is a horseman's paradise. A mild climate the year around, a perfect system of roads and a beautiful coun-

LIEUTENANT MADAMET ON "COURAGEUX," THE THOROUGHBRED WITH WHICH HE WON THE BRUSSELS-OSTEND RACE, 1902.

try in every direction, forests with bridle paths, roads with wide margins of turf, and an agreeable ride in whatever direction one turns. Moreover, every town of France of any importance has its concours hippique each year, in which there are always one or more military prizes; also a series of races, in which one or more prizes are offered for the military. The railroads transport an officer's horse for a ridiculously low figure, and there is always a car on hand to take his horse to hunts, races and concours hippiques. Here I would say that in France all military racing is over obstacles. There is a prize offered each year at Paris for the best charger (cheval d'armes) etc., etc.

Now, therefore, a young and ambitious cavalry officer finds ample opportunities for continuing his equitation in several lines, and the officers who return to Saumur as first lieutenants for the second course, have usually ridden a great deal in races and concours hippiques, the records of all of which are carefully kept. Almost every class has three or four, or several, depending upon classes, men who have thus spent, by the time they finish their second course at Saumur, eight or nine years in close contact with every kind of horsemanship, and amidst the best horses and horsemen



LIEUTENANT DE LA BROSSE TAKING A WALL CAPPED WITH EARTH AND GRASS.

in France. And it is from this category that the cadre noir is recruited; hence the standard of riding and horse.

I question whether there is a single écuyer to-day who cannot give you all the statistics concerning any horse of note in France, or one who is not familiar with all the race-courses of France.

I shall take for example our riding instructor, Captain Féline, at present captain in the Fourteenth Dragoons. Here is a gentleman who can deliver a lecture worth hearing by any audience on saddles, bridles, horse-shoeing, arrangement and care of stables, hippology, anything pertaining to the horse. He is alike at home upon the thoroughbred of the manège, in the delicate procedures of the haute école, as upon the difficult half-bred hunter in cross-country

or the training of an unbroken colt; in brief, the complete horseman. And this completeness arises from two sources, both of which are essential to the officer who is to be a good instructor of equitation. First, a natural love of the horse, and second, years spent in the practice and study of the theory of equitation and all that goes therewith, and this under masters as efficient as Captain Féline is to-day.

The riding masters not only teach practical equitation,

RIDING INSTRUCTOR TAKING A HIGH HEDGE.

but profess hippology and the theory of equitation, and, in addition, train three or four (never less than three) green horses each year. The experience that an écuyer has had when he completes, let us say, his first term as such, is something enormous. I have already called attention to the fact that a conservative calculation shows that each student rides three hundred and fifty different horses during his year at Saumur.

The roster of the riding instructors is as follows: One instructor in chief, rank of major; six instructors with rank of captain; five instructors with rank of lieutenant.

The appointments are made by the Minister of War from the list of those officers recommended by the superintendent of the school and the écuyer en chef.

The term of their service as riding master is five years. This is the regulation period for all detached service, and no officer is allowed to remain away from his regiment more than five consecutive years. An écuyer, however, may, and usually does, return one or more times, and the chief has heretofore always served previously as instructor.

NONCOMMISSIONED OFFICER OF THE CADRE NOIR TAKING "THE RIVER."

Their pay remains the same, except for the slight increase of six dollars per month allowed to all officers on duty at Saumur.

The écuyers are assisted by a noncommissioned body of one sergeant major, one first sergeant, and eight sergeants. Their duty consists in the training of young horses, of horses particularly difficult, in breaking the colts, and in training and riding the sauteurs. They likewise have general charge of the stables. These men come from the cavalry regiments, and are sent to Saumur because of marked ability as riders. They remain several months on probation, and, if judged capable, may remain indefinitely, so long as they give satisfaction.

But the work is exceedingly hard: they ride as many as twelve horses in a single day, and usually the most difficult.

and after fifteen years' service they usually request retirement. This they are entitled to, and this they certainly have deserved. These noncommissioned officers are a worthy addition to the cadre noir. Magnificent horsemen, spending their entire day in the saddle, and passing from one horse to another a dozen times a day, I question whether they have superiors in practical horsemanship. Nothing but pure love of the horse and equitation could cause a man to undertake and pursue continuously work of this kind, and this, combined with the necessary sturdy physique, makes of these men admirable horsemen.

The noncommissioned officers, however, do not teach riding; all of the instruction is given by the officers of the cadre noir. But they take part in the tri-weekly rides of the écuyers, riding the sauteurs, with the lieutenants of the cadre.

Captain Mott has given a most graphic description of the "Reprise des Écuyers." I shall therefore limit myself to a few of the details of this ride. The object of the "reprise" is to keep before the eyes of the school the practical exposition of the most important branches of equitation, as taught at the school.

The "reprise" opens with the officers of the cadre noir mounting the highly trained, selected thoroughbreds. The movements are all at the slow trot, and are intended to demonstrate the perfect obedience of the animals to the indication of the hand or leg; the suppleness and complete mastery of the animal over his own mechanism.

The exercises consist at first of figures of various kinds, movements along the diagonals, along spirals, keeping the axis of horse perpendicular to the curve, etc. Finally, the high-school, consisting principally of the Spanish step—interrupted walk in which the members are raised and extended well forward before being planted—and the passage or interrupted trot, in which the animal pauses between steps, raising the feet high in the air and marking a distinct pause. In this latter exercise the thoroughbreds have an indescribably graceful and dainty appearance; some of them execute these steps with remarkable address and brilliancy

With the high-school terminates the work with the thoroughbreds, and the sauteurs are then brought in, mounted by the lieutenants and the "sous maitres," noncommissioned officers of the cadre noir. The sauteurs are half-breds of the hunter type. The first movement is a rapid gallop round the hall, then a movement by the flank, a halt, and the horses at a signal rear to a vertical position; then down and away again; a few figures all at a rapid gait, and again they pause in the center of the hall, and at signal lash

CAPTAIN SAINT PHALLE RIDING A THOROUGHBRED AT THE SPANISH STEP.

out, elevating the hind quarters high in the air, then off again. A third pause, and the combination of rear and kick is effected. This results in a formidable buck, and these animals from constant practice, are able to make tremendous buck-jumps. This part of the schedule usually closes with each animal's making one or more buck jumps in passing a certain point in the hall.

The shape of these sauteurs at once attracts attention. With very thick round barrels and great muscular development in all parts, they would appear, when not in motion, very clumsy, heavy animals; and yet, when once in motion, they are as quick and active as ponies. The peculiarity of

their shape arises from the constant exercise, in the "piliers" and outside, in the violent exercise of the "saut." They tell me that even a delicately built thoroughbred will thicken to such a form after a year or two in this work. There is a special saddle for the sauteurs which I will describe later.

The third and last part of the "reprise" is the work with the half-bred hunters over obstacles. In this work all officers of the cadre noir take part. Various obstacles are used from the simple bar to combinations of two hedges and a bar, two bars and a hedge, etc. The obstacle frequently goes above six feet in height and four or five in width. These hunters are usually the horses being trained by the riding masters

The park saddle is used in this work. The entire ride is given in the riding hall. Once having seen these horsemen and horses, any fair minded American cavalry officer will admit that between French equitation, as demonstrated and taught at Saumur, and the equitation taught at West Point there can be no comparison. At Saumur he sees the careful development and evolution of a science, long since entrusted to scientific specialists; here he finds a system carefully thought out in the beginning, dating from the administration of the Count d'Aure (1736); since that time succeeding administrations have added their improvements successively.

Captain Saint Phalle of the cadre noir, and one of the most celebrated horsemen in France to-day, said to me: "This system that you see here to-day has not been inaugurated by this administration. It dates from the early part of the eighteenth century; we écuyers simply endeavor to add something to the fabric already carefully constructed, and based upon principles long since found to be correct." Captain Féline, likewise of the cadre noir, said to me: "The principles of equitation are to-day practically fixed. Any two or more men, having a proper knowledge of what they write when treating the subject, are bound to say more or less the same thing. Equitation is no longer in an experimental state."

There may be some argument as to the material advantage of the high-school and scientific equitation from the military standpoint. So I shall state here that the écuyers treat equitation in all its forms; their idea is that a cavalryman should be given the correct idea of what a horseman and a horse should be: a horseman from the various standpoints of horse-breaking, horse-training, steeple-chasing or cross-country, riding hall exercises, riding of difficult animals

SAUTEUR EN LIBERTE — REARING. RIDING MASTER.

and the high-school: a horse from the standpoints of charger, hunter and race horse, and from the standpoint of breeding.

Here I wish to say that only straight equitation is taught. By straight equitation I mean the work with the jumpers in the riding hall, hippodrome and cross-country; 2d. The training of a green horse, to the extent of having him understand the change of lead, to respond readily to hand and leg, and to jump freely; 3d. The riding of well trained thoroughbreds in the various simple movements of the riding hall; 4th. The sauteurs, horses trained to kick and buck; 5th. Some instruction in the training of horses for racing. Under this last heading I would say that there are about forty of the horses be-

longing to the school which are trained by selected members of the student classes for the spring races, which take place at or in the vicinity of Saumur. These horses are ridden in the races by the officers who train them.

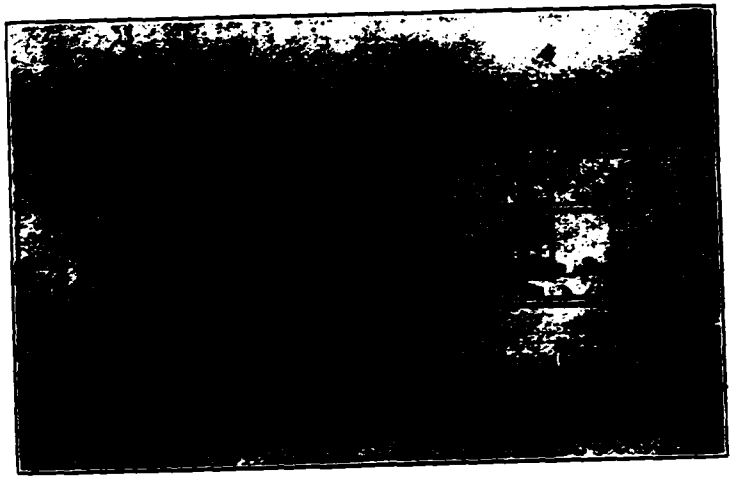
However, the more finished side of equitation, such as the high-school, is presented to the student in order that he may see the higher education of the horse and the proper way in which to go about such work. This system shows the science of equitation in its highest development and in all its branches. For those student officers who desire to specialize, it demonstrates the higher steps, and by force of practical example, gives to the young graduate a most accurate idea of the lines along which he is to work, if he aspires to be considered as an "homme de cheval," or to be an écuyer.

And let every American cavalry officer disabuse himself of any idea that he may have that military equitation in France is not strenuous. Let him take a "draw in the dark" amongst the principal half-breds for the weekly cross-country run at Verrie, with snaffle bit and no stirrups, and ten to one upon his return he will say that it was sufficiently exciting. Or let him mount (as do many of the écuyers and student officers) in steeple-chases and obstacle races, horses he has never seen until he mounts them to go to the post, and over courses that he has never raced on before. It will be of sufficient pace to prove my assertion. Let him go to Pau and follow a drag across that country; let him mount the sauteurs in liberty, or those powerful unbroken half-breds; there are many ways in which he could convince himself of the truth of my assertion.

Finally, the cadre noir consists of a dozen of the best riders that the French cavalry can produce—men who have spent their lives in practical equitation of the most varied description, from the training of difficult, unbroken half-breds to the high-school for the selected thoroughbreds; alike at home in cross-country or in riding hall, on steeple chase or race course, on broken or unbroken horses, knowing the theory of treatment for all possible cases, and the proper manner of putting it into practice, I shall ever believe these gentlemen to be

the best all-round horsemen of the world. There may be better, but I shall have to see them before I change my opinion.

The French government has seen the wisdom of encouraging specializing, and it is due to a continuous line of specialists in equitation that the cavalry school of Saumur owes its unquestionable superiority in this science. Hardly a member of the cadre noir but is famous as a horseman through-



SAUTEUR EN LIBERTE. RIDING MASTER.

out the French army: such names as De Montjou, Féline, Saint Phalle, Madamet, De La Brosse, are famous beyond the limits of France, and as long as men of this calibre direct the department of equitation, the prestige of Saumur will not diminish.

There is but one way to produce such horsemen, and that is by the establishment of a system of equitation equally as well devised as that of Saumur and Saint Cyr. In view of the general efforts now making in many directions to improve our military service, our cavalry service may well turn its attention to a careful consideration of the French methods of instruction in equitation.

While at Saumur, and with the Fifteenth Chasseurs at

Chalons, I have been struck with the fact that colonels, majors, captains and quartermasters, all mounted officers of every age and grade, are out on horseback all the time, jumping the obstacles and generally enjoying the exercise. The lieutenant-colonel and major of the school roster used to accompany the cross-country rides, leading the van, and jumping everything in sight as gracefully as any of the younger men. The French say, that "no man is a horseman who does not mount his horse daily."

Now, the French are no more vigorous than we, nor do they like to ride better than we; hence, I attribute the fact that they ride far more than we do, to their system — better horses, light equipment for pleasure riding, and fields arranged for exercising horses on track or on obstacles. All these items make riding a pleasure, and the more one rides, the better horseman one becomes.

For some reason there is a strong prejudice against the park saddle in our cavalry service; that it is a prejudice based on absolute ignorance of this saddle, goes without saying. There seems to be a prevailing idea that it is impossible to associate serious horsemanship with a park saddle and patent-leather boots. I wish that the holders of this opinion might all have the opportunity to ride with these French cavalry officers; I am quite sure that they, like myself, would arrive at the conclusion that the park saddle is the saddle for all work, except military work; and that clothing cannot unmake the man, any more than a saddle can affect his horsemanship. Moreover, we are, I believe, the only army in which the officers of cavalry use their regulation saddles when not on duty. Therefore, if an officer of our cavalry is called on to ride, away from his regiment, he is forced to ride the park saddle among civilians as well as among other military communities. But a man has to be taught to ride the English or park saddle, just as he has to be taught to ride his regulation saddle, for the two seats are not at all alike.

I am fully convinced that we should adopt this saddle for ordinary riding—everything except military drills and exercises. My reasons are as follows:

1st. It is light and very natty in appearance.

2d. It is far more agreeable for pleasure riding.

3d. Any one who can ride an English saddle, can cer-

TAKING OBSTACLES FIVE FEET HIGH AND SIX FEET THICK.

tainly ride a regulation saddle: just as an oarsman who exercises in a shell, can be counted on to row in a barge.

4th. Our cavalry seem to be the only horsemen of the day who do not use this saddle.

5th. I am convinced that sitting the trot is antiquated, that it is a method which was never intended for the American cavalry horse, that it is wrong in theory and practice, and that it is alike hard on the rider and on the horse. By the law of action and reaction, what is bump for the rider is bump for the horse. It is entirely logical that rising to the trot is far easier for the horse.

My further reasons for preferring to rise to trot are based on a full year's experience, and are as follows:

1st. It is more agreeable riding.

2d. It is less fatiguing to man and horse.

3d. One is less liable to cause sore backs.

4th. By this method the hardest trotting horse may be ridden with more or less comfort.

5th. When other nations, who have every right to be considered as good horsemen as ourselves, have adopted this method, it is time that we at least give it a trial.

Why is it that so many of our cavalry officers rise to the trot to-day, in spite of regulations, and why do our older soldiers seek pacing and single footing horses? Here in France a cavalry officer rides his horse at a trot up to his retirement, for hours at a time, and with *pleasure*.

[NOTE.—Rising at the trot is not forbidden by our Drill Regulations; Paragraph 988 reads: "Many cavalry officers are now disposed to favor rising at the trot, as a relief from the close seat, and a desirable change to men and horses. With proper instruction, this practice may occasionally be found advantageous in long marches."—EDITOR.]

THE FOURTH CAVALRY WITH GENERAL LAWTON IN LUZON.

BY CAPTAIN GEORGE H. CAMERON, FOURTH CAVALRY.

GENERAL EDWARD M. HAYES, U. S. ARMY.

[*Continued.*]

THE NORTHERN EXPEDITION.

THE plan of operations for the fall of 1899 provided for a flanking movement under General Lawton, similar to that of April, but with the object this time of surrounding the insurgent army west of the Rio Grande, and capturing Aguinaldo and his headquarters at Tarlac. The advance

brigade of General Lawton's command, under Brigadier General S. B. M. Young, consisted of the Fourth Cavalry (except Troops E and K) the Twenty-fourth and Twenty-fifth Infantry, the Macabebe Scouts, under our Lieutenant Batson, Scott's Mountain Battery (a company of the Thirty-seventh Volunteer Infantry with the guns of the original "Astor Battery") and a detachment of engineers. Several changes in the makeup of the brigade occurred during the advance, as will be noted. The line of advance as planned was through the towns of Arayat, San Isidro, Cabanatuan and San José.

The regiment was ordered to San Fernando early in September. The movement was made by rail, the available rolling stock permitting but one troop to move daily. The box cars were so diminutive that we had difficulty in loading four horses per car, these four being fitted in, like shoes in a shoe box. Then, to guard against accidents, it was necessary to close the door. As there was no ventilation except through a tiny window at either end, our poor horses emerged from this sweat-box in the most woe-begone shape. The men, for whom no accommodation had been provided, cheerfully baked in the sun as they rode on top of the cars.

F, B, M and A made the trip on successive days, beginning September 5th. These four troops of the First Squadron had their American mounts. Next came I, with its pony mounts, then L, with a combination of ponies, fat band greys, and some Australian horses on probation, and on the 11th the headquarters. The men were quartered in abandoned public buildings and houses, while the horses were stabled in sugar camarines. On the 20th Captain Erwin brought up the Second Squadron (still dismounted), except G, which with the band was left in charge of the barracks at Pasay.

Nine troops were ready to start at command. Duty at San Fernando was the usual outpost, but work was incessant, as the recruits were still weak in mounted drill, and many horses were still unshod. Occasionally patrols were sent out beyond Mexico (garrisoned by the Twenty-fourth Infantry) to feel the country.

A platoon of Troop B, under Lieutenant Slavens, pushed as far as Santa Ana on October 3d, having a fight in

the streets of the town in which four insurgents were killed. On the same day Captain Cameron with Troop A drove the enemy out of a trench at Santo Niño, but lost Private Charles Radcliffe, who was shot in the head while riding at the point.

On September 15th Lieutenant Colonel Edward M. Hayes, who had succeeded Lieutenant Colonel Wagner, arrived from the States and hastened to San Fernando to assume active command of the regiment. The advent of a man of his rank and experience was most welcome, as it was felt that we should have a chance to be something more than the man-of all-work. Veterans of the Civil War "hiking" in the Philippines were scarce, and Colonel Hayes soon became well known for his energetic campaigning. At San Fernando, also, joined Chaplain Oliver C. Miller, of California, attached to the regiment. He had come to the Islands with his State volunteers, was an active man, accompanying the column throughout the campaign, and exercised exceptional influence and control over the men.

The start of the expedition was delayed by the unusually heavy rains of this year. In every direction streams were overflowing their banks, and roads were mere bogs. On October 10th the order to move was published, and the 11th saw us on the road.

Lieutenant Munro had succeeded Lieutenant Dudley in command of L.

For transportation each troop had five carabao carts, carrying rations, ammunition, field forge, horseshoes, etc. Two days later each had three, a week later but one, and after two weeks we were reduced to our saddle pockets and were doing effective cavalry work.

During the whole campaign the saber was carried. Not once was it used as a weapon, but, strapped to the saddle, it lay in the mud, accumulating rust for the inspector, a useless burden to weary horses and a source of never ending profanity to weary men.

The efficient work of General Young's aides had improved the roads, mostly by bamboo corduroying, to such an extent that progress was excellent on the first day, and

the provisional brigade encamped at Santa Ana. Next morning the Twenty-fourth Infantry moved out to capture Arayat, which had been reoccupied by the insurgents after the close of the April campaign. The First Squadron was dismounted and marched nearly to the town as a support, but was never needed. Although strong resistance had been anticipated, a few of Scott's shells were sufficient to start the garrison on the run. By the 13th the roads had been repaired sufficiently to bring up the train.

Late in the afternoon Captain Erwin made a reconnaissance with C, D and H, along the road to the westward, by which the enemy had retreated the preceding day. He struck them in force, not over two miles from town, deployed the three troops, and, after a brisk engagement, chased them out of their intrenchments into the timber. First Sergeant Gustaf Will (D), Corporal Charles B. Hall (C), and Private Matthew Killian (D), were wounded.

Four days were spent at Arayat, waiting for the construction of a rope ferry across the swollen Rio Grande. This was the first of many delays encountered in the attempt to operate and supply troops in spite of rain and mud. In the construction of this rope ferry, and in the subsequent difficulties encountered in advancing his supply train, General Lawton was always on the spot, directing with the push and restless energy which earned for him in the '70's the name of "the best field quartermaster in the service." During the wait Captain Ballance's battalion of the Twenty-second Infantry and Batson's Macabebes joined the brigade.

On the evening of the 17th these two commands crossed on the ferry and took the advance up the left bank. Batson successfully executed a detour and tested his men in a hand-to-hand fight in a trench near Malibutad. The "little brown men" played havoc with their old enemies, and behaved in a manner that convinced Batson that they would meet any demand. The First Squadron moved across the river in the forenoon of the 18th, the first troop, A, establishing a line of couriers, and connecting at noon with Captain Ballance, who had captured the town of Cabiao without difficulty at 10 o'clock. The whole brigade and train reached

this town during the afternoon and night, after a terrible struggle with the boggy roads.

Next day the battalion of the Twenty-second again took the lead, closely followed by Colonel Hayes and the First Squadron. It was a most mortifying experience to progress slowly up the road as the way was cleared for us. The universal growl was vigorously voiced by Colonel Hayes, but with no success. The Colonel was anxious for a chance "to ride 'em down, sir!"

Some satisfaction could be taken in watching the business-like methods of the Twenty-second. This battalion pushed steadily up the road, the scouts, flankers and lines of skirmishers, when required, moving with a confidence and precision remarkable in such a country. A few men would search a thicket or an isolated house and then quickly resume their places, reminding one forcibly of the rapid work of a well-trained hunting dog. If the point marching on the road was fired upon, the men dropped prone, vigorously worked the magazine, and then quietly resumed the march. In the capture of large towns we invariably found the main resistance at a barrio, some three or four miles out. The Filipinos, in this way, prevented the possible destruction of women and children, who were in evidence in great numbers in the town itself. As a rule they sat in the windows under white flags and carefully counted our men marching in.

San Isidro was no exception. The barrio of Calaba had been intrenched and manned by the troops of Pio del Pilar. Captain Ballance made short work of it. Troops A and B were dismounted to form reserves for the wings of his battalion, but the advance into San Isidro, as far as they were concerned, was as uneventful as a holiday procession. Up the streets, far in advance, the same beautiful work could be seen, skirmishers peering around corners, climbing fences, now and then a few shots, but always the drill-like advance.

San Isidro was made a base of supplies. The incessant rains which hampered the movements of troops had proved of benefit in permitting the navigation of the Rio Grande as far as this town. Beyond this point, however, the river rose and fell with such startling rapidity that the trip of a boat

was a pure matter of luck, and accordingly steps were taken to equip the advance column with complete trains. A delay of over a week ensued, while General Lawton labored to accumulate rations and supplies in quantity to warrant a further advance.

During this time, in compliance with G. O. 153, A. G. O., the squadrons were reorganized alphabetically, and, in order to make two complete squadrons from the troops present, L was attached to the First and M to the Second Squadron. Captain Erwin, who had taken D and H back from Arayat to receive their horses at San Fernando, rejoined on the 23d and took command of A, B, D, and L. C Troop still dismounted was attached to division headquarters as train and station guard. I Troop, as usual, was General Lawton's escort. Captain Rivers commanded F, G, H and M. Troop G, under Captain Cress, was equipping at San Fernando and preparing to overtake the squadron. Lieutenant Slavens left the column on October 23d, to accept the position of aide on General MacArthur's staff, vacated by our Lieutenant Brown, who had been made a major and inspector of volunteers.

Lieutenant Dudley succeeded to the command of Troop B. This young officer made a most creditable scout on the 26th with one of his platoons, penetrating eight miles into the enemy's country and making an excellent report of the obstacles to be overcome. On the 27th we resumed the forward movement, with Captain Ballance still leading. The road to Cabanatuan runs parallel to the Rio Grande and crosses all of its tributaries. These streams, with steep banks and all bridges destroyed, proved almost a complete check to progress. Bamboo rafts were constructed, but they would carry, at most, one cart or about a dozen men, the horses and carabaos swimming the streams. At the Taboatin River the Twenty-second had a lively fight, with three casualties, in driving the enemy out of a trench on the opposite bank, but reached their destination, Santa Rosa, before nightfall. The First Squadron encamped for the night at the Taboatin River and spent the next day as engineers and freight handlers in the endeavor to insure the advance of

the supply trains. At this stage of the proceedings the whole division was strung out and struggling to pass rations up to the head of the column. We moved up to Santa Rosa on the 29th. Inasmuch as our horses had been living on the country for some time with satisfactory results, plans were here made to allow the cavalry to operate alone.

On October 30th Majors Augur and Morton were assigned to command the two squadrons. On the 31st two columns were started. Colonel Hayes, with Major Augur and the First Squadron, set out for Talavera by way of Cabanatuan, which was held by the Twenty-second. After successfully fording the broad Rio Grande at the latter town, we struck out into unknown country. All along the road, as we advanced, were abandoned carts and impedimenta, indicating a demoralized flight. The sight of these naturally induced a desire to push ahead, but the gait was inexorably hindered by the quagmires and marshes through which we were obliged to pass. Resistance was encountered in only one barrio. While the leading troop (A) dismounted and pushed the enemy aside, Colonel Hayes galloped the rest of the squadron into Talavera, capturing a storehouse filled with ammunition, shells, and brass howitzers, as well as a valuable library and seventy sacks of flour marked, "Portland, Oregon, U. S. A." The effect of this sudden appearance of the American trooper with his "caballo grande" was far-reaching. The garrison and the natives who scattered over the country spread wild tales of the man-eating horses as an explanation of their eagerness to get away.

The second column, under Lieutenant Colonel Par[illegible], Forty fifth U. S. Volunteer Infantry (our Captain Pa[illegible]er), with Batson's Macabebes and Troops H and M under Captain Erwin, set out for Aliaga and occupied the town on the evening of October 31st. This command had the same difficulty with the impassable roads, one horse in M Troop miring so badly that he was ordered to be shot.

On entering the town Lieutenant Batson rode ahead alone and captured the telegraph operator, his instrument, and three important messages, as well as two ponies, two bull carts, and considerable property. The Macabebes,

scouring the country on the succeeding days, encountered the enemy on November 2d, near the barrio of Santiago in a well concealed position from which strong volleys were poured into Batson's command. Lieutenant Boutelle, Third Artillery, was killed when about to charge the position. Batson's inspiring example nerved the Macabebes in the rush that followed, and the insurgents were routed, leaving six dead in the trenches.

At the first news of the engagement, Colonel Parker took all the rest of the command (except ten men left in Aliaga with Captain Lockwood) and hurried to the scene. A running fight developed as soon as he left town, and skirmishing was practically continuous during the day. The two troops marched nearly twenty miles, crossing five streams by swimming, and succeeded in threshing out every barrio in the vicinity, with a result of twelve more dead insurgents, and only one casualty, Private Henry Rudenbeck slightly wounded. On the morning of the 3d, while the men were answering water call, they received a genuine surprise in the shape of three wild shells discharged from a piece of artillery in the neighboring woods. A detachment was hurried out and drove off the enemy, but, in spite of hard work, could not locate the gun. The command returned to the Rio Grande on the 5th, remaining in camp opposite Cabanatuan until the 8th, on account of the high water.

On November 2d a third column, consisting of Troop D, Third Cavalry, under Captain G. F. Chase, and Troop F, Fourth Cavalry, under Captain Rivers, made a raid on Bongabong, eighteen miles eastward, captured the town without difficulty, killed three insurgents, secured twelve ponies and six rifles, destroyed a large quantity of powder, uniforms, and signal property, and returned to Cabanatuan the following day without casualty.

Colonel Hayes's command at Talavera could obtain no supplies, and found itself still anchored to Manila for rations, or rather half rations. The whole advance column had been reduced to half rations on October 25th. Three days were consumed by our bull carts in making the trip to Cabanatuan and return. This time was spent in scouting the country,

with the result that large quantities of ammunition, shells, reloading tools, valuable books and papers, were discovered hidden away in remote places. At San Domingo, Lieutenant Davis and Chaplain Miller came upon a hospital containing fifteen wounded Filipinos, abandoned in a starving and filthy condition. Some of these men had been wounded near Manila in the early stages of the war and some quite recently. In every case a bone was fractured. Here was tangible evidence of the statement that many wounded are carried away in every engagement. Colonel Hayes promptly sent the surgeon with medical supplies, and the Chaplain impressed natives to nurse these unfortunates. The hospital was policed and disinfected, and all wounds dressed and bandaged.

In the light of subsequent events, it is clear that Aguinaldo contemplated retiring from Tarlac to Bayambong, Nueva Vizcaya, by way of San José and Caranglan. When, therefore, the former commander of Talavera reported the loss of his town and the probable advance of American troops to San José, Aguinaldo flew into a rage and ordered him to recapture Talavera, assigning him 200 picked troops for the purpose.

Colonel Hayes's command was rudely awakened at 4 A. M., on November 7th, by a tremendous fusilade poured into Talavera from three directions. With the exception of two volleys from a "rattled" outpost, no reply was made to the storm of bullets. The men turned out and fell in with amazing speed and lack of confusion. In less than three minutes the whole command had assumed the positions previously designated by the squadron commander.

Then followed an hour of antics peculiarly Philippinesque. Their bugler, a splendid performer, playing on a Spanish keyed-instrument, executed an inspiring air, followed by the celebrated "Bolo charge," and then came the loud commands of the officers. From a distance of about 700 yards the insurgents rushed forward with cheers to a range of about 500 yards, halted, and sent in two or three high volleys, retreated to the original position, and repeated the whole program.

One could not help fancying himself a silhouette target for these "skirmish runs."

Our fire-discipline was excellent under the temptation offered, for, emboldened by our silence, the insurgents were within two hundred yards at daybreak. Colonel Hayes then gave the word, and the contents of the magazines from B and D Troops produced a wild stampede that our men could not follow. One wounded and two dead insurgents were picked up in the high grass, but the many trails from the town were covered with blood. Our loss was one pony killed. Fifteen minutes after our magazine fire, the men were busy cutting rice grass with their mess knives and singing the familiar "'Way Down Yonder in the Rice Field."

Lieutenant Harris rejoined in the forenoon, with a detachment of convalescents from Manila, and in the afternoon General Young and his staff arrived, bringing orders for a move on San José the following day. The eighteen-mile march was uneventful. General Young, with the Macabebes, taking a more direct route, reached San José an hour ahead of us, met with no resistance, and captured more stores and machinery of the abandoned Cabanatuan arsenal.

At this town we received sad news. Troop G, which, as previously stated, had been left in our barracks at Pasay, received hurry orders to join General Schwan's brigade, organized to clear up Cavite Province, where the insurgents, under Trias, had become decidedly aggressive. Captain McGrath, with Lieutenant Purviance and fifty-two men, dismounted, left Pasay at 11 o'clock P. M., October 5th, reaching Zapote bridge after three hours' march. Next morning the troop joined the brigade at Binacayan, where eleven companies of the Thirteenth Infantry, three of the Fourteenth, Reilly's battery Fifth Artillery, Tate's mounted troop of the Third Cavalry, and Castner's company of Tagalog scouts, were assembled. In the movement on Cavite Viejo on the morning of October 8th, G Troop and the Tagalogs had the advance position. The town was deserted, but a reconnaissance disclosed numbers of insurgents holding the road on to Novaleta.

Captain McGrath was now placed in command of the advance, with two companies of the Fourteenth Infantry under his orders, to be used as reserve. Scouts having ascertained that the strong insurgent position on the Rio Mindlat could not be turned, a frontal attack was begun at about 11 o'clock A. M. G Troop advancing, deployed on the right of the main road, and Castner's company on the left, each with an infantry company in support. The enemy started continuous fire from the time the line arrived within a thousand yards, but as usual shot high. Advancing by rushes from dike to dike, and firing excellent volleys, our men pushed on, seemingly without casualties, to about 300 yards from the trenches.

Suddenly the insurgents discharged a cannon, which was cleverly concealed under a nipa shack, and Captain McGrath fell with a jagged wound in the thigh.

The advance was not checked, although the supports suffered heavily from bullets passing over the skirmish line, and the line itself was under a tremendous fire. Corporal John P. Martin and Private William J. McIntyre, both of G, were wounded before the trenches were finally carried. The troop captured the cannon that had laid their captain low, which proved to be an old muzzle-loading brass, two and one-half inch piece, about thirty inches long, and had evidently been loaded with scraps of metal. Little resistance was met in the remainder of the march into Novaleta. The following morning Rosario was entered before 9 o'clock, and communication was established with a launch from Manila, bringing rations and needed supplies. The cargo was unloaded with alacrity, and all the wounded of the column were hurried back to Manila by water.

In the afternoon the brigade in two columns set out for San Francisco de Malabon, spending the night in bivouac on the road. The advance on the morning of the 10th was resumed with caution, as rumors of Filipino concentration had been received. As a matter of fact, however, Trias had disbanded his force, and satisfied himself by annoying the column with small patrolling detachments. After entering the town without difficulty, a battalion of the Thirteenth Infantry pushed on towards Buena Vista, and ran into a position from which they suffered considerable loss. On their return

they came upon a Filipino field hospital, flying the Red Cross flag and containing five dead and twenty-four wounded insurgents.

On the 12th, with G Troop and Castner's scouts again leading, a march was made straight across rice fields for four miles to the Imus road, and thence to Dasmarinas, where orders were received to return to Manila, since little headway could be made against the scattered guerilla bands. The brigade was accordingly marched back to Bacoor on the 13th, and was there disbanded, the troop continuing the march back to our barracks that evening.

Captain McGrath, under the best of care in the hospital at Manila, lingered until November 7th, but the climate and his run-down condition from hard field service were against his recovery from a wound that would have been serious in any case. In McGrath the regiment lost a genial comrade, a talented, brainy officer, and as brave a man as ever wore a uniform. Generals Schwan, Lawton, Otis and Miles successively concurred in recommending a brevet for his exceptional gallantry in the action in which he was wounded.

A telegram from Manila, forwarded to General Young, read: "Your most important objective, Caranglan, etc." No time was lost in complying with these instructions. With three days' half rations in the saddle-bags, Colonel Hayes set out early on November 9th for Caranglan, a town where the two main roads to Bayambong unite. During the forenoon the swift Rio Grande was forded no less than eleven times. At Puncan the scouts captured a small detachment with five Remingtons, and shot a boloman who attacked instead of surrendering. The trail to Caranglan showed the footprints of a native running to give the alarm, and we found that the town had been abandoned only an hour before our arrival. One Domingo Colminar, a secretary of Aguinaldo, was found in the best house in town. He had been engaged in making preparations for his chief's retreat, and had chosen to remain with his wife, who was in a delicate condition.

On the 11th an outpost reported the approach of a large body of natives. Colonel Hayes immediately rode out to investigate. They proved to be 167 bolomen from Nueva Vizcaya, sent to act as Aguinaldo's escort. To our surprise, they evidently did not know Americans when they saw them, but straggled in, salaaming most profoundly to the Colonel. Once concentrated in the plaza, they were quickly surrounded and disarmed in spite of the frantic exhortations of Colminar from his window. Their bolos (each carried one large and one small knife) were distributed to the men for use in cutting grass.

Meantime, the ration question was serious. On the 10th and the 12th an officer with twenty men returned to San José and brought up two days' half rations packed on the military saddles. Colonel Hayes having been summoned back to San José on the 13th, took B Troop and all the prisoners, thus reducing the supply problem to some extent; but on the 14th heavy rains set in, lasting five days and swelling the mountain streams so that fording was impossible. During this period the command lived on carabao meat. Famished men experimented with bamboo cabbage and other unwholesome greens, and ran up a tremendous sick report. On the 18th, Lieutenant Holbrook, the efficient quartermaster and commissary, managed to work his way up from our train at San José after a two days' test of pluck and endurance, and on the 20th Major Augur received word to abandon the town.

When the start for the return was made, fully half of the eighty sick men were clinging to the pommel with both hands. Two fell off within a mile, and many were swaying. Just in the nick of time the Vizcayans, liberated by Colonel Hayes, appeared on the scene bound for home. With a promise of rice and pesos they were persuaded to act as bearers, and we resumed the march. Before we reached Puncan, eight soldiers were in litters and a dozen or more had to be coaxed back into the saddle every half mile. The second day's march was even more trying. At San José each troop established two or three sick wards, the well men were detailed as nurses, and every effort was centered on restoring the strength of the command. Farrier Michael Sullivan and Private William H. Erwin (A), and Private Peter Griewatz (D) were buried at San José, but more than twenty men

who had taken part in the Caranglan trip were subsequently sent back to the States and discharged for disability.

It was disappointing to learn that Aguinaldo had struck further north, and that General Young had pushed on his trail with the Macabebes and such troops of the Third Cavalry as could overtake him. General Lawton himself had abandoned the work of superintending the supplies, and had hurried forward to Humingan and Tayug, where our Troops G and F were holding the towns and furnishing couriers and escorts.

On November 22d, First Lieutenant H. A. Sievert, promoted to the regiment, joined from Manila and was appointed squadron adjutant of the First Squadron. On the same day Second Lieutenant J. N. Munro, with a detachment of fifty men selected from the four troops of the First Squadron, and three native guides, set out for Bayambong. His route via Caranglan, Salazar, Dupax, and Bamban, was a difficult mountain trail that taxed the strength of the ill-fed horses. From Dupax, which he reached without resistance at noon of the 25th, he sent out scouting parties to ascertain if the rumored strength of insurgents was correct. No signs of the enemy could be discovered, but about noon of the next day a flag of truce appeared, ushering in an American prisoner and the Presidente of Bamban. From them Lieutenant Munro learned that his party of fifty men was supposed to be the advance-guard of a large force, and that preparations for surrender were well under way. He accordingly sent a courier back for reënforcements, and Colonel Hayes dispatched Captain Erwin up the trail with H Troop and details bringing his strength up to an even hundred. More prisoners came in to Munro next morning, among them an American who turned out to be a secret service man of General MacArthur's. This man had a full knowledge of the situation, spoke Spanish and the native dialects, and proved of great benefit. Munro sent him back with a guard to Bamban, whence he telegraphed to General Canon in command of the district, and soon secured his consent to a surrender on the next day. On the next morning, however, Lieutenant Castner with his native scouts pushed into Bamban from the west, and, learning of Canon's willingness to surrender, set out for Bayambong with characteristic energy and promptness. Munro reached Bamban an hour later, discovered what had happened, and started a stern chase.

Castner was soon overtaken, and the two young officers after a lengthened parley decided that it was a case of "first come." Munro had a horse, Castner a pony; result: Munro received the surrender of General Canon, fourteen officers and about a hundred men with sixty rifles, and liberated 128 Spanish and seven American prisoners. In his report of this expedition General Lawton wired as follows:

"*Chief of Staff Manila:*

"Lieutenant Munro is deserving of highest commendation. "LAWTON."

The town and the surrendered arms were turned over next day to Captain Batchelor, Twenty-fourth Infantry, who, with a battalion, followed Castner's trail. On November 30th Munro started on his return to San José, accompanied by the American and most of the Spanish prisoners. At Bamban he met Captain Erwin's advance party and received most needed rations. The return trip was most exhausting on the horses, many of them having lost shoes on the rocky trails.

Meantime word had been received at San José, that General Young was in hot pursuit of Aguinaldo and that General Lawton had been recalled to Manila to assume charge of a campaign in the south of the island. He sent word to Colonel Hayes that he would take six troops of the regiment south with him. Our supplies finally having overtaken us, the succeeding days were one long stretch of horseshoeing. On December 4th, F and G came down from Humingan and Tayug, and C and I arrived with General Lawton. On the 6th Headquarters and A, B, D, F, G and H, marched to Talavera, leaving L stationed at San José and M at Tayug. On the 7th the command reached Cabanatuan. Next day, under General Lawton's orders, the two squadrons were trimmed down to sound men and horses, with a result that 128 men and eighty-eight horses were left to accompany the supply trains.

Our destination was San Miguel by a detour through Penaranda, intended to cut off the insurgent forces of Pio del Pilar. The command back-tracked to the Tambo River and then struck across to Penaranda, where a halt was made until 5 P. M. The march was then resumed on a mountain trail, and was kept up until almost midnight, plunging into deep streams and struggling through dense brush in inky blackness. It developed afterwards that the attack on San Miguel planned for the 10th, was postponed a day; but Colonel Hayes knew nothing of this, and, having received instruction to be behind the town at a fixed time, plodded along through the night until his guide assured him that he was on the spot. Shortly after leaving camp on the 10th, the scouts ran into a body of about 200 insurgents. The Second Squadron in advance deployed across open fields, and advanced upon the enemy's position. G and H were met by a brisk fire, Corporal Winthrop Richardson (H) having his thigh bone shattered by a Remington bullet and Corporal Lorenzo de Clairmont (B) receiving a severe wound in the arm and breast. The latter was interpreter and stood directly behind Colonel Hayes.

Our volleys soon routed the insurgents, who, from their own statements, lost four killed and six wounded. The town of Sibul was reached at 3 P. M. On the outskirts the scouts found an abandoned cart with nine Mausers and some of Pilar's records and personal effects. At 8 P. M. Major W. D. Beach, Inspector on General Lawton's staff, sent up a powerful signal rocket, which we learned afterwards was seen and reported at San Isidro. Irregular skirmishing took place as we closed in on San Miguel next day. The First Squadron was sent forward to reconnoiter the city, but, learning that it was occupied, a detail under Lieutenant Dudley carried in dispatches and a request for an ambulance, while the rest returned to about the best camp we had while on campaign. Corporal Richardson's exposure brought on gangrene, and he died in the San Miguel hospital on the 13th.

Next day, December 12th, Colonel Hayes proceeded southward to carry out his instructions to destroy a reported camp of the insurgent general, Pilo del Pilar. Lieutenant

Arnold, with the regimental scouts, met with slight resistance in the advance, and just before noon reached the famous Biac-na-Bato, a natural, rocky stronghold. The garrison had fled, except a few men who were easily driven out. Leaving their horses, the detachment pushed well up the mountain trail, finding no enemy, but destroying a storehouse containing uniforms, tools and supplies. Major Morton organized a party of volunteers to explore the mountains and trails next morning. The party split up, and one small detachment, under Lieutenant Sievert, destroyed a dozen large shacks with timber floors, which probably were constructed for Pilar's camp. During the day Colonel Hayes received a message from General Lawton to return to San Miguel. After camping at the same place as on the night of the 11th, we reached the town on the morning of the 13th and received the news that the campaign was over, together with a congratulatory letter to the Colonel, enclosing a copy of General Lawton's report to Manila:

"SAN MIGUEL, December 13th.

"*Chief of Staff, Manila:*

"I have wired you to day report from Colonel Hayes, commanding Fourth Cavalry, just received, announcing the capture and occupation of the famous insurgent stronghold, Biac-na-Bato. From information furnished by residents of this city, it is learned that Biac-na-Bato, or "Split Rock," as the name indicates, is a gigantic cleft in the range forming a natural fortification, located South of Mount Madlom, Mount Mabio being higher and to the rear or east. There are no inhabitants except garrison; country rocky, no crops, plenty wood and water; was successfully held on January 8, 1897, by sixteen insurgents against nine hundred Spaniards. Again I feel it my duty to invite the attention of the general commanding to the gallant and effective work of this command. I heartily concur with Colonel Hayes in his commendation of Lieutenant Arnold; and I also wish again especially to commend Colonel Hayes as worthy of special and substantial consideration for faithful and gallant service in the presence of the enemy under unusually trying and difficult conditions. I have directed Biac-na-Bato to be held for the time being, until the surrounding country can be examined.

"LAWTON,
"*Major General.*"

At San Miguel the command was broken up. Colonel Hayes with Major Augur and Troops A, B and D, marched on the 17th to Baliuag, en route to Manila. Major Morton, with F, G and H, remained to garrison the towns of San Miguel, Norzagaray and San Rafael. At Baliuag the First Squadron was entertained by the hospitable Third Infantry, who set out the first fresh beef and bread we had seen for three months. Their bakers must have had "night shift" after we left. December 18th saw the squadron back in quarters at Pasay. The news that we were to move out January 3d with General Schwan's southern expedition, tended to make everybody get the full measure of enjoyment out of the short respite from field work, and troop commanders spent all the savings derived from the three months of half rations, on holiday dinners that are still talked about.

During the period in which the headquarters and the majority of the troops were under General Lawton in the north, Troops E and K were performing equally arduous work with General MacArthur along the railroad. In the advance on Tarlac, and subsequently on Dagupan, these two troops, together with a detachment of scouts under our Lieutenant Slavens, were always out in front and had frequent skirmishes with the enemy. At Porac, November 2d, Lieutenant Hawkins, commanding Troop E, led a mounted charge and earned praise for the work of his men, as well as mention for his own coolness and courage. At Magalang, November 5th, K Troop had two men severely wounded, Privates William Brett and John L. Jackson. In this spirited engagement, which lasted over three hours, the insurgents left eighteen dead on the field. At Bamban, November 9th, Lieutenant Hawkins and ten men of E Troop formed part of a party of nineteen, who, under General Bell, succeeded in arriving in rear of a trench containing one hundred insurgents. The party charged, and, without a single casualty, killed and wounded twenty-nine insurgents, and captured six. General MacArthur, in reporting the action, characterizes it as "a performance, so far as I know, as yet without parallel in this campaign, as illustrating a combination of skill, determination and audacity." At Capas, November 11th,

Private Thomas Stacker (K) was instantly killed, and on the same date, at Concepcion, E Troop had two horses killed. The two troops after continuous scouting, skirmishing and hard marches, settled down at Bayambang in December to patrol and scouting work from garrison.

About 2 o'clock on the morning of December 20th, Major Beach arrived at our barracks at Pasay with the appalling news of General Lawton's death. With his personal escort, Troop I, two squadrons of the Eleventh Volunteer Cavalry, one battalion each of the Twenty-seventh and Twenty-ninth Volunteer Infantry, and two guns of Taylor's battery, the General had marched all of the rainy night of December 18th, to the attack of the town of San Mateo. The swollen river caused considerable delay in crossing the troops next morning, under the fire of concealed insurgent sharpshooters. As usual, the General moved to the very front to direct movements. In his yellow rain-coat, he made a most conspicuous target, and his staff, impressed with the danger, urged him to seek cover. A few moments later he fell, shot through the heart. His body was removed, under guard, to the Pumping Station, and from that point to his home in Manila was escorted by the First Squadron of the regiment in which he had served eighteen honorable years. The Secretary of War, in publishing his death to the army, pays this tribute:

"He fell in the fullness of his powers, in the joy of conflict, in the consciousness of assured victory. He leaves to his comrades and his country the memory and the example of dauntless courage, of unsparing devotion to duty, of manly character, and of high qualities of command which inspired his troops with his own indomitable spirit."

Henry Ware Lawton is one more name added to the list from which the Fourth Cavalry draws its regimental motto:

"*Decessorum Virtutem Aemulemur.*"

FROM TEXAS TO DAKOTA.

THE EIGHTH CAVALRY'S LONG MARCH.

By Captain F. E. PHELPS, (Eighth Cavalry), Retired.

IN the spring of 1888 the Eighth Cavalry was stationed in Texas, and the different troops were scattered from Fort Brown, near the mouth of the Rio Grande, to Fort Hancock near El Paso, the regimental headquarters and five troops being at Fort Davis. The regiment had come down from New Mexico in the fall of 1876 and the spring of 1877, and had been more or less actively engaged in scouting, patrolling the Rio Grande, and other similar duties, for eleven years.

The regiment had never been assembled. Officers who had served for years in the regiment had never met; some had never seen the Colonel, although he had been in command several years. When the troops concentrated at Fort Concho, the writer met for the first time the then accomplished regimental adjutant, although the latter had been in the regiment for six years, and renewed acquaintance with others whom he had not seen for eleven years. The result of this scattering process was not beneficial to the discipline and morale of either officers or men. Serving at widely different posts, under different post commanders, who sometimes had widely divergent views as to discipline, drill, equipment, care of men and of horses, officers naturally differed on many points, and this made more or less friction, which must have caused the regimental commander some worry and made his task a much harder one.

Neither did we expect the order to move. For eight or more years it had been periodically rumored that we were going to Dakota this year; we were going next year; we got to looking for this rumor like the vernal equinoxes; we were

EIGHTH CAVALRY OFFICERS ON THE MARCH FROM TEXAS TO DAKOTA. MAY TO OCTOBER, 1888.

going by rail, leaving the horses behind to exchange with the Seventh Cavalry then in Dakota; some brashly announced we should march, and were jeered at by the wiseacres.

The captain of F, then at Fort Davis, desired to put in a troop garden, but naturally wanted to know if he should stay there long enough to gather his crop; and accordingly wrote a personal letter to a former captain of the regiment, then a major in the Inspector General's office at Washington, to see if there was any likelihood of a move; in reply the Inspector informed him that he had gone to the Adjutant General's office, and had been authorized to say that the regiment would not be ordered to Dakota or anywhere else that year, and that he could go ahead with safety; and yet, in less than ninety days the order came out like a thunder clap from a clear sky, directing the move to begin about the middle of May by marching; all heavy baggage and the authorized allowance for officers to go by rail.

A change in the station of the regiment to so great a distance fell with severity, from a financial point of view, on the married officers and soldiers. At that time the authorized allowance of baggage for officers was much smaller than now, and for a lieutenant would about cover one bedroom set, a few boxes or chests of bed clothing and wearing apparel, a barrel of crockery and a few folding chairs.

At Fort Davis the only lumber for crating to be had was "pitch pine," which is about as heavy as lead, and, as the weight of the crates was counted in, the amount of furniture that could be transported was small. The railroad put a prohibitive rate on anything shipped outside of the government bill of lading, and hence many officers had to abandon some of their household goods.

One officer found the freight on his wife's sewing machine, crated, would be about as much as a new machine would cost, and, owing to the fact that the post was to be abandoned, there was absolutely no sale for it, so he smashed it with an axe rather than to leave it for some Mexican. Another sold a couch that cost him $25.00 for $2.00, while a field officer abandoned a fine black-walnut bedroom set. One young officer, who had a very handsome and valuable lot of silverware, mostly wedding presents, forgot to enter his silver chest on his bill of lading, and when he arrived at Fort Sill he found a letter from the railroad agent at Marfa, saying that said box was not on any bill of lading, but, as it bore his initials, he had put it in with the troop baggage, and hoped it would go through safely; but that, of course, the railroad could not be held responsible if it was lost. The amount of worry the young man went through before he arrived at his new post in Dakota and found the chest safe, he will never forget, and when he reads this, he will doubtless remember the comforting suggestions made to him by his troop commander, how he could explain to his better-half in case the silver was lost.

Trusting to the positive assurances that the regiment would not move, officers brought their families out to Texas and had to hustle them back again at heavy expense, and board them in the East until "papa got to his station." This caused unholy glee upon the part of the unmarried, but caused a severe financial strain on the lieutenant's pay, much of which would have been spared if, as now, several months' notice had been given before a change of any great distance was made.

The colonel, E. S. Otis, was an invalid and did not march with the regiment; and the Headquarters, Band and Troops A, C, D, F, H, together with L which had come down from Fort Hancock, all under command of Major John A. Wilcox, moved out on the 15th of May, en route to Fort Concho, which post had been designated as the point of concentration.

The lack of experience in marching even five troops together was impressed upon us, when we entered the cañon only six miles from Fort Davis. The road leads down a rough, rocky hill, much of it cut on the hill-side, here thickly covered with loose rocks and cactus. The wagon train, two wagons to each troop, and two to headquarters, carrying rations and grain, had been sent ahead, and was overtaken by the column just as it started down the hill. Instead of either halting the train or the column, the troops were pushed past

on the hillside, causing much confusion, casting many shoes, and unnecessarily tiring both men and horses.

There was no order for camping, each troop squatted down where the captain chose, so long as it did not pass the troop in advance of it, stretched its picket line, put one sentry over it, and everybody went to sleep, except the sentry. The camp was made in the narrow part of the cañon, thickly underbrushed, and the troops were all huddled together; and there was little or no grass, while by going ahead a couple of miles, there was a broad, level flat, and plenty of wood, water and grass. No pickets or outside sentries were posted, and it may be remarked now, that during the entire march from Texas to Dakota, there never was any guard except the sentry over the picket lines. Owing to the quietness of the Indians that spring, perhaps guards were unnecessary; but certainly a fine opportunity for the instruction of guard, pickets, and patrols was lost.

Before leaving Fort Davis, Troop F devised a plan by which they could be sure of having rations and cooking utensils promptly in camp, without relying on the quartermaster's train. Each enlisted man contributed one dollar, each officer five dollars, and with this a light, strong spring wagon and harness were bought. Two spare troop horses were used, driven by an old soldier who was waiting his transfer to the Soldiers' Home, and was good for nothing else owing to age, whiskey and rheumatism; and in this wagon was carried the troop mess-chest containing two days' rations, the cooking utensils, and a small mess-chest for the officers.

This wagon followed closely after the troop, and being light and lightly loaded, had no trouble in arriving in camp as soon as the troop, thereby giving them their supper at once. Often the troop had their meal and were asleep hours before the heavily loaded six-mule wagons came up. On several occasions some of the troop wagons did not get into camp at all until next morning. On arrival at the permanent station, Fort Yates, the wagon was disposed of, and the proceeds presented to the troop fund.

The march to Fort Concho was exceedingly hot, dusty and uncomfortable. The marches were long, owing to lack

of water; there was little grass, the men and horses were not hardened to the work; no attention was paid by the commanding officer to the gait of the leading troop, or to the protection of the water holes on arriving in camp; mules and horses waded, and dogs wallowed in the water, before the supply for cooking had been secured, and there was a general "go as you please style" about the march that was hardly excusable. Another thing that caused great discomfort was the fact that the commanding officer rode a horse that had a very fast walk, and, no doubt without his knowledge, kept the troops sometimes for miles on a jog-trot to keep up.

No disposition of disabled horses was ordered, and instead of being shot they were abandoned, many of them being picked up by Mexicans, turned into the nearest military post, and the reward of twenty-five dollars per head was paid for broken-down animals that would not, and actually did not, bring that much at auction, when condemned. Many of the horses were old and unfit for service when the regiment started, and should have been disposed of at once. Troop F abandoned three the second day out, all of which were taken to Fort Davis by a Mexican; and the reward was collected.

Finally the entire regiment was, for the first time in its history, together and at Fort Concho, and the final orders for the long march were given out. Lieutenant-Colonel J. K. Mizner assumed command, and his orders were short and sensible.

No copy of the order issued is at hand, but substantially it was as follows:

The regiment was divided into three battalions of four troops each, to be commanded respectively by Major J. A. Wilcox, Major R. F. Bernard and Captain Louis T. Morris.

To headquarters was assigned two six-mule wagons, one to the band and two to each troop. The wagons were to carry ten days' grain and ten days' rations, besides the tentage, etc. One tent was to be carried for each field-officer, one for each captain, and one for each two lieutenants, with one common tent to each mess for a cook tent. One Sibley

tent for each eighteen men was provided. All officers' baggage was limited to one small trunk and a roll of bedding. No cots or mattresses were allowed. This last was not enforced, the commanding officer himself setting the example by taking a cot; and most of the officers, if not all, did the same.

Each enlisted man was to carry his carbine and sling, prairie belt and twenty rounds of ball cartridges on his person, and lariat, picket-pin, tin cup, canteen and nosebag on his saddle. In his saddle-bags he carried one change of underclothing. His blanket roll was carried in the wagon. Each troop also carried one thousand ball cartridges in the troop wagon, but as this was generally, if not always, placed in the bottom of the wagon, covered with tents and rations, or forage, it could not have been gotten at easily had necessity required it. All men's sabers and pistols were packed and shipped by rail. Officers carried sabers strapped to the saddle, and each first sergeant carried his pistol. The men were to wear blue shirts and trousers, blouses, boots and campaign hats; officers the same. Troop commanders were allowed, if they saw fit, to provide their men with raincoats or slickers. Several troops purchased what was known as the "Fish brand" slicker, which is of a yellow color, light and durable, and which covered the wearer and his saddle down to below his boot tops, and proved to be an almost perfect protection in the heavy rains that fell during the march, sometimes lasting all day.

The order directed that reveille should habitually be sounded at 5 o'clock, boots-and-saddles at 6, and the march begin at 6:10; and this was almost invariably closely adhered to.

The habitual order of march was as follows: First, the commanding officer and staff, followed by the band mounted. Next came the battalions, which alternated daily, and in each battalion the troops alternated daily, so that in turn each troop led its battalion and the regiment. The distance between battalions was habitually three hundred yards, and between troops one hundred yards, and this was fairly well kept, though some troop commanders were careless about

keeping the distance, thereby getting the benefit of the dust from the preceding troop; and this dust, especially in the narrow lanes of Kansas, which were sometimes lined on both sides by tall osage orange hedges, was very disagreeable. Straggling was strictly prohibited, and the entire march was singularly free from this vice. The shipping by rail of sabers and pistols was particularly welcome, and experience showed that the articles carried were all necessary. Side-lining was to be rigidly enforced, and, as a consequence, not a stampede of horses occurred.

The officer of the day was detailed from the captains, the officer of the herd from the first lieutenants, and the officer of the guard from the second lieutenants. The officer of the herd saw that the horses of each troop were taken to the best grass, within easy distance; that the horses were properly side-lined and guards vigilant. Not only was there no stampede, but it is believed not a horse was lost on the entire march by theft or straying, which, in view of the numerous desertions en route, shows that guard and herd duties were well performed.

Lieutenant J. C. Byron was sent ahead as engineer officer to select camps and procure wood, hay, and, when necessary, to buy water and rent camp sites.

As a rule the farmers along the road seemed to look upon the arrival of the regiment as a fine chance to make money, and it was nothing unusual for the quartermaster to have to pay ten to fifteen dollars for the privilege of watering the stock, if the water happened to be on private property, or, if as sometimes occurred, the men had to get drinking and cooking water from wells. As a rule, camping sites had to be hired for the night, and outrageous prices were sometimes demanded, and the amount to be paid had to be fixed by a board of officers.

Fresh beef was, when possible, purchased daily, and this was so successfully done that no complaint could be fairly made of a lack of good meat on the entire march.

From Fort Davis to Fort Concho the band was mounted on horses borrowed from the troops at Fort Davis, and naturally enough, perhaps, the troop commanders did not loan

the best or easiest-gaited horses, and for several days the band afforded much amusement to everyone; but they soon became hardened to the saddle, and before Fort Concho was reached, they got along as well as the average trooper. At Fort Concho, they received new horses, and as they led the regiment through the town of San Angela playing, of course, "The Girl I Left Behind Me," they looked well; and from that time the laughing at the band ceased. Guard-mount was always held in the evening, the band attending, and in good weather they gave a concert at night. They certainly worked hard, and probably never knew how much their music was appreciated.

The staff consisted of the adjutant, First Lieutenant Chas. M. O'Connor, whose efficiency, good nature and hard, common sense smoothed over many difficulties, and won the esteem of every officer and man. The quartermaster was that combination of sizzling energy, indomitable pluck, red-hot hair and temper, that made First Lieutenant Q. O'M. Gillmore, the very man for the place. No officer nor man worked so hard, none could have been so successful, and none received less credit—at least at the time.

At times, especially between old Fort Kearney and Fort Sidney, the roads were frightful, and it is a wonder the train got into camp as often as it did.

The Medical Department was represented by Captain and Assistant Surgeon Guy S. Edie. Not a death occurred on the march, and the health of the command was good, due largely to his care and precaution.

On June 2d the regiment moved out from Fort Concho, and took the Long Trail for the Dakotas. It is not within the scope of this article to describe the daily marches. July 16th the column reached Fort Riley, Kansas, where we met the Seventh Cavalry and enjoyed their royal—no, their American Army hospitality for three or four days. We exchanged transportation with the Seventh. Ours consisted entirely of government six-mule teams, except one ambulance, and was in good shape. The transportation we received from the Seventh was partly of the same kind, but mostly consisted of hired civilian four-horse teams and

wagons, and these were in a miserable condition. Time and again they broke down, or failed to get into camp before dark, despite the herculean and profane efforts of the quartermaster and his wagonmaster, and at least once, at Willow Island, we had to delay three days to rest them up. The annoyance and discomfort they caused, was the worst feature of the march from Fort Riley to Fort Meade.

As on the arrival at Fort Riley, the march was practically half finished, it should have been easy to see the weaknesses that existed and the faults that could have been corrected—and were not. One thing was conspicuous—the splendid conduct of the men. It was to be expected that on a long march, extending now over nine hundred miles, partly through a country thickly dotted with towns and villages, some disorders would occur, and more or less drinking and straggling be seen; but in this respect it was matter of congratulation that the conduct of the enlisted men was beyond praise Kansas was supposed to be a prohibition State, but it was notorious that beer and whiskey could be had in every one of these towns; and while a few cases of drunkenness did occur, there was not a single complaint of rioting, disorder, or assault.

That this good discipline was almost entirely due to the careful personal supervision of the troop officers and noncommissioned officers is undeniable. If the battalion commanders took any special interest in the matter, it was not noticeable. In fact, the battalion commanders were simply figureheads, and we could have dispensed with them without detriment. It is not intended as a reflection on them personally—two have gone to the other shore—but it is believed it was due to the fact that they had no special authority or special orders. Except at the muster of June 30th and of August 31st there was not an inspection of men, horses or equipment made by the regimental or battalion commanders, and the writer, who commanded his troop from the second day out from Fort Riley to Fort Meade, cannot recall an instance when the battalion commander gave him an order, or evinced the slightest interest in his troop. The regimental commander should have noted and corrected this.

The regimental commander also had a habit of giving the trot for the last mile or two of the day's march, which was very hard on men and horses, and did no possible good, but harm, especially at the end of a long and tiresome day's journey. During the day, alternate walking and trotting would have been desirable, but was not given.

There was no great hurry and there was no reason why the regiment should not have lain over every Sunday to rest and recuperate, to allow the men to bathe and wash their underclothing, etc.; but this was never done.

The regimental commander was fond of regimental drill while on the march, generally as we approached camp. When officers, men and horses were tired, dusty, thirsty and anxious to get into camp, drilling was worse than useless, and certainly did no good

We, of course, did not know what orders, or exactly what authority, the battalion commanders had, but anyone acquainted with them would believe that, if they had had proper orders to inspect the troops under them, to supervise the fitting of saddles, the care of sick horses, the grazing of the herds, and similar matters, they would have attended to them.

The large number of sore-back horses was due primarily to the careless fitting of saddles, and, possibly, to improper folding of the saddle blanket, but largely to the gross carelessness and inattention of the riders, to whom, in this respect, too little attention was paid by troop commanders. Once or twice the commanding officer ordered men who had sore-back horses to walk and lead them; but this was spasmodic, and only lasted two or three days.

At last all was ready, and the regiment moved out on its long march for the Dakotas. The line of march was via Springfield, Kansas, and Hardy, Nebraska, to old Fort Kearney, where we had one day's rest; then west along the Union Pacific Railroad to Fort Sidney. This was probably the hardest part of the march. Rain fell almost continuously, the black soil of the prairies was cut up into unfathomable mud, the road which closely followed the railroad had probably been little used and never repaired, and, taking it

altogether, the progress made was better than could have been expected.

We lay over one day at Fort Sidney, and then struck out almost due north for the Black Hills. It was now September, the days only pleasantly warm, the nights cold and crisp; on September 3d, we arrived at our Mecca, Fort Meade, Dakota Territory, and our journey was practically finished.

The headquarters and six troops remained here, while two troops went to Fort Yates, Dakota, two to Fort Keogh, Montana, and two to Fort Buford, Dakota. The total distance from Fort Concho to Fort Meade was 1,470 miles, taking eighty two marching days—an average of about eighteen miles per marching day.

One day was spent at Fort Sill, one at Fort Reno, four at Fort Riley, one at Fort Kearney, one at Fort Sidney, four at Willow Island and one at Fort Robinson.

The troops that went on had tiresome marches yet to make—the two that went to Fort Yates two hundred and twelve miles: those to Fort Keogh about the same, while all are entitled to credit for the additional distances from their respective posts in Texas to Fort Concho. Troop E marched from Eagle Pass, Texas, to Fort Buford, about 2,400 miles.

So far as known, this was the longest continuous march ever made by a regiment in this country, and perhaps in any other.

What the object of the "powers that be" was in requiring us to march instead of going by rail, has always been a mystery. It was rumored that it was to test the marching powers of men and horses, and if this were true, it certainly did, much to their detriment. It is impracticable now to say how many horses died or were abandoned en route, but the number was large, and at the average cost price then, $130.00 each, this item of expense must have been heavy; and adding the cost of delivering rations, purchasing forage, wood and water, loss of equipment, wear and tear of wagons, hire of civilian wagons, it is believed the entire regiment could have been transferred by rail very much cheaper; not taking into consideration the men lost by desertion, many of whom

deserted from fatigue and disgust alone, and the loss of some officers and some men, who broke down from the fatigues of the march, and had to quit the army.

If it was for experience, we certainly got it, and it gave us something to talk about for some years; and many a lurid yarn, spun for the edification of the youngster just escaped from West Point, began "When we were marching from Texas to Dakota ——."

That the march resulted in any practical good is difficult to see. It was a heavy expense to the Government, a heavy expense to the officers and married soldiers, some of whom had to leave their families for months in Texas, before they could save enough money to bring them North; it wore out the patience of all; it produced no decided impression on the regiment, save of relief when it was over.

The conduct of officers and men was admirable. The good humor under adverse circumstances was remarkable; and while some had their nerves strained to the breaking point, and one or two literally fell out of the saddle and had to be retired, all tried to make the best of it.

One hesitates to criticise a brother officer who is no longer in harness, or this more or less critical account might have beeen made much more pointed. To err is human, and no doubt if those high in authority had had to do it over again, matters would have been different.

This paper cannot be closed without expressing the opinion that the commanding officer of the regiment did the best he could under adverse circumstances. His kindness, cordiality, unvarying good nature, and the encouragement he constantly held out, certainly helped to make matters easier than they otherwise would have been.

Of those who made part, or all, of the march, only five officers now are in the regiment: Captains Slocum, Flynn, Duff, Sayre and Evans, and eight enlisted men. Others have, by promotion, been transferred to other regiments; some have been laid on the shelf to rust, while to others have come the last bugle call; "taps" have mournfully wailed over the soldierly forms of Mizner, Bernard, Morris,

Weeks, Sprole and Williams, who have all gone to report to "The Great Commander."

The Spanish War, service in Cuba and the Philippines, have given the loungers in the Officers' Club other subjects to discuss, and the great march of the Eighth Cavalry in 1888 has been relegated to the official records, and, perhaps, is only remembered often by the few still living, who have hung up the saber and the spurs, and doffed the uniform for sober civilian attire, but who, all the same, when the army paper comes, turn first of all to the column showing the changes in "The Old Regiment." There their hearts still are; there memory loves to linger; and they fondly hope that the comrades of olden days still remember them.

THE FIRST ACT OF THE LAST SIOUX CAMPAIGN.

By Captain PETER E. TRAUB, Thirteenth Cavalry.

THERE is a little bit of unwritten history that may well serve as a prelude to the capture and death of Sitting Bull. This prelude we shall name "Buffalo Bill's unsuccessful attempt to arrest Sitting Bull."

In the fall of 1890, it was the design of the division commander, Major General Nelson A. Miles, to anticipate the movements of the hostile Indians, and arrest or overpower them in detail before they had time to concentrate in one large body. In pursuance of this design, it was deemed advisable to secure, if possible, the principal leaders and organizers, namely, Sitting Bull, Hump, Big Foot, Short Bull, Kicking Bear, and others, located on the various Sioux reservations, and remove them for a time from that country.

On November 25, 1890, General Miles gave to William F. Cody authority to proceed to Standing Rock Agency, and to induce Sitting Bull to come with him, making such terms as he (Cody) might deem necessary. If unsuccessful in this, Cody was authorized to arrest Bull quietly, and remove him quickly from his camp on Grand River to the nearest military station, Fort Yates. In his report of the affair General Miles says: "He proceeded to Fort Yates, on the Standing Rock Reservation, and received from Lieutenant Colonel Drum the necessary assistance, but his mission was either suspected or made known to the friends of Sitting Bull, who deceived him (Cody) as to Sitting Bull's whereabouts."

Let us see the why and wherefore of Buffalo Bill's failure.

In November, 1890, General Ruger was ordered by the President to make a personal investigation of the actual condition of things among the Sioux. While at Standing Rock

Agency he was informed by Indian Agent James McLaughlin that it was practicable and advisable to have the actual arrest of Sitting Bull and other disaffected leaders on that reservation made by the Indian police, both for the certainty of their capture, and for the beneficial effects that would result in strengthening the authority of the agent and establishing the proper position of the Indian police. The Indian police might possibly make the capture without bloodshed or much excitement among the Indians. Sitting Bull's men were, moreover, constantly hanging about the agency, ostensibly to have wagons repaired or for some other purpose, but really to keep him informed. This, in connection with the fact that Sitting Bull lived forty miles from the post, and that an Indian on a fleet horse would reach him before a troop of cavalry could possibly get there, decided the authorities in favor of having the actual arrest made by the Indian police.

While Colonel Drum, commanding Fort Yates at Standing Rock, and Agent McLaughlin were making plans for the capture of Sitting Bull, and perfecting the details for carrying them into execution the moment the orders came, William F. Cody, commonly known as Buffalo Bill, appeared at Fort Yates with the authority of the division commander to make the attempt to bring in Sitting Bull, either peaceably or by force, and for this purpose the commanding officer was directed to furnish transportation and a few trusty men.

This was on November 27th: it produced consternation on the part of Drum and McLaughlin. The probability was much against the success of this expedition. Failure meant the escape of Sitting Bull and his following; their flight to Pine Ridge and the presence of the leader of the Sioux malcontents amongst the disaffected element in the Bad Lands along White River: the beginning of actual hostilities before the troops were in position around Pine Ridge; the probable destruction of property, looting of homes of settlers, and perhaps all the attendant horrors of Indian warfare—murder, rapine and mutilation. But Drum and McLaughlin were the right men in the right place. The former at once telegraphed the gravity of the situation to General Ruger.

desiring, above all, to know whether the order was by proper authority. General Ruger was very much surprised, as it was the first he had heard of the subject, the orders to Cody never having been transmitted to him. He at once telegraphed to Washington, through proper military channels, throwing the great weight of his experience and highly respected opinion against any such attempt at that time. McLaughlin telegraphed to the Secretary of the Interior in the most emphatic terms, and we will leave their telegrams speeding towards Washington, and return to Fort Yates.

By hook or by crook Buffalo Bill must not be permitted to start on his errand. He must be detained until replies come back to McLaughlin's and Drum's telegrams. Stratagem, trickery, if you please, had to be resorted to, but the end justified the means. Bill was induced by the hospitality of the officers to stay at Fort Yates all that day; but great was everybody's surprise to see him emerge from his host's quarters next morning smiling and happy, asking for his transportation, all ready for the start to Sitting Bull's camp. He could not be further dissuaded, and so set out for Grand River, the home of Sitting Bull, forty miles away.

This aspect of the case had been conceived of by both Drum and McLaughlin, and, as a last resort, they had thought of a device that acted like a charm. Its development will be seen as the story progresses. Bill proceeded to Oak Creek, about twenty miles. Here coming along the road toward the agency, he met Louis Primeau, an Indian scout and interpreter at Standing Rock Agency, upon whom McLaughlin had counted in thwarting Buffalo Bill's attempt. Primeau and Bill were well acquainted, and the former was questioned as to Sitting Bull's camp and his whereabouts. Primeau replied that Bull had had a dance Friday night, and had said he intended going to Standing Rock that very next day to see his old friend, Agent McLaughlin; that Buffalo Bill must have missed him on account of Bull's having taken the north road to the agency instead of the south one. To make doubly sure, he advised Bill to cut across country to the north road, and in case wagon tracks were seen going towards the agency, they were made by Bull, thither bound. This the party did,

and by proper manipulation wagon tracks were seen leading to Standing Rock, and Buffalo Bill turned back from Grand River, where Sitting Bull was probably at that moment haranguing his followers.

In the meantime, Colonel Drum had been very anxiously awaiting orders from superior authority. He kept Indian couriers at the adjutant's office, ready to leave at a moment's notice to overtake Cody. The message finally came, and that there should be no mistake, Indian couriers were sent over both the north and south roads; but it so happened that while they were passing in the vicinity of Oak Creek, Buffalo Bill was cutting across country between the two roads so as to strike the north road. The Indian scouts, therefore, on both roads missed him, and they went on towards Sitting Bull's camp with great care, and found everything quiet, Sitting Bull there, and no Cody on either road; and those scouts wondered.

Colonel Drum was a little alarmed at not hearing from the scouts by evening, and sent out two more on each road with copies of the President's dispatch; for it appears that the Secretary of the Interior and the Secretary of War went to Mr. Harrison in the middle of the night, and, with his own hand, the President wrote the dispatch that William F. Cody, known as Buffalo Bill, should not attempt the arrest of Sitting Bull, or any other Indian whatsoever, and that he should leave the Indian reservation at once. The second courier on the north road found Cody in camp, about five miles out from Fort Yates. The message was delivered, and Cody wrote in pencil the following:

"The President's orders have been received and will be obeyed. I leave to-night.

(Signed) "WILLIAM F. CODY."

The next morning (November 30th) at 9 o'clock he left for Mandan. Colonel Drum and Mr. McLaughlin had thus, by foresight, ingenuity and prudence, avoided the danger of the possibility of an unsuccessful attempt to capture the wily chieftain, Sitting Bull, who was so soon destined to pitch his lodge in the happy hunting grounds.

CAPTURE AND DEATH OF SITTING BULL.

Sitting Bull was the acknowledged leader of the hostile element when the Sioux were at war. In order to remove him from the scene of trouble, orders were given on December 10th by General Miles, through General Ruger, to Colonel William F. Drum, commanding at Fort Yates: "Make it your special duty to secure the person of Sitting Bull. Call on the agent to coöperate and render such assistance as will best promote the purpose in view."

For reasons before stated, it was decided to make the arrest by Indian police, these to be supported by troops with orders to prevent a rescue, and, if necessary, protect the police. December 19th or 20th was agreed upon as the day to make the attempt, for then most of the Indians would be at the Agency for the issue of rations, and it was presumed that Sitting Bull would not come to the Agency, as he had not been there on the preceding ration day, but would remain at his home on Grand River. However, trustworthy information was received on the evening of Sunday, December 14th, that Sitting Bull was preparing to leave the reservation to join the hostiles at Pine Ridge, and it became necessary that there should be no delay in making the arrest. The number of Indian police about Bull's camp had been materially increased, under pretence of getting out logs for a building on Oak Creek, but in reality to watch his movements, and to become so acquainted with his camp, his house, and the surroundings, that even in the middle of the night they could effect his capture and removal.

Everything being ready, as soon as it was dark, orders written in Sioux and English were sent by two reliable Indians, to be read to Bull Head, the lieutenant of police, by an agency school teacher in that neighborhood. The order specified that Sitting Bull was to be arrested before daylight on the morning of the 15th, and brought to the agency, and that troops would be within reach in case a rescue was attempted. Later in the evening, orders were issued for Troops F (Slocum) and G (Crowder), Eighth Cavalry, six officers and a hundred enlisted men, Captain Fechét, Eighth Cavalry, commanding, to march at 12 o'clock that night in the direction of Sitting Bull's settlement, for the purpose of preventing rescue, and, if necessary, to assist the police. It was the understanding that the police would send a courier to Oak Creek to inform the troops of the situation of affairs as soon as the arrest was made.

Although entrusted to Indians, all the details were perfectly executed. Up to 2 A. M. the 15th, a "ghost dance" and feast had been in progress at Sitting Bull's camp, and being tired out, the usual sentries around Sitting Bull's shack had fallen asleep. Not until the Indian lieutenant of police, Bull Head, placed his hand on the sleeping chief's shoulder at 5:30 A. M., had the latter any idea of going to the agency. He at once arose and remonstrated with the police. There was a slight delay in giving him time to dress. Sitting Bull's wives were quartered in a separate lodge, but in his own shack there slept Crow Foot, a deaf and dumb son of the old chief; between these two there existed the greatest intimacy. When the boy saw what was happening, he strained to the utmost the flaccid muscles of his throat and larynx, causing that unearthly sound, not loud yet disturbing. It was frequently repeated before the police gagged him; but unfortunately it had been heard by Catch-the-Bear, who emerged from his tepee just as Sitting Bull was being led away captive between Lieutenant Bull Head and Sergeant Shave Head. Sitting Bull called upon his followers to rescue him from the police, saying that if the two principal men were killed the rest would run away. Thereupon Catch-the-Bear fired, hitting and breaking Lieutenant Bull Head's thigh bone. As he was falling to the ground, Bull Head placed his pistol against Sitting Bull's side and fired, killing him. At least seventy-five warriors then attacked the forty Indian police, who, however, got possession of the shack and stable adjoining. The fight was hot, and volunteers were called for to carry a report of the situation back to the approaching troops. Hawk Man offered to perform this perilous mission, and at the imminent risk of his life, he slipped through the encircling hostiles, and carried the

news to Fechét, whom he met some three miles from Grand River.

In addition to his two troops of cavalry, Fechét had a Hotchkiss and a Gatling gun, under charge of Lieutenant E. C. Brooks, Eighth Cavalry. Throwing out a line of skirmishers, he disposed his troops in column of fours, an interval of three hundred yards between heads of columns, artillery between the heads, and advanced to the bluffs about 1,500 yards from Sitting Bull's house. About nine hundred yards to his right front, on a knoll, was a party of about fifty Indians. Beyond the house in the brush were more Indians. Shots were being exchanged. Fechét directed the Hotchkiss to be fired into this brush.

The effect was electrical; Indians began to scamper from the brush and retire across the river; a white flag was displayed by the beleaguered police from Sitting Bull's shack. The Hotchkiss was next trained upon the group on the knoll, and they dispersed, fleeing up the river. F Troop dismounted, advanced in skirmish line to and beyond the house. Crowder, with G Troop, mounted, protected the right flank and followed the retiring Indians up Grand River for two miles, when he was recalled. The skirmish line went about 600 yards beyond the house, clearing the brush, and then returned, leaving pickets at the farthest points.

When the troops came up the Indian police filed out of the shacks and formed company front, and reported the absentees, four killed, two mortally wounded, one badly wounded; but there was sufficient evidence of the noble defense they had made. Eight dead hostiles, including Sitting Bull, three wounded, and two relations of Sitting Bull, prisoners.

Captain Fechét's orders were explicit and did not include a pursuit of Sitting Bull's band, which would have resulted in unnecessarily frightening peaceful Indians. Accordingly the command moved back to Oak Creek, and couriers and runners were sent in all directions reassuring the peaceably inclined and urging all others to remain on the reservation

and come in to the agency, as that was the only safe place for them.

Over 400 Sitting Bull Indians, men, women and children, fled south to the Cheyenne River reservation. Of these, 160 surrendered in a few days to Agent McLaughlin, at Standing Rock, and eighty-eight others, who had reached the Moreau River, returned and surrendered to him within two weeks. Of the remainder, twenty joined the hostiles at Pine Ridge, thirty-eight joined Big-Foot's band on Cheyenne River, and 166 surrendered to Captain Hirst and Lieutenant Hale at the mouth of Cherry Creek. Thus ended the first act of the campaign, and peace was restored on Standing Rock Reservation.

THE SANTIAGO CAMPAIGN OF 1898.

By Lieutenant Commander W. L. RODGERS, U. S. Navy.

[Lieutenant Commander Rodgers delivered a series of very interesting and instructive lectures to the classes at the Infantry and Cavalry School and Staff College on the "Influence of the Navy Upon Land Operations." The following is an extract from the last of these lectures. As it shows certain phases of the Santiago campaign not generally understood by the Army, it will be read with much interest by army officers, especially those who participated in the campaign.—Editor.]

WE now take up the campaign of Santiago in the Spanish War in 1898. This campaign is selected to contrast with the Mississippi campaign, for the reason that in the Spanish War the Army was strategically subordinate to the Navy, thus reversing the relations of the two services on the Mississippi.

THE PLANS CONSIDERED BY THE ADMINISTRATION.

The declaration of war against Spain was made for the object of delivering Cuba from Spanish occupation, and Cuba was necessarily the principal theatre of operations. The Spanish army of occupation could be brought to terms either by starving it into surrender by a blockade of the island, which was already devastated and disordered, or a field army could be thrown into the island to attack the Spaniards.

The first plan was not seriously considered, not only because the U. S. Navy was not thought strong enough to surround the entire island with a close blockade, but also because the inhabitants of the island would suffer with the Spaniards.

The second plan was favorably viewed, and the administration wished to put 70,000 men ashore in Cuba near Havana to oppose the Spanish army in the western part of the

island, and it was expected that the operations of this army would be the principal feature of the war. As such an army did not exist at the outbreak of the war it was necessary to recruit and organize it.

Success, however, would strongly incline to that one of the two combatants who should preserve his communications with home. As Cuba is an island and the sea is the only means of communication, it was impossible for the United States to think of launching an army against the principal Spanish position about Havana until a decisive naval battle should enable the army to embark without any anxiety for the subsequent security of communications. Accordingly the news of the departure of Cervera's squadron for the West Indies was welcome to the administration, as it hastened the solution of the problem by bringing the Spanish fleet, an essential factor in the situation, within the theatre of operations.

Thus the administration's plan at the outbreak of war was to attack the Spanish army in Cuba as soon as the American army could be mobilized in adequate force. It was not expected that the navy's action upon communications would prove decisive by itself.

THE UNITED STATES GOVERNMENT ATTEMPTS TO CUT THE SPANISH LINE OF COMMUNICATION BY THE DESTRUCTION OF THE SPANISH FLEET.

When reports reached Washington that Cervera had entered Santiago de Cuba it was the immediate wish of the Navy Department to verify the news, and then retain him under observation until a sufficient force could be assembled to destroy him. Although the defenses of Santiago were far from strong, yet the guns and mines offered proper support to each other, besides having the Spanish fleet in reserve, so that were the navy to attempt to force its way in alone it would very possibly lose a ship or two. In the threatening condition of the relations of the United States with continental Europe, it was impossible for the administration to contemplate with equanimity even the smallest

reduction in our naval force, and imperative orders were sent to Admiral Sampson not to take undue risks against forts.

For these reasons it was arranged by the War and Navy Departments, at the suggestion of the latter, that as soon as the navy should blockade the Spanish fleet, a sufficient force of troops should be sent to aid the navy in opening the harbor preliminary to attacking the Spanish fleet.

On the 27th of May the Navy Department informed the War Department that it expected soon to be able to call for the army to move. On May 29th a sufficient force arrived before Santiago to make the blockade effective, and the same day it verified the presence of the Spanish fleet within, and reported the facts to Washington by cable from Hayti. On May 31st General Shafter was directed to move his army corps to Santiago in the following terms:

"* * * You are directed to take your command on transports, proceed under convoy of the navy to the vicinity of Santiago de Cuba, land your force at such place east or west of that point as your judgment may dictate, under the protection of the navy, and move it on to the high ground and bluffs overlooking the harbor or into the interior, as shall best enable you to capture or destroy the garrison there, and cover the navy as it sends its men in small boats to remove torpedoes, or with the aid of the navy capture or destroy the Spanish fleet, now reported to be in Santiago. * * You will coöperate most earnestly with the naval forces in every way, agreeing beforehand upon a code of signals. Communicate your instructions to Admiral Sampson and Commodore Schley."

If each clause in the first and principal sentence of this order is duly weighed, it becomes apparent that it was the intention of the War Department to prescribe a movement for the capture of the garrisons of the harbor forts for the purpose, as the order explains, of covering the navy in its work of clearing the channel by its small boats. As an omnibus clause, indicating the scope of the entire campaign, the sentence concludes with the general direction, "with the aid of the navy, capture or destroy the Spanish fleet." Unfortunately there exists a verbal ambiguity in the construction of the sentence (very possibly due to a desire to facilitate the enciphering) and this ambiguity, if the clause referring to covering the small boats of the navy be not fully appreciated, might allow the recipient to regard as his objective the garrison of Santiago.

It is thus seen that the administration was not contemplating the military expedition to Santiago as a substitute for the great enterprise against Havana, which it had debated a month earlier. It was not even a diversion in favor of the Santiago campaign. On the contrary, the expedition to Santiago was intended as, and expected to be, solely an auxiliary to the naval campaign, which was seen to be a necessary preliminary to any field operations against Havana.

How correctly the administration viewed the situation, as one governed by the question of sea communication, is apparent when we recollect that the report of a Spanish squadron on the north coast delayed the departure of the expedition until it was shown to be unfounded. Nevertheless the administration did not look as deeply into the question of Spanish communications as did Admiral Sampson, who telegraphed to Washington on June 26th that, in his belief, success at Santiago would terminate the war.

THE GENERAL NAVAL SITUATION.

On June 1st the arrival of Admiral Sampson at Santiago made the blockade an effective one. At this time a reserve squadron was fitting out in Spain and news of its completion was daily expected. Owing to its central position with regard to the two theatres of war in the West Indies and the Philippines, it had a free choice of its field of operations, and at Washington it was believed to be sufficiently strong to turn the balance of strength in either field.

PRELIMINARY NAVAL OPERATIONS.

As General Shafter's force was delayed at Tampa for lack of transportation so that Cervera was temporarily secure from attack, the Navy Department became very anxious to con-

tain his force in such a way that Admiral Sampson might be able to detach a division to act against the Spanish reserve squadron. The collier *Merrimac* was therefore sent into the channel and sunk there on the night of June 3d, in order to prevent the egress of Cervera's squadron. On June 6th, the forts at the harbor mouth were bombarded and silenced by the fleet, but suffered and inflicted no material damage. Although the forts were thus shown to be unable to oppose the fleet, the topography of the entrance was such that the heavy ships could not cover and protect the small craft from infantry fire should the latter be sent to clear the channel of mines and obstructions. In reporting the affair Admiral Sampson urged the immediate despatch of the troops, and, still erroneously believing that the *Merrimac* closed the channel, he suggested that delay in the arrival of the army would give the Spaniards an opportunity of removing the ships' guns to add to the land defenses, and stated that forty-eight hours after the arrival of troops the city and fleet would be captured.

THE SEIZURE OF A NAVAL BASE.

On June 10th the lower part of Guantanamo Bay was occupied by the fleet as a base for carrying on the blockade of Santiago, and a battalion of marines was landed to secure the ships from annoyance by the enemy on shore.

ARRIVAL OF THE U. S. ARMY. THE INTENTION OF THE COMMANDING GENERAL.

On June 16th the forts at Santiago were bombarded again and readily silenced. On June 20th the army arrived off Santiago, and after consultation between General Shafter, Admiral Sampson and the commander of the Cuban irregular troops, it was agreed that the army assisted by naval boats should land about eighteen miles east of the harbor and march to attack the forts at the harbor mouth entrance; and that to facilitate the landing, feints should be made both east and west of the entrance, and that the navy should shell the landing place in order to drive away any possible

opposition. The 21st was occupied in arranging details and issuing necessary orders. On the 22d the disembarkation began. On this day General Shafter wrote to Admiral Sampson, saying he would advance on Santiago as soon as he could, and requested Admiral Sampson "to keep in touch during the advance and be prepared to receive any message I may wish to transmit from along the bluff or any of the small towns, and to render any assistance necessary," thus showing his intention of attacking the harbor forts. About 6,000 men were landed on the 22d, and a strong force was sent to the west and seized a second landing place about eight miles down the beach, where troops and stores were landed on the 23d. About 6,000 more troops were landed this day, and all the troops, 16,000, were on shore on the 24th; but it was very difficult to establish a reserve of stores, as landing on an open beach is not easy.

THE ARMY MOVES CONTRARY TO THE GENERAL'S INTENTION.

The orders for the 24th of June contemplated the retention of a position near the landing place at Siboney until a sufficient reserve of stores had been accumulated on the beach; but General Shafter's headquarters remaining on board ship, the senior officer on shore, upon his own responsibility, directed an advance towards the rear of Santiago, and committed the army to a plan of operations which the Commanding General had not thought of. Not only did this movement forsake the key of the military position and throw away naval coöperation, but it entailed great difficulties in supply, owing to the expedition's lack of transport and to the bad roads, difficulties which would have been avoided had the army remained near the beach.

Under these circumstances the navy could do no more than maintain a close blockade and see that during operations thus prolonged the army should not suffer by having its store ships driven away.

On June 28th General Shafter learned of the advance of Spanish reinforcement marching from the west, and on June 29th he moved his headquarters on shore and arrived at the

fort the following day. On June 30th General Shafter notified Admiral Sampson that he would attack the city the next day, and that he would make a demonstration with a regiment against Aguadores, three miles east of the Morro, and requested the Admiral to support this demonstration in order to divert the defense before the city. Here we see that the movement along the beach upon the harbor forts, which the administration had contemplated as the principal one in front of Santiago, was reduced to the rôle of a simple demonstration, and that the major and minor operations had exchanged parts in the mind of the Commanding General. The navy carried out its share in this demonstration, as requested, on July 1st and on the following day also; but, although the ships present repeatedly assured the coöperating brigade that an advance would find the enemy's position abandoned, yet no movement was made to take possession, and a very promising opportunity was completely lost. On July 1st the American troops made a general attack on the outer works of the Spanish position outside of the city which was successful and was continued the next day; so that by the 3d of July the investment was complete on the north and east sides of the city. Nevertheless, in spite of his success, the General informed Washington that he thought of falling back from the position he had just won, owing to difficulties in supplying his troops from Siboney.

THE PROPER ROLE OF THE ARMY WITH RELATION TO THE NAVY AND THE CAMPAIGN IS LOST SIGHT OF.

On July 2d a very interesting correspondence occurred between Shafter and Sampson. Shafter first telegraphed to Sampson:

"July 2d. Terrible fight yesterday, but my line is now strongly entrenched about three-quarters of a mile from town. I urge you to make effort immediately to force the entrance to avoid future losses among my men, which are already very heavy. You can operate with less loss of life than I can. Please telephone answer.

"W. R. SHAFTER,
"*Major General.*"

The following reply was telephoned by Sampson's flag lieutenant:

"Admiral Sampson has this morning bombarded forts at entrance of Santiago and also Punta Gorda battery inside. Do you wish further firing on his part? * * * Impossible to force entrance until we can clear channel of mines, a work of some time after forts are taken possession of by your troops. Nothing in this direction accomplished yesterday by the advance on Aguadores."

Shafter replied as follows:

"It is impossible for me to say when I can take batteries at entrance to harbor. If they are as difficult to take as those we have been pitted against, it will be some time and a great loss of life. I am at loss to see why the navy cannot work under a destructive fire as well as the army. My loss yesterday was over 500 men. By all means keep up fire on everything in sight of you until demolished. I expect, however, in time, and sufficient men, to capture the forts along the bay.

"SHAFTER."

TO PRESERVE HARMONY WITH THE GENERAL, THE ADMIRAL OFFERS TO SACRIFICE THE PROPER PRINCIPLE AND RISK THE COMMAND OF THE SEA.

To this Sampson replied in a letter from which the following extract is made:

"Our trouble from the first has been that the channel to the harbor is well strewn with observation mines, which would certainly result in the sinking of one or more ships if we attempted to enter the harbor; and by the sinking of a ship the object of the attempt to enter the harbor would be defeated by the preventing of further progress on our part. It was my hope that an attack on your part of these shore batteries would leave us at liberty to drag the channel for torpedoes. If it is your earnest desire that we should force our entrance I will at once prepare to undertake it. I think, however, that our position and yours would be made more difficult if, as is possible, we fail in our attempt. We have in our outfit at Guantanamo forty countermining mines which I will bring here with as little delay as possible, and if we can succeed in freeing the entrance of mines by their

use, I will enter the harbor. This work which is unfamilar to us will require considerable time. It is not so much the loss of men as it is the loss of ships which has until now deterred me from making a direct attack upon the ships within the port. "W. T. SAMPSON."

Thus we see that the Commanding General, having allowed the act of a subordinate contrary to positive orders to commit the army to a difficult line of operation, ill suited to the early attainment of the object of the campaign, and having met with more difficulties in his operations than he had previously expected, and foreseeing others to come, then called upon the navy to save him from the consequences of his act by doing the very thing to prevent which the army had been sent out. General Shafter shows that he regarded the problem before him and the Admiral as simply a question as to whether the additional loss of life necessary to conclude the campaign, should be made to fall upon the army or the navy, and, as the army had lost 500 men, he intimated it was now the turn of the navy to suffer an equal loss before the army should be expected again to exert itself.

Really the situation was very different. Every commander-in-chief afloat or ashore must consider the political situation of the country as controlling the military action, and in modern times the telegraph to headquarters nearly always confers the means of executing this duty in a way satisfactory to the administration. In the present case it was a matter of notoriety that continental Europe was unfriendly towards the United States, and the administration feared that the loss of a single United States battleship, without corresponding loss to the Spanish fleet, might serve to crystallize a coalition against the United States which would be more disastrous than any loss of life, either in army or navy, which reasonably could be expected in front of Santiago. Moreover, should the United States lose a ship in the channel while forcing its way in, the channel might be obstructed so that the fleet would be divided into two parts, the one inside too weak to cope with Cervera's force, and the other unequal to the Spanish reserve squadron. In this case the transport fleet of the U. S. Army would be very vulnerable,

and an attack on it would cause the force in front of Santiago to starve as the reserve of supplies on shore was too small.

THE SORTIE OF THE SPANISH FLEET SAVES THE AMERICAN FLEET FROM ERROR.

A personal interview was arranged between the two commanders-in-chief to reconcile their views, but before it could take place the Spanish fleet came out and was destroyed on July 3d. On the same day the Spanish reinforcing column entered Santiago. On July 4th General Shafter sent word to the city of the loss of the fleet and demanded its surrender.

ATTEMPT OF THE GENERAL TO PERSUADE THE ADMINISTRATION TO RISK THE COMMAND OF THE SEA.

On the same day he renewed his request to the Admiral to have ships force the entrance, and sent the same request to Washington, asking for 15,000 troops additional in case the navy should not enter. He failed to see that, although the capture of the city and garrison was now the sole object of continuing the campaign, owing to the elimination of the Spanish fleet, yet this did not affect the military situation at Santiago, whose key remained, as before, on the hills at the harbor mouth, where the navy could offer tactical support without unduly risking the command of the sea. Not only had sickness made its appearance in the army, but the bad season was approaching, and passing supplies over a surf-beaten beach was a task of difficulty. Even then, had the detachment at Aguadores been sent against the harbor forts, supported by the fleet, the clearing of the channel would have enabled the naval guns to complete the investment of the city to the west; would have brought the garrison under the heavy guns of the fleet, and would have transferred the base from the uncertainties and difficulties of an open sea beach to the security of a fine harbor, besides avoiding most of the difficulties of forwarding supplies from the base.

The General telegraphed to Washington on July 5th: "The only safe and speedy way is through the bay; am now in position to do my part." He had forgotten what he had acknowledged to Admiral Sampson before landing, that the key of the situation was the harbor forts. The President ordered a conference between the Admiral and General, to agree upon a joint plan.

THE NAVY AGREES TO UNDERTAKE CAPTURE OF THE HARBOR FORTS BUT WILL RISK ONLY SMALL SHIPS.

On July 6th, they decided that three days' truce should be given to the Spaniards to deliberate in regard to surrender, after which, in case of refusal, the navy should bombard the city from the sea. Should this prove indecisive, the navy would then send one thousand marines with some Cubans to assault the Socapa batteries, after which some of the smaller ships of the squadron would try to enter (after countermining). That is to say, it was now agreed that the navy should undertake the land assault upon the forts, while the army was to retain the Spanish force within the city. That the navy now felt able to assume this task was due to its recent success against Cervera's squadron, and to the unprepared condition of Camara's squadron in Spain, which rendered a surprise by the latter impossible.

SURRENDER OF SANTIAGO. IT INVOLVES ALL THE TROOPS OF THE DISTRICT.

Firing had ceased on July 4th, and negotiations for surrender continued until the afternoon of the 10th, when the artillery of both sides opened and the ships outside added a long-range fire against the city. On July 11th the bombardment was renewed afloat and ashore, and the investment of the city was made continuous. In the afternoon firing ceased for the last time. Negotiations for surrender were resumed until the 16th, when the surrender was completed, to include all Spanish troops in the eastern extremity of the island.

This wide-reaching surrender was the direct result of the destruction of the Spanish fleet; for the controlling element

in the military situation in the opposing lines and, indeed, throughout the province, was the question of communications and supplies. The blockade was starving the Spanish army, and after the Spanish fleet was destroyed there was no hope of raising the blockade, so Santiago was ready to surrender. In fact, the Spanish government soon perceived its inability to hold the rest of Cuba and grasped the lesson sooner than did our own, although Sampson had early perceived that success at Santiago probably would terminate the war. Thus 150,000 Spanish regular troops were forced to evacuate Cuba without having seen an enemy, because the hostile navy operated successfully on their communications.

THE MOVEMENT ON PORTO RICO.

The movement on Porto Rico was another blow at Havana, as it deprived Cuba of a necessary intermediate base on the route to Spain; but the destruction of the Spanish fleet so completely interrupted communications that the attack on Porto Rico was superfluous, and did not hasten the conclusion of peace, but merely served to throw that island into United States possession when the peace was signed.

REVIEW OF THE CAMPAIGN.

In this campaign it is a noteworthy fact that the administration proposed to itself a military campaign against the principal Spanish army, but it did not realize the efficacy of the preliminary measure which it undertook in order to secure the command of the sea. In consequence it was surprised when that step proved sufficient to terminate the war.

The principal movement of the army of the United States in this campaign was deferred until its sea communication should be assured through the destruction of the Spanish fleet. The more active part of the campaign fell to the share of a large detachment of the army operating eccentrically in a region outside of the intended main theatre, while in spite of its strategic predominance the navy played a part tactically secondary, except at the instant of the sortie of the Spanish fleet.

The complete success attending the movement against the Spanish communications was because the local population was not the object of attack.

It was not the object of the United States to conquer and overrun a hostile territory. On the contrary, its desire was to expel a hostile force from friendly territory. It was unnecessary to seek out the main Spanish army, for this end could most readily be accomplished by directing the navy against the communications of the hostile force. To hold these communications securely it was necessary to defeat the Spanish fleet, and the navy called for the assistance of the army in getting at it. Therefore, in this campaign, the army was strategically subordinate to the navy.

The army was sent to act as an auxiliary to the navy in a naval campaign. The Commanding General misunderstood this point to such an extent that he thought the military operations were the principal ones, and called on the navy to sacrifice itself and risk the success of the campaign to further his own immediate object. Had the forts at the harbor mouth been taken on June 24th or 25th, as probably they might have been, and the Spanish fleet destroyed a day or two later, it is possible that the Spanish garrison of Santiago would have marched into the interior, and the loss of life before Santiago would have been avoided. In this case the Porto Rican campaign would have given the military blow which Spanish honor required before evacuating Cuba, and the war would have ended no later than it actually did. But Cuba was untenable after July 3d, when the Spanish fleet was destroyed.

It is further to be noted that the navy captured and held the advanced base of operations necessary to it without calling on the army for assistance, employing the Marine Corps for the purpose.

GENERAL CONCLUSIONS.

Strategic Principle.

If now we compare the influence of the Navy upon military operations in the cases we have cited, we may draw the following conclusions applicable in all periods. The strategic principle is invariable that the fleet's primary duty is to cover the communications of its own army and embarrass or destroy those of the enemy.

This strategic objective it accomplishes in one way, by destroying the commercial and naval shipping of the enemy. Any diversion of the naval strength from this purpose is perilous.

When pressure on the sea communications will effect the purpose of the operations, the army should act in support of the navy and allow the latter to take the principal share of the work

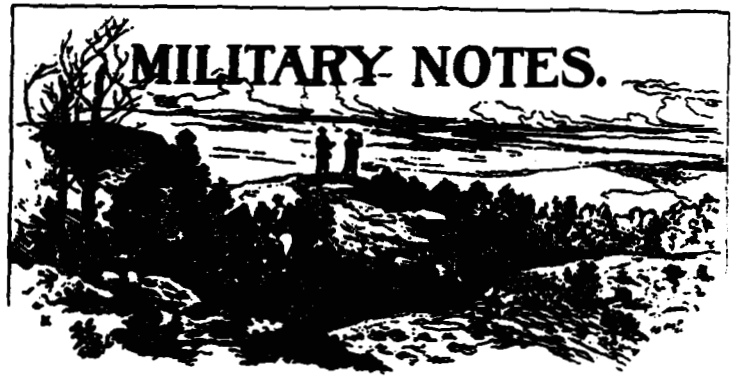
Duty of the Navy Towards the Army.

Tactically the navy may and should support the army with its peculiar combatant strength when it is in sufficient force not to risk disaster to the communications by losses incurred in aiding the army's battle.

When an army is in retreat the navy may support and aid it in battle to a degree not permissible in the case of an advancing army, since the immediate safety of the army is then more pressing than the question of its communications.

Duty of the Army Towards the Navy.

On the other hand, it is the duty of the army towards the navy to provide and hold such naval bases as are essential for the performance of naval work upon the lines of communication. Should a hostile fleet take refuge in a fortified port, the army must undertake the principal part in driving it out, or capturing it, and must expect to see the navy refuse to risk itself in supporting the army in attacking the main defenses of the place.



THE WEBLEY-FOSBERY AUTOMATIC REVOLVER.

By Major A. G. HAMMOND, Third Cavalry.

REFERRING to the article by Captain Vidmer, Eleventh Cavalry, in the January number of the JOURNAL, on the Webley-Fosbery automatic revolver, I would like to say that I have made quite a study of this revolver, and believe it will prove a useful and durable arm. Like Captain Vidmer, I do not propose to bring up a discussion of the merits of a large caliber pistol, for I believe we are almost, if not quite, a unit on that subject.

Through the kindness of Mr. Joseph Devlin, the Exposition representative of the manufacturers, we were enabled to have a thorough trial of the pistol, he having sent to England for a supply of "cordite" ammunition for it.

I personally fired a large number of rounds with this pistol. The targets made were very good, and during the trial no defect in the mechanism was made apparent. There is none of the "throw-up" experienced with our 45 revolver, as formerly used, and the accuracy of the target was, so far as I observed, dependent on the individual skill of the operator.

All revolvers, without doubt, have a certain amount of loss of gas, owing to the almost inappreciable space between the cylinder and the barrel; but why should we desire a revolver whose killing range is beyond seventy-five yards? If it has sufficient stopping shock within that distance, it appears to me to be sufficient.

Should there prove to be sufficient use of the pistol in this country, it is practically sure that our ammunition manufacturers will make the necessary ammunition for it, so as to render it unnecessary for us to purchase the ammunition abroad.

With a supply of clips, ready loaded, and carried in either the pockets of the service blouse or in a belt with pockets, the revolver can be reloaded in an almost inappreciable time, and it is quite possible that some lives that otherwise might be lost, could be saved at the expense of the other man's.

During our trials no weakness was developed, though the tests were as thorough as the brief time permitted. The "grip" of the pistol is good and fits the hand well.

For those, if any there be, who desire a smaller caliber, there is also manufactured a 38, the chamber of which holds eight cartridges.

I have so much faith in this revolver that I have already placed an order for one with the manufacturers.

By Major H. L. RIPLEY, Eighth Cavalry.

When the description of the Webley-Fosbery automatic revolver first came to my notice I was very favorably impressed with it on account of its apparent simplicity, its strength, and the absence of that delicate mechanism which appears in most of the prominent automatic pistols of the day.

It is not a new revolver. It has been for several years before the English people, but it is only comparatively lately that it has been perfected by its makers.

I requested Warnock & Company, who handle it in this country, to send me one for a closer examination and trial. They sent me one of 45 caliber, and 100 rounds of cartridges charged with cordite and made for the revolver.

Closer examination of the revolver itself still further impressed me with its adaptability to our service. I then took it to the range and fired it. Here, as an automatic revolver, it was a complete failure. Not a single shot fired carried the upper portion back, thus revolving the cylinder and cocking it. Other officers of my regiment—excellent pistol shots—were also present and fired it, but with the same result. It was simply a single shot pistol, and a poor one at that, as it took both hands to push the upper part back and thus revolve the cylinder and cock it after each shot.

Several times by working it back and forth by hand, the revolving stud traveled the same road, and the cylinder which was turned half-way to the new cartridge when the upper part was away back, was turned back again, when it went forward; thus presenting the fired shell a second time to the firing pin, which would cause a miss-fire.

I returned it to Warnock & Company, and have since been informed that it had been sold to another party, and no complaints had been received as to its working.

I am, however, by no means prepared to condemn this class of revolvers on account of my experience with the one I tried. I believed then, and I still believe, that something was wrong with the particular one I had. It required considerable strength when using both hands, to start the upper part back, more force than the recoil would produce, but once started, it went well enough.

As regards accuracy, I did not find it as accurate as our present 38 caliber service revolver, and it is much inferior in that respect to the officers' model Colt 38, or the officers' Smith & Wesson 38, which latter are most excellent shooting revolvers; but I prefer the Colt on account of its superior grip and front sight.

The Webley-Fosbery was advertised to use our service 45 ammunition, but it could not be used in the one I had. It was a trifle too large to go fully into the cylinder.

It is very desirable that any officers' pistol should use the service ammunition. That this one does not, is an objection, though not an insurmountable one. The revolver is well described by Captain Vidmer in his article in the January JOURNAL, though he omits to mention a little triangular device on each side in front of the cylinder, which enables it to be thrust home into the holster, without catching in the front of the cylinder as our service revolver does.

If the automatic mechanism always works as it is claimed it does, I believe it the best revolver yet offered for our service. It is simple, very strong, sufficiently accurate, not liable to get out of order in the hands of a recruit, and there is no question as to the stopping power of the 45 caliber. At the same time, as compared with our 38, it is heavy and feels clumsy at first.

Is it, or will it ever be, safe to put any automatic pistol into the hands of the troopers? Most of us believe that it is not, and never will be. Fancy a charge and a melley in which a troop, armed with automatic pistols, has engaged. At the end of it, in the excitement and confusion, how many of the pistols will be dropped on the lanyard, or shoved into the holster, cocked and all ready to fire a hole through the trooper's thigh? Is there any doubt that some will, in every case?

Of a truth, the automatic pistol will never be of any use in our service except to officers, and even in their hands its advantages are doubtful. Accuracy and quick firing are its only advantages. Accuracy depends more on the hand than the pistol, and in self-defense it is the first shot which counts; and with no automatic pistol yet tried in our service, can the first shot be got off as quickly as it can with a double-action revolver.

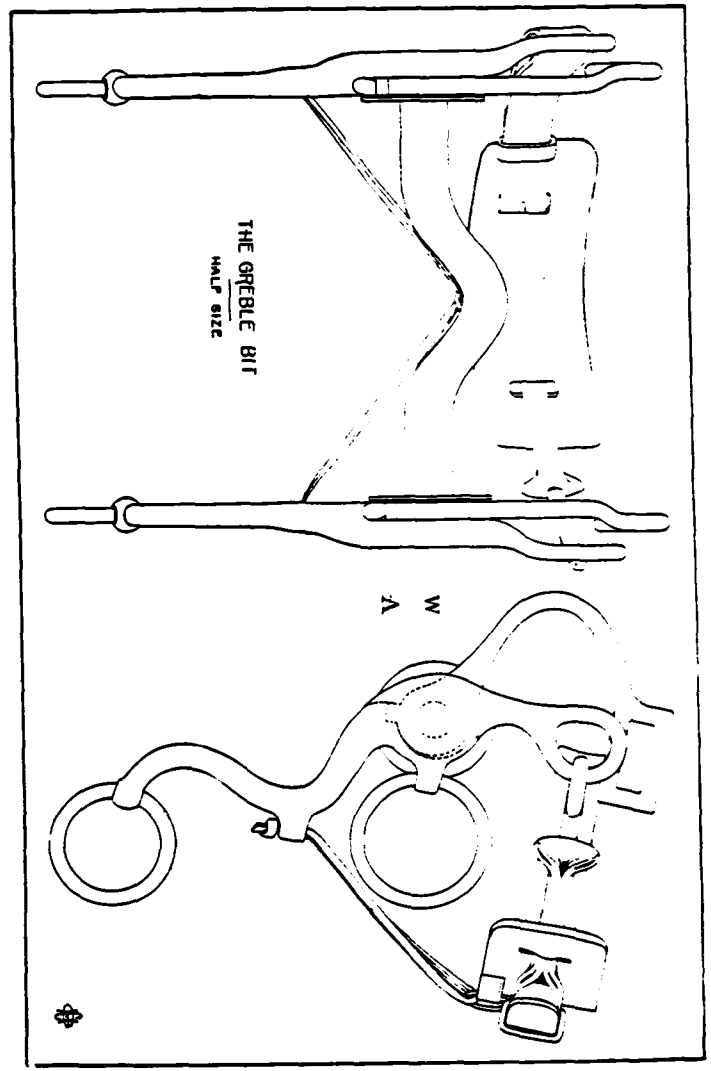
As to a larger caliber for our pistols, it is high time that every officer of our service was making himself heard on this subject. So far not a single one with any practical experience who has been heard from, but condemns our small caliber.

Not one of us, when there is expectation of real danger, feels himself adequately armed if he carries a 38 caliber revolver. Whose fault is it that we are still equipped with this parlor pistol, in the face of all the reports that have been made against it? Let us get rid of it. The pages of the JOURNAL are open to all officers for the expression of their views; and if a whole JOURNAL, or several of them, should have to be given to this single subject, they will have served their purpose well, if they rid us of this faulty weapon. And it is not believed that the Ordnance Department will persist in equipping us with this pistol, if we all raise our voices loud enough against it. EDITOR.

THE GREBLE BIT.

TURN back to Captain Koehler's concise article on cavalry bits, in the JOURNAL for July, 1903. He cites five serious defects in the issue bit, and introduces the Johnson bit, which most of us have since had an opportunity to test. While the Johnson to a great extent remedies the faults enumerated, it has itself, in the opinion of many officers, defects sufficient to debar it from adoption for field service. The brief comment of an old captain that "it is too —— much of a machine," seems to voice the general objection.

The Greble bit, here illustrated, differs from the Johnson and the Whitman in details, but not in principle. The essential difference is that the attachment is inside and not outside of the upper branch; but we have the same separate piece to be attached to the cheek-strap, and designed to prevent poll pressure, and the lug (A) to prevent upsetting. To correct other faults a disk or washer (W) is intended to prevent abrasion of the lips, and a thong is added to retain the curb-strap in the chin-groove; at least, it is assumed that such is its object. A thong similarly placed on the issue bit is frequently used to prevent upsetting, but in the Greble



model the lug (A) prevents this evil since the cheek-piece attachment has a rectangular slot.

Several of these bits have been tested at Fort Riley and the concensus of opinion, gathered unofficially, seems to be:

1st. The cheek-piece attachment obviates the use of the nose-band of the Johnson bridle, but, by comparison, there is a marked loss of rigidity.

2d. The attachment itself is too frail; it can easily be bent with the fingers, and when it is bent, the parts bind and the principle disappears.

3d. The washer (W) is a necessity in this model to prevent pinching the lips in the scissors of the upper branches; but in some cases the disk itself has caused injury. Moreover, since the attachment is theoretically stationary, it would seem that the washer should be fastened to the attachment, and not to the mouth-piece.

4th. The upper branch has none of the curvature seen in the Johnson model, and in consequence the curb-strap rises just as much as it does with the issue bit. The thong becomes slack as soon as the lower branch is pulled to the rear.

5th. Accumulation of dirt and rust in inaccessible but vital parts will be even more apt to occur in this model than in the Johnson.

In short, the Johnson is the better bit.

Major Greble has evidently devoted much time and thought to his subject, but the old problem of the practical field bit appears to be still unsolved.

In the remarks following Captain Koehler's article will be found the strongly favorable comments of the Fort Leavenworth officer who, in July, 1902, was testing the Johnson bit. Only yesterday this same officer stated: "The bit has worn out and gone all to pieces, and it was made stronger especially for me." This, after two and a half years of comparatively light service.

The conclusion cannot be avoided that bits of the Johnson and Greble pattern, ideal in theory, are of value in practice only on the gentleman's park horse.

The curb-strap, shown in the figure, stands, of course, on its own merits. It is considered faulty, in that the ends are not symmetrical. The hook end is fragile; two of these hooks have broken, in one case, permitting a spirited horse to bolt with one of the best horsemen at this school (School of Application for Cavalry and Field Artillery).

G. H. C.

THE SERVICE BIT, CURB-STRAP, AND BRIDLE.

By Captain HERMAN A. SIEVERT, Ninth Cavalry.

THE subject of bridle bits is always an important and interesting topic with the horseman, and the ideas entertained by him in regard to the construction of a bit are as different and varied as the numerous varieties found on the market.

The kind of bit to be used is determined by the opinion of the owner or rider, certainly not by the obedient, adorable horse, who has had perpetrated upon him more instruments of torture than all other animals of his kingdom.

After carefully reading the criticisms invited by the JOURNAL OF THE U. S. CAVALRY ASSOCIATION on bits in general, and especially the present service bit, I endeavored to construct a bit that would overcome many of the objections noted in those criticisms, and I wish to state that I have been greatly assisted in my endeavors by the many valuable suggestions made by officers in reply to the JOURNAL's invitation. Concerning the mouth-piece, I will first consider the port, its object, width and height.

The object of a port in a stiff mouth-piece is properly to proportion the amount of lever-action between the tongue and the bars, and to allow the tongue to have some blood circulation; a horse is then considered nicely bitted. Just what amount of blood circulation the tongue will have, depends upon its size and texture, and the particular shape and curves of the port.

Cut No. I. gives the mouth-piece of a *service bit* placed on the skeleton bars of a horse sixteen and one half hands, at

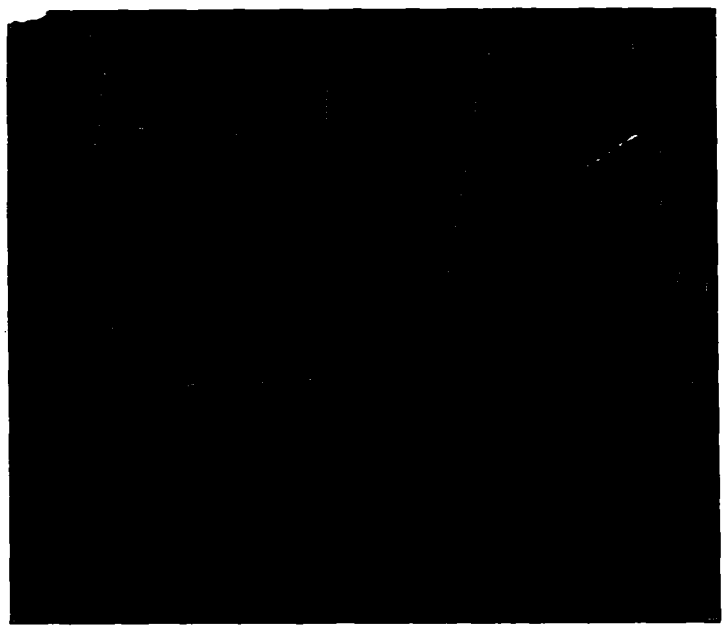
seven years of age; the width of the tongue-channel is one and one-fourth inches, the height of the bars is one and eight-tenths inches, these measurements being taken opposite the chin-groove. It will be noticed that the port of the service bit, which is two and one-half inches at the door, and three-fourths inches high, falls entirely outside the bars of the jaw of this average mouth; and the straight portions of the mouth-piece do not operate on the bars as we have been taught to believe they should. Authors dealing with the subject of bits, generally agree in regard to the principles of the port and its objects.

CUT I.

Our text-book on hippology, "Horses, Saddles and Bridles," by General Carter, treats of the port in a very thorough manner. The following is quoted from the above named authority, page 142: "The tongue-channel determines how much of the mouth-piece must be allowed for the width of the port of the curb-bit, the remainder being reserved for the action of the bars." Again, page 152: "It is necessary that the parts of the mouth-piece to act on the tongue and bars respectively should keep their places. This requires that the mouth-piece fit exactly the width of the mouth, and the width of the port be not greater than the width of the tongue-channel. If a mouth-piece with a port be too wide, a slight pull on one rein will suffice to displace it, so that the bar at that side gets either altogether under the port, in which case the pressure is thrown on the tongue, when the corner of the port will, by being pressed into it, cause great pain, and make the action of the bit very

irregular and unsatisfactory. If the port is wider than the tongue channel, a similar thing occurs; and if narrower it fails to admit the tongue."

One and one-third inches, according to the author, should be the maximum width of the port (this gives no margin, and no matter how correct the mouth-piece is in length, one corner of the port is ready to slip in the tongue-groove at the



CUT II.

first side pull the bit receives); however, the designers or constructors in the arsenal have followed the principles and objects of the port close enough to give us a service bit with a port two and one-half inches wide.

Let me ask the question, Who is at fault, the board of designers of the service bit, or the authors in their universally accepted deductions as to the objects and necessity for a port in the curb-bit? My opinion is that the service demanded a lever bit, and the designers having nothing to substitute for

the port, continued this relic of barbarism, and have given us a bit in which the port is the most suitable that could be devised: certainly far superior to a port having a width equal to or less than the lingual canal. The port of the service bit as shown in Cut No. I. works well down on the sides of the bars of the lower jaw, and the corners of the port being well rounded, the action is much less objectionable than with a port having the same width as the tongue-channel; in which case the corners could not be very much rounded.

CUT III.

I have endeavored to show that the port is a bad element in a bit, no matter what its shape, and for the sake of the horse and pony I should like to see a curb-bit introduced into the service, which will have snaffle sections for its mouth-piece, and in which the curb and snaffle actions can be used independently of each other, or in conjunction with each other; thus giving a bit similar but superior to the curb and bridoon.

Cuts II. and III. are the only bits on the market that approximate the above description.

WIDTH AND HEIGHT OF PORT.

In considering the width of the port, it is, of course, necessary to know the width of the channel the port is to bridge; the average width of the channel for the tongue is found to be about one and one-fourth inches.

It may be said that the height of the port will depend upon how much tongue it is to receive and work upon: as the average width of the lingual canal is one and one-fourth inches, the bottom of the port should be a little narrower, say one inch, or better, seven-eighths of an inch. This will give three eighths of an inch play, and will help to prevent (if possible) the corners of the port from being pulled into the channel, and also from bruising the gums on the outside of the bars. A port seven eighths of an inch wide at the door, if not too small for the tongue to enter comfortably, and cause the horse to draw back his tongue in a tiresome position, will require too much height. Any port that would meet one of these requisites in shape, would be at fault in every other particular, and as a matter of fact it (the port) is entirely inconsistent with good bitting.

Cut III. has the broken or hinged mouth-piece, generally known as a snaffle mouth piece, placed on the same skeleton bars; these snaffle sections are shown to make with each other an angle of about seventy degrees, which I have considered to be a safe angle in consideration of the pinching action on the bars of the mouth. This angle, however, can be made greater or smaller, by increasing or diminishing the openings in the ears of the branches. It is evident that the arch the mouth-piece sections make with each other increases in height with the amount of pressure or power applied to the reins; also, that this mouth-piece accommodates itself to the different shaped mouths, and to the volume and texture of tongue of the individual horse. Before concluding my remarks on the mouth-piece itself, I will add, that I appreciate the mildness of the snaffle section in training the young horse and its tendency to preserve a normal mouth in the trained and older animal; but I am convinced that the better education of the horse is accomplished by the use of the lever action in a bit, usually completed by the assistance of some form of curb-strap.

CURB ACTION SEPARATELY CONSIDERED.

In the present service bit the length of the upper and lower sections of the branches being generally conceded to be of proper proportions, the shape of the branches should be determined by just what part of the mouth the lever-

Cut IV.

action of the bit should be applied to; the accepted place for this action is in the chin groove by the curb apparatus, and upon the bars of the lower jaw, opposite the chin groove, by the mouth-piece.

The shape of the branches of the present curb-bit is faulty for two reasons: First, the curb apparatus moves up

out of the chin groove; second, the curb apparatus pinches the corners of the horse's mouth. Both of these faults would be obviated by changing the shape of the upper portion of the branches in the service bit.

Cut IV. shows branches with proportions identical with those of the service bit, but with the upper parts of the

Cut V.

branches bent slightly rearwardly and down. It will be seen that it is absolutely impossible to pinch the corners of the mouth with this shaped branch, and that the curb strap has not the tendency to leave the chin groove.

THE CURB STRAP.

The curb strap should be light, strong, of a suitable length and texture, should conform to the shape of the chin groove, and should not stretch or shrink.

Cuts IV. and V. show such a curb strap. It is made of steel tape, having the ends bent back upon itself, and riveted to form loops; the rivets passing through the ends of a piece of stuffed leather, to serve as a cushion. It costs about fifteen cents, which includes a double detachable snap. These snaps can be made of different lengths, thus making the curb-strap adjustable. These various sized snaps are to be kept by troop commanders, and when the proper length curb strap is determined by an officer for a trooper's horse, it cannot be changed in length to suit the whim of the rider.

BRIDLES.

Cut V. shows a bridle having but two straps, five buckles, two keepers, and not a stitch of sewing in it. This bridle can be perfectly adjusted to suit the largest horse or the smallest pony.

The service bridle has several objectionable features that have occurred to me under varying circumstances; and while it does not require a vast amount of energy to criticise and find fault, yet this is usually overlooked, when one is candid and sincere enough not only to suggest something better, but also to construct and test a model that will eliminate the objectionable features in the article that he criticises, without introducing other or more objectionable features.

To start with, the brow-band of the service bridle is not adjustable in its length. It may, however, be moved up and down on the crown-piece; but there is no attachment to hold it in its proper place, and a horse with a small head will have the buckle of the cheek strap crowding the brow-band up against the base of the ear.

The bridle is decidedly weak in one place, namely, where the ends of the crown-piece (just below the rosettes) buckle into the cheek straps. The bridle is also faulty in that it has no considerable degree of adjustability; for instance, in attaching the watering bit to the present bridle on a horse with a small or medium head, the mouth-piece of the bit cannot be taken up far enough in the animal's mouth.

Cut V. shows a bridle that remedies these defects. The brow-band and throat-latch are one continuous strap, held by a flat buckle hidden by the rosette; and the brow-band can be readily lengthened, raised or lowered, to suit the particular shape of the animal's head.

The crown piece and cheek straps are one continuous strap of the same width (one inch) throughout its length; these two straps and five buckles form the bridle. It will be noticed that the bridle has not a stitch in it to weaken its structure, and while it has no weak link (so to speak) it is pleasing in appearance. The crown-piece of the service bridle being split at both ends from the rosette down, the rear portion forming part of the throat-latch, and the front portion part of the cheek-pieces, gives the bridle its weak link.

A strap is run between a small, strong metal keeper and the buckle of the cheek-piece, making the whole an excellent halter-bridle; and each trooper, with the assistance of a buckle and a strap, is at once his own saddler, as far as his bridle is concerned.

The third rein shown in Cut V. is detached from the bit and snapped into a ring in the halter-strap for the purpose of a halter-shank when such is necessary.

The following are some of the objects and principles of the bit shown in Cut IV:

Why Does the Jointed Mouth-piece Give the Desired and Proper Fulcrum in Operating a Lever-action Bit?

The desired fulcrum, for the reason that the mouth-piece accommodates itself to suit the volume and texture of the tongue, and the size of the bars for each individual mouth.

The proper fulcrum, for the reason that it positively assures the preponderance of pain on the bars of the lower jaw, and a minimum of pain in the chin groove. This is accomplished by the pinching effect of the snaffle sections in operating the lever-action, in addition to the pressure on the bars. Thus the animal will surrender to the pain, and

the head will follow the rider's hand; while, if a considerable amount of pain is produced by the curb strap, the head will naturally be pushed forward to avoid the pain, bolting, and a general misunderstanding between rider and horse will follow.

Why Should the Mouth-piece Have a Universal Joint Connection With its Branches?

This prevents the mouth-piece from being turned in the animal's mouth, eliminating possible injury to the bars; and it certainly gives more comfort to the animal.

It keeps the part arched over the tongue at all times, thus preventing it from pressing into that member. It prevents the animal from seizing a branch between his teeth. When the curb structure is not being operated, it swings loosely, both forward and laterally on its pivoted connection, from the perpendicular, and it is about as difficult for a horse to catch a branch as it is for a boy to grasp with his mouth an apple hung on a long string from the ceiling.

Why Should the Branches be Curved Down and Rearwardly?

This prevents the corners of the mouth from being pinched between curb-strap and mouth-piece.

It keeps the chin-strap in the chin-groove, and the pressure of the mouth-piece on that part of the bars opposite the chin-groove.

The ball and socket connection and the universal joint connection, as shown in Cut V., are used for the reason that they can be readily constructed to limit the angle made by the mouth-piece sections. From actual tests I have found a minimum of sixty-five or seventy degrees for the average size mouth to be a safe angle, and one that will not injure the bars by excessive pinching. The above described connections also prevent the upper portion of the branches from coming together too closely in operating the snaffle action.

The first named connection, that having the "universal joint," from its construction, prevents the horse from throwing the bit over.

Why Are the Rings Used to Connect the Cheek Pieces of the Bridle?

1st To protect the sides of the animal's face from being rubbed by the branches.

2d. To protect the horse's cheeks; the ring gives a construction that does not interfere with the curb action.

3d. To prevent a pull on the top of the head, and, also, prevent displacement of the mouth-piece when operating either the curb or snaffle actions.

4th. So that a running rein can be used in breaking a remount, or for martingale attachment, if desired.

Why Is the Yoke Constructed With a Central Loop?

To give a third rein attachment for operating the curb action by the trooper, and the off horse by the mounted artilleryman. It is expected that with this bridle the trooper will habitually ride on the snaffle, thus preserving a normal mouth even with a heavy-handed rider.

THE TRAINING OF CAVALRY HORSES.*

By EDWARD L. ANDERSON, Author of "Modern Horsemanship."

GENERAL:—I accepted your invitation to address the officers of your command upon the subject of the "Training of Horses," with much pleasure; in the first place, because it was a high honor to appear before such an audience, and in the second place, because I had for many years taken a lively interest in our mounted service and hoped that good would follow such a scrutiny of the subject in hand. For, instead of delivering a lecture, I had proposed to myself, with your permission, to make a statement of the principles of the method to be recommended, and invite criticism and discussion from the gentlemen present. In

*Extracts from a letter to the commandant of the Infantry and Cavalry School and Staff College.

such a course any errors that existed might be made apparent, and obscure points could be made clear.

Should you receive this letter, it will be because circumstances have prevented me from keeping my engagement during the time appointed, and I can only express my deep regret that such is the case.

I am sending you a summary of the points I had hoped to offer for consideration, and if you can make any use of this communication I shall be gratified.

Above all other horsemen the trooper should have the immediate, exact and unlimited control over the animal he rides, and every army should adopt some system which accomplishes this in the simplest manner. Some arrangement of Baucher's Method best answers these requirements, but Baucher's writings are too obscure for general use. Horses were trained, and sometimes well trained, before Baucher's day, but all such work was more or less tentative, and it remained for that master to formulate and explain all that was of value in the art, and to give undeviating rules that applied to every case.

That all modern methods of training of any value owe their existence to Baucher (a fact that is usually disputed by those authorities who desire to lay claim to originality) may be seen by comparing any work on the subject which has appeared since 1845 with those of an earlier date.

Stripped of its unnecessary and confusing refinements, Baucher's Method may be expressed in two brief paragraphs:

I.

The cultivation in the horse of those muscular actions that follow the applications of the hand and heel, until obedience to their demands becomes instinctive. The suppling consequent upon this work, annulling the active (or willful) and the passive (or physical) resistances and rigidities in all parts of the animal.

II.

Collecting the weights and forces of the extremities (the forehand and the croup) to a point of union and balance under the rider, who disposes this center of gravity as the occasion requires, so that the animal moves in easy, cadenced and controlled actions, forward, to the rear, or to either side.

The results indicated in these two principles must always have been produced to a greater or lesser extent in every horse that had been made easy, safe and pleasant to ride; but horsemen did not understand the matter clearly, until Baucher's scientific explanation of the phenomenon. That is, previously to Baucher, training was an experiment in every case; afterwards it was a method.

Furthermore, Baucher explained that a great part of the education of the horse could be accomplished by the dismounted man in about one tenth of the time that would be required by the mounted man, by reason of the ability of the trainer to demand more readily a sure obedience from the animal so confined. Indeed, except for the few lessons which would be required to transfer the effects of the whip to the rider's heels, a horse might be thoroughly trained without ever having been mounted.

A satisfactory method having been selected, it should be of general application throughout the army, for that would secure a uniform and certain mode in place of irregular and questionable ways of handling horses. In spite of short enlistments, unsuitable bridles, and irregular instructions in horsemanship, the cavalry of the United States Army compares favorably with the mounted men of any country; but this is due to the zeal and abilities of its officers, and two, at least, of the three hindrances might readily be obviated to the advantage of the service. At present every troop commander teaches riding and training according to his own ideas; so that it may happen that no two units of a regiment would have, when mounted, the same uniformity, mobility, or effective force, every variety of seat and of handling the horse being possible. A settled method might be introduced without serious disturbance of existing conditions by the ap-

pointment to the Military Academy of an instructor familiar with the desired method, and by sending the graduating cadets who are to be commissioned in the mounted arms to one of the Service Colleges for one year's work in the care and training of horses.

The nearer we keep to the so-called thoroughbred and yet improve on it in springiness of action and in nimbleness (for by reason of its long stride the thoroughbred has some defects in its movements) the better horse shall we have for the cavalry, because the stamina and courage that will make even a dying effort, may give the great result that has been looked forward to by years of preparation. In the Napoleonic wars, the coarse animals ridden by the heavy cavalry sometimes became "dead-beat" in the charge, and could only be brought against the enemy in a walk; by which the effect was lost. It is questionable whether the time ever comes that a few strides in the gallop cannot be asked from a well-bred horse that is able to stand on its legs.

Whatever may have been its previous handling, every horse that is intended for cavalry service should be put through a like course of training, the length of time required for any stage of its education depending upon circumstances.

In America we do not make enough use of the *cavesson*, a head collar with a metal nose-band, by means of which the man has great control over the horse without necessarily inflicting pain on the animal. When the horse circles about the man at the end of the longe-line, and is brought to a halt at the trainer's demands, and made to change direction, and to do other things required of it, the animal is not only given a good form of exercise, but it is suppled throughout, and an amount of discipline is established that would surprise one who had never made use of this admirable instrument.

The fault in Baucher's writings, which renders them almost or quite useless to those who do not recognize it, is that he apparently intends that the training of a horse should begin with the bending lessons in the double-bridle. Everyone who has proceeded in such a manner must have invited failure, for the horse would always be "behind the hand,"

that is, the rider would find no tension upon the reins by which to direct the movements of the horse. *Riding is the production of impulses from the croup which are controlled and directed by the hand.* The hand must always find some slight opposition to the reins, or it will have no control over the horse. When a horse determines to rear, to shy or to commit any form of mutiny or mischief, it almost invariably "drops the bit" and gets behind the hand just before it endeavors to escape control.

When the horse is first mounted, it should be ridden in the snaffle until it will go forward under a steady but slight tension upon the reins, and has been taught to obey the heel indications, and to be fairly obedient to the bridle.

Then the animal should be put into the double-bridle and its education completed by carefully conducted lessons. It should be observed that no horse can be properly trained or ridden in the single-curb bridle, *and it is a matter of astonishment that this inadequate apparatus should be retained in our service.* In every European army the curb-and-snaffle bridle is employed, and there are many reasons in its favor beyond the fact that both bits are required in properly training a horse.

Among many things that may be said in behalf of the double-bridle may be mentioned, its advantage in preventing the horse from escaping control by bringing the chin against the chest, as it may do in the single-curb-bridle, and the relief that would come to the horse upon the route march by the use of the snaffle, many horses being harassed to the point of fatigue, or even injured, by the careless use of the severe mouth-piece.

In the method I have ventured to recommend, nothing is left to the volition of the animal, and no dependence placed upon its docility or good temper. The animal obeys because it acts instinctively and does not dream of disobedience. By the suppling exercises, and by controlling the positions of the weights and forces of the extremities, the animal moves in smooth, even and cadenced actions. It can be brought to a halt in the gallop by means of the spurs, so

that there will be no jar or disorder. It may be made to change lead in the gallop in the beat of the pace, wheel in place from high speed, and perform any movement of which it is capable, with precision and celerity. Any man of ordinary intelligence should learn the whole system in a few short lessons, and be able to apply it, after such practice as would make him a fair rider. There is nothing mysterious or difficult in any of the modern methods, and the results are marvelous.

Reprints and Translations.

THREE CONTRIVANCES FOR USE IN HORSE TRAINING.

TRANSLATED FROM "REVUE DE CAVALERIE."
BY CAPTAIN FRANCIS C. MARSHALL, FIFTEENTH CAVALRY.

I. CAPTAIN CHERVET'S LONGE.

THE adjustment of the longe on the bit, and the position that it takes with respect to the crest, are indicated in Figure 1. It is seen at once from the cut, that the adjustment of the longe admits of all possible combinations of arrangement at the bits (according as the longe takes one or both rings of the bridoon, one ring of bridoon and one of bridle, etc.), and that these same bit combinations are again available for the work to the right hand.

It is seen besides that the pressure on the crest is divided, and is extended on the two points A and B. The point B may be shifted to any position between the poll and the withers. In ordinary practice the relaxation of the muscles, the suppleness of the gaits, the equilibrium of the movements, are the criterions that serve as guides to determine the place of this point.

The pressure at the point A results in part from the turn of the longe under the throat latch, and experience seems to show that this arrangement conceived by Captain Chervet is advantageous in the majority of cases.

Figure 1 does not show all the contrivances adapted to facilitate the sliding of the longe both in the rings of the

bits and in the throat latch (that might itself carry a ring for the passage of the longe). A rope of ordinary hemp, about one centimeter in diameter, is suitable in most cases for the longe. The use of a rubber covering might be advantageous for that part of the longe that passes over the crest. The arrangement of details serving to make the instrument vary infinitely, each one should choose the arrangement that suits the case in hand.

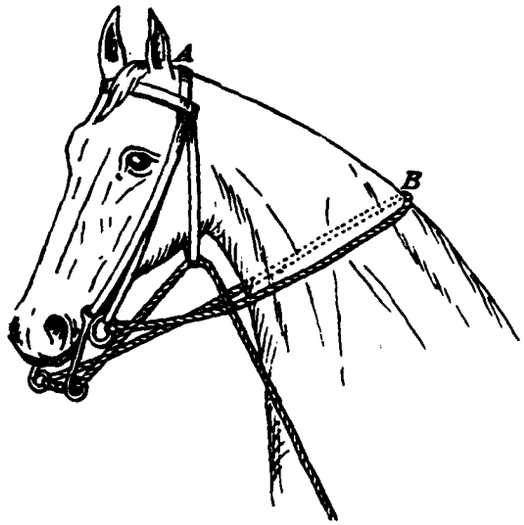


FIG. 1.
The Longe is placed so as to work in circle to the left.

The longe so adapted is not a means of coercion, as we are going to see, but an extremely efficacious instrument for suppling.*

The horse, at first not mounted, is put on circle by means of this single instrument, which, without producing any brutal effect, possesses, by reason of its power, a moral ac-

*It is to be noticed that the method of reining described here differs essentially from the regular methods, that have been so often objected to, not without reason, as presenting very grave defects. It differs also materially from all methods of reining that react upon the body of the horse, and not upon the crest.

tion manifesting itself by the very rapid submission of the horse. The exhibition of force and of spirits generally provokes no disorder. The horse puts himself very quickly on the bit, and the tension of the longe, leading only to muscular relaxation, creates no tendency to slackening of gait. The exercise on the longe gives to all horses an acquaintance with the bit at all gaits, and at the same time a marked élan.

The work on the circle is of itself excellent gymnastics, but it becomes here particularly efficacious because the horse works "place," relaxed, and with an impulse that the instructor can maintain, by means of the long whip, to the highest degree, without causing confusion.

The elevation and the curvature of the crest, its extension, the position of the head, the relaxation of the muscles, are regulated at the will of the instructor. The changes in the direction of the force applied, due to the arrangement of the longe, remove all danger of bruising the crest, whose base quickly acquires the firmness necessary in the course of training. The arching of the neck, and the lowering of the crest, are prevented by the choice of position for the point B.

Relaxation and lightness, especially, are obtained with great rapidity. If one mounts a horse, having first worked him a quarter of an hour on the longe, he is astonished to observe a noticeable increase in the suppleness of the jaw, ease of reaction, and tractability.

Exercise on the longe with this instrument constitutes a very interesting study for any one interested in the horse. All the movements of the animal betray suppleness and equilibrium. The horse with muscles relaxed, expends his forces without useless violence, and he acquires in a few days a lightness of attitude and of action that it is a pleasure to note. However brief the work on the longe may have been, the horse receives in some sort the imprint of its effects; and the results, at least in part, are permanently acquired. All the work on the longe may be executed with an assistant mounted on the horse.

II. CAPTAIN DE COLBERT'S REIN.

Captain de Colbert has contrived an arrangement of the rein, that constitutes the most simple instrument that can be put into service in the troop. (Fig 2.)

This arrangement consists, after having placed the middle of the rein on the crest, in making the free ends pass through the rings of the bits, and uniting them in the hands of the rider. The point of support B of the middle of the rein varies according to the attitude of the horse, and the object to be obtained; the rider can change it easily.

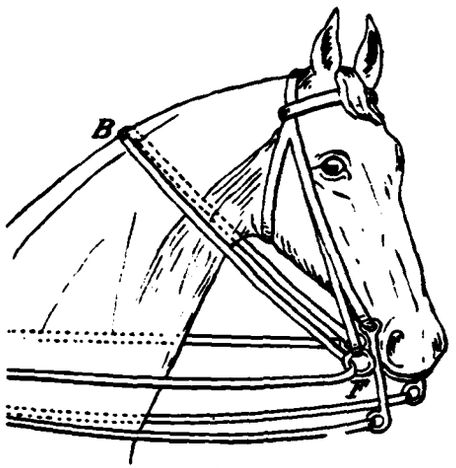


FIG. 2.

If the horse goes from the hand, the rein is placed towards the middle of the crest; if the horse arches his neck, it is placed, on the contrary, towards the poll, and becomes, then, a sort of elevating bridoon. In the ordinary case the rein approaches this latter position.

The arrangement of reins thus effected is very powerful; the rider places the head of his horse at his will. The tension of the reins, instead of maddening the horse that gains on the hand, quiets him gradually. Finally, the slipping of the reins in the rings, and in the hands, permits the extension of the crest, of which the rider rapidly takes up the play.

Experiments have been tried upon a large number of horses. In the different defenses that the horse opposes to training (rearing, bucking, whirling about, dancing, kicking, being excited in the rank, etc.), success has always responded to the attempt.

During the period 1900 to 1902 the results obtained were, moreover, submitted to a number of competent persons. One might, however, ask if this powerful instrument, put into the hands of inexperienced riders, would not offer objections. Experience has shown that awkward riders succeed rapidly enough in graduating their actions, and that they make use of this method of reining without the horse's losing anything of his élan.

This system of reining has been tried successfully by many officers and breeders to whom Captain de Colbert has recommended it. It admits of many variations; among those the bridle of Lieutenant Lebaume of the cavalry deserves special mention; he gives joint responsibility to the cheek piece and the rein, and establishes very rationally pressure on the poll. (Fig. 3.)

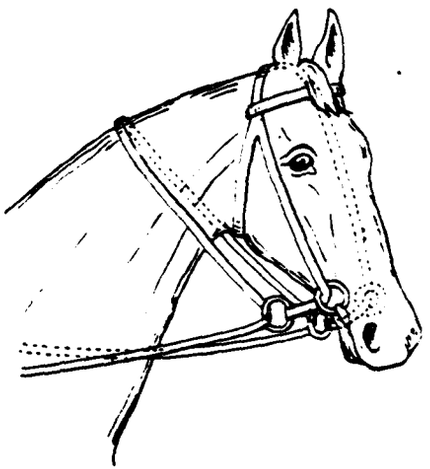


FIG. 3.

It is to be remarked, in addition, that the rein of support, like the longe, lends itself to all combinations of bitting.

Officers have devised, since the experiments of Captains Chervet and De Colbert, quite a number of apparatus (bridles, longes, etc.); they have thus been able, as a consequence of their personal researches, to realize often enough happy dispositions with their several arrangements. Others have experimented, generally with success, with the longe and rein of support, in the training of their own horses or those that were entrusted to them.

Finally the methods described above are applied in some regiments to the training of young horses.

All these efforts seem to merit encouragement.

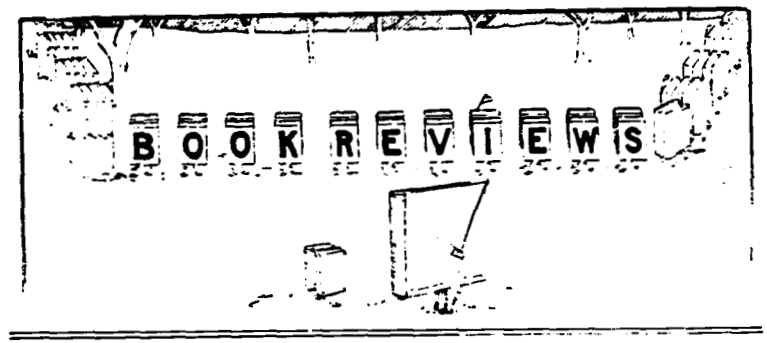
CONCLUSION.

Captains Chervet and De Colbert have trained by the processes we have just indicated in outline quite a number of horses that form, from the point of view of the different objects of training, a very complete series; and it seems superfluous to remark that the greatest part of the experiments have been made upon horses destined for the army and upon hunters.

In summing up, it seems, indeed, that the methods praised by Captains Chervet and De Colbert have opened up a fertile field in the domain of equitation.

The diversity of methods of training undertaken by these officers has always put in evidence: 1st. Sureness of progress; 2d. Rapidity of results; 3d. The quality of the gaits and the comfort that the rider gets in consequence.

[NOTE.—I have used the apparatus described in the above articles on several horses; the longe but little, the rein considerably. I can see that there is much merit in both, but my opportunities have been limited, and I am not satisfied that as much merit attaches to them as is claimed. The rein was tried, in the crudest possible fashion, on a horse in Troop C, Fifteenth Cavalry. He was a fine big horse, but very hard to hold—so hard that his rider, a specially selected strong man and a careful rider, never could draw his saber; he needed both hands to keep the horse in ranks. With a plain snaffle he was completely unmanageable, both in and out of ranks. Captain de Colbert's rein was put on him, applied to a watering bridle, and a recruit rode him easily at drill with it. It was tried with equal success on other horses with ruined mouths. It is hardly fair to the bridle to test it on green horses, so many things other than the bitting enter into their education. The little I have tested the idea set forth in the above articles, convinces me that it has a positive value, and that it deserves a thorough test.—TRANSLATOR.]



[All books reviewed may be purchased from the Secretary, Staff College, Fort Leavenworth, generally at reduced price.]

Staff Rides.* In this little book of fifty-five pages the author undertakes to explain what "staff rides" are, which, it appears, have been lately introduced into the scheme of instruction of British officers. He also describes how such "rides" are conducted. They may not be rides at all, but may be done on foot: the author thinks bicycles are the best means of transportation to use in connection with staff rides.

A "staff ride" is simply a tactical or strategical exercise on the actual ground, in which the troops on both sides, and all the conditions, are imaginary; and the officers engaged in the exercise occupy hypothetical positions of duty or command. Various terms have been invented for these exercises, none of which define them. The term "staff ride" does not even suggest to one unacquainted with it what it means. It is, however, not quite so unmeaning as the term we have used in our service for similar exercises: namely, "terrain ride:" which being interpreted simply means "ground ride."

*"STAFF RIDES." By Captain A. H. Marindin, the Black Watch. Hugh Rees, Ltd., London, Publishers.

This little book does what it undertakes to do, and besides, has a chapter on "Reconnaissance Reports" which contains many useful suggestions for very young officers, and some by which older ones may profit.

"Adjutant's Manual."* This is a handy little volume which has recently issued from the press of John Wiley & Sons. As its name suggests, it is a manual for use of post adjutants, defining their duties, and stating clearly how these duties should be performed. A large amount of information is contained in a small space, and while the book would be very useful and handy on any adjutant's desk, it is especially valuable for the use of State troops and volunteers, and every battalion and regimental adjutant of the National Guard should have a copy for daily consultation.

M. F. D.

Syllabus of Davis's International Law.† This handy little book is intended as a time-saver. It contains all the definitions of the original work and the gist of nearly all the argument. No original matter appears, and, as the author says, it is not intended to replace the original subject, but to be useful to those who are already familiar with it, in cramming for examinations.

It exhibits the bony skeleton of Davis's International Law. By itself it can hardly be of any use, unless as an index to further study. The small size of the book, and the amount of substance it contains, suggest the value of a handbook of information containing an epitome of all subjects studied by officers, to be used in the field, when reduction of baggage makes the abandonment of an officer's library indispensable.

C. C.

*"ADJUTANT'S MANUAL." By Courtland Nixon, Q. M. Dept., U. S. A. John Wiley & Sons, New York, Publishers.

†"SYLLABUS OF INTERNATIONAL LAW." By Lieutenant C. A. Seoane, Third Cavalry. Franklin Hudson Publishing Co., Kansas City, Publishers.

An Army and Navy Dictionary.* This is a convenient little compilation for the layman to own who is interested in military and naval affairs, and reads military and naval literature; and for the landsman it contains many technical and slang sailor words with which he may not be acquainted. For the military student, however, there is scarcely an item of information in it which he must not already know, if he has got beyond the primer of his professional studies.

From its omissions and inaccuracies, as well as from some of the words included, one must judge that the dictionary has been hastily compiled to meet an immediate demand. Among such, we note "General Service and Staff College," an institution which no longer exists as defined, but by War Department orders has given place to the "Infantry and Cavalry School and Staff College" at Fort Leavenworth. "Naval Institute" is defined, but the precisely analogous institutions pertaining to the land forces are not honored: namely, the "Military Service Institution," the "Cavalry Association" and the "Infantry Association." The term "staff-ride" is not included, and to the book's credit the French word "terrain" is also excluded.

"Aparejo" is defined as "a kind of Mexican saddle fastened on a pack-animal by means of a long rope, used extensively in army pack-trains." The aparejo is not fastened on by a rope, but is strapped on, and the long rope is used to fasten the pack on to the aparejo by forming the "diamond hitch." The "diamond hitch" is not defined, nor are any of the details of the pack outfit.

"Boot-lick" is deemed worthy of definition as a military or naval term, while such familiar soldier words as "striker," "jaw-bone," "how!" and "hike" are omitted.

*"AN ARMY AND NAVY DICTIONARY." Compiled by Major John P. Wisser, U. S. Army, and H. C. Gauss, Esq., of the Navy Dept. L. R. Hamersly Co., New York, Publishers.

The Auxiliary Officer's Handbook.*

"The Auxiliary Officer's Handbook of General Information, and Company Officer's Lecture Book," is a small volume of 230 pages into which the author, Captain R. F Legge, of the British Army (militia), has put a vast amount of information that will be found useful to an officer of the English Auxiliary Forces, and much that is both interesting and instructive to American Volunteers or Regulars. The little volume contains chapters on all subjects studied by our young officers during their three years' course in the Garrison School, and, in addition, some things that we take in the Infantry and Cavalry School.

His opening chapter on "Discipline," in which he dwells in sincere language on the strict discipline in all armies, is well worth reading. He says:

"In the order of its importance, I have placed the chapter on "Discipline" first in the book. * * * A fighting force is either disciplined or undisciplined, there can be no in-between, and soldiering, when no discipline exists, is as useless as it is farcical. It is not speaking too strongly to assert that discipline in the soldier is the keystone of all success in war."

Continuing, under "Fire Discipline," he says:

"Fire discipline trains a man's fighting intelligence to such a degree that, though his mind be temporarily paralyzed by danger and superior control no longer exists, his instinct is to fight on alone, and to do the right thing under the circumstances. It comes into play only when within decisive range of the enemy."

The chapter (III.) on "Maneuvers" is short and to the point, but valuable to us all:

"The result of a field maneuver should not be the main thing looked for; it makes little difference who gets the best of it, and the whole point is lost if that is made the important lesson. Ninety-nine times out of a hundred the result in actual warfare would be different."

*"The Auxiliary Officer's Handbook." By Captain R. F. Legge, British Army (Militia). Gale & Polden, Aldershot, Publishers.

In this he appears not to agree with so many umpires at our maneuvers, who are prone to rule half a company of the infantry or a whole troop of cavalry off the field as "dead," because, forsooth, they have dared to come within fair range of either the infantry or artillery fire of their opponents, or who rule a battery of artillery out of action as "captured" because a troop of cavalry charges it. He apparently agrees with many of us, that these umpires would do well to read military history, or better still, follow the making of it in Manchuria.

Then follows chapters on "Marching," "The Attack," "The Defense," "Skirmishing," "Outposts," "Advance Guards," "Rear Guards," Reconnoitering," "Scouting," and "The Importance of Judging Distance," etc., in which the instruction is much the same as laid down in Wagner, except that in Captain Legge's book all that is really necessary for a Volunteer officer to know is contained in about fifty pages.

There are several short chapters on what we call "Small Arms Firing," but which he calls "Musketry," "Field Firing," "Word of Command" and "Miniature Practice With the Service Rifle." Our new Firing Regulations cover this subject more fully and better.

Then comes an extremely valuable little chapter on "Framing Orders," followed by one on "Military Law," which is too brief and not applicable to our service.

"Field Sketching and Map Making" contains probably enough for a Volunteer officer to know for all ordinary purposes, but does not go into the subject deeply enough to satisfy the requirements of Regular officers. His chapter on "First Aid" is likewise too brief except as he says, for "auxiliary forces;" but if every volunteer knows and can practice all the simple remedies given by Captain Legge in his short chapter of five pages, he will be able to get along until more expert medical aid arrives.

The chapter on "Etiquette," although mostly applicable to the British service and abounding in terms and phrases not familiar to us, contains several paragraphs that many of our Regular officers would do well to follow:

"*Salutes.*—The salute of a private soldier or noncommissioned officer should be scrupulously and courteously acknowledged, and officers should bear in mind that there is only one method of saluting or returning a salute, and that is the way laid down in the drill book. The salute with two fingers raised to the cap, or to answer a salute by raising the cane to the cap is the essence of slackness and resembles the manner adopted by grooms and cabmen.

"*Funerals Passing.*—Officers in uniform should always salute a coffin, be it a civilian or military funeral, standing to attention until the hearse has passed.

"A lieutenant or second lieutenant is never addressed as such, either on parade or socially, nor is his rank used in writing to him, except on official letters."

There are also some instructive paragraphs on the etiquette of calling on garrison and regimental messes, on regiments, returning same, etc., which are applicable to officers in all armies, and with the customs of which many officers are not familiar.

The little book is full of meat valuable for the enthusiastic officer, and there is much in it that will assist one in preparing short lectures; unlike so many writers on military subjects, Captain Legge does not repeat. When he says a thing once he considers that sufficient, and seems satisfied to close his volume with 228 pages.

The majority of our writers become so verbose in their attempts to produce a three dollar volume instead of a dollar one, that the book loses much of its usefulness by having the knowledge contained in it so smothered in words, and repeated so many times in as many different wordings, that the real ideas of the writer cannot be determined, and a clear and concise definition cannot be found in the book.

Although the sequence of the chapters does not appear to me to be logical, "Camping" being thrown in between "Outfit Allowance for Volunteer Officers" and "Test for Meat, Bread and Water" in Part III., instead of being at the beginning or end of Part I., yet the milk of the cocoanut is all there, and it is to be commended for clearness, brevity and conciseness. The little book is worthy of a place in every officer's library. M. F. D.

Indian Fights and Fighters.* This volume is the fourth one of the "American Fights and Fighters" series written by Doctor Brady. There are many intensely dramatic incidents incorporated, the most important being the Fort Phil Kearney and the Custer massacres; the "wagon-box" fight on Piney Island between Major Powell's detachment of thirty-two men and Red Cloud's band of 3,000 warriors; and last and best, George A. Forsyth's fight between his "Rough Riders" and Roman Nose's band on the Arickaree fork of the Republican River. The book abounds with deeds that "ring like a trumpet-call to American manhood."

There are many illustrations and a dozen maps and plans. The book, however, lacks a general map of the Northwest country, which makes it quite impossible for the uninitiated reader to follow clearly the events recorded.

The author objects to the application of the term "massacre" to the Phil Kearney and Custer affairs, and his point is well taken. Nevertheless, right or wrong, that is the name by which they are known, and we doubt if the public can be made to change the misnomer.

Custer's story takes up about one-half the volume. The author concludes that Custer disobeyed his orders in pursuing and attacking the Indians as he did. He has spared no pains to get at the facts, and he gives in an appendix original contributions to the subject from various pens. It is an old, old story, and has been threshed out pretty fully by the representatives of both sides. While all must admit the industry of the author, and his fair, unbiased attempt to get at the truth, yet all will not agree with him in his limitations of the interpretation of the celebrated Terry Custer order.

It seems inexplicable that General Miles should make the statement in his book that "we have positive evidence in the form of an affidavit of the last witness who heard the two officers in conversation together on the night before their commands separated, and it is conclusive on the point at issue" (disobedience of orders), and yet that he should fail not only to produce the affidavit, but even to name the

* "Indian Fights and Fighters." By Cyrus Townsend Brady, LL. D. McClure, Phillips & Co., New York, Publishers.

affiant. Such an affidavit if made by a trustworthy person would absolutely clear Custer's good name of any stigma whatsoever, and if the affidavit is at present in existence it should be produced, no matter whom else it might injure.

The author is doing a great service for the army by thus recording its deeds, and we wish him the same success in his forthcoming books that he has attained in this stirring volume.

All officers of the army who have any original information concerning the Indian campaigns in the Northwest or Southwest, conducted since 1876, should send it to Doctor Brady, so as to enable him to reach a just conclusion and to be correct historically. This is a duty that officers owe to their regiment or corps, and to the army, and we hope that the author's appeal for such information has not been made in vain.

P. E. T.

The Development of Tactics.* The second edition of this work, enlarged and revised by its author, Dr. T. Miller McGuire, Barrister at Law, Inner Temple, London, has recently reached our table.

The first edition appeared March 1, 1904, and was compiled at very short notice, to be used as a text book by candidates for the British Army. One of the subjects in their examination is "History and Development of Tactics," and, as the War Office has never authorized any text book on the subject, Dr. McGuire prepared the volume largely from his own notes, in order that candidates might have something definite on which to commence their studies.

The book scarcely appeared from the press before the Regulations were altered, requiring the subject in question to cover the development of the three arms from 1740 to the present day. In order to meet this requirement Dr. McGuire has revised and enlarged the work to cover the period from Frederick the Great to the Boer War, and even goes as far as to include some valuable conclusions from the Manchurian War, as late as the battle of Kin-Chow. The Doctor's introduction is very interesting:

*"THE DEVELOPMENT OF TACTICS." By T. Miller McGuire, M. A., LL. D., Inner Temple, Barrister at Law. Hugh Rees, Ltd., London, Pubs.

"The definition of tactics is simple enough and involves no subtile refinements of phrase. Tactics are the maneuvers whereby an enemy is defeated on the field of battle, or delayed during a retreat, or surprised in his cantonments, or reconnoitered in force, or driven out of houses or woods, or whereby rivers and mountains are crossed in spite of resistance. The tactician supercedes the strategist when the troops come within the range of hostile weapons.

"The theater of operations is the sphere of the strategist. * * * The principles of strategy are eternal, to-wit: breaking a front or turning a flank, and concentration of superior force at vital points.

"The application of tactical principles depends on the modifications in weapons, their range, their striking force, their destructive power, and the greater or less quantity that can be carried on the person of the soldier, or with convenience in wagons; on sound men; on sound horses; on a lavish supply of necessaries; excessive supply if possible, as the case may be, of arrows, or javelins, or bullets or shells.

"It may be justly said that tactics should be changed every ten years if a State hopes to retain superiority: constant study, provident care, are always essential. *Peace gives a chance of being ready for the next war.*

* * * * *

"Officers cannot be improvised, and an efficient professional education for soldiers is far more valuable to individuals and to nations than is the education of lawyers or of any other class of the community."

In the opening chapter the author describes "The Details of Armament," beginning with the time of James I. and matchlocks, and leading up to our present small arms. Most of the chapter, though, is devoted to developments in field artillery, commencing with the few pieces which Frederick the Great had in his army, showing how necessity compelled him to increase this arm, until, finally, he depended largely upon it to take the place of his depleted infantry. From Frederick he goes to Napoleon, and his increased tactical employment of artillery, and the important effects produced by his concentration of the fire of this arm. Among many interesting statistics he gives the following:

"The following comparative statistics have been given for the war of 1870–71, based on the wounded admitted to the hospitals. On the German side eighty-eight per cent. were wounded by infantry fire, five per cent. by machine guns, five per cent. by artillery, and two per cent. by swords, bayonets and lances."

The author closes his chapter on "General Details of Armament" by the appeal of Lord Roberts, fresh from his South African experiences, to the patriotism of the voters of Great Britain:

"Let me say how much I trust that the whole Nation will take the dearly bought experience of the war in South Africa to heart, and do all that is possible to encourage good shooting in the army. No other qualifications will make up for inferior shooting. However brave our men may be, however well drilled, however well set up, however well disciplined they may be, and however capable they may be of great endurance, or of riding across the most difficult country (admirable and desirable as all these qualifications are), the men will be valueless as soldiers, if they are not experts in the use of the rifle; * * * for as I have endeavored to point out, it is on skillful rifle-shooting that the efficiency of our army absolutely depends."

As examples of the development of tactics and of the gradual changes which have taken place in battle-tactics, the author describes and discusses several modern battles, beginning with Leuthen, 1757, and ending with Elandslaagte, 1899, showing a carefully prepared map in each case.

The book is more historical than original, but it contains much that is both interesting and instructive, and it deserves a place in any military library. It cannot be said that it is well arranged for a text book, but the meat is there, and the student can cull and arrange it for himself. The main criticism lies in the usual show of British egotism, wherever British troops appear, using the names of officers and organizations in the familiar war correspondent style, which should be avoided in a treatise on tactics, and especially in a text-book. M. F. D.

Military Government and Martial Law.*

The second edition of Major W. E. Birkhimer's "Military Government and Martial Law" has just left the press of the Franklin Hudson Publishing Company, of Kansas City, Missouri.

The author, in his introduction consisting of twenty-three pages, gives the distinctions, as some understand it, between military government and martial law. He makes the greatest distinction turn upon the question whether the territory, militarily occupied, is enemy territory or loyal territory. In the first case the government exercised is military government; in the second, martial law. Without considering the premises upon which this view is based, it is sufficient to state that the author carefully preserves this distinction throughout his work. He has divided his book into two parts, corresponding to the classes of the government mentioned above, giving to military government sixteen chapters and to martial law thirteen.

In the first part the author starts at the very beginning of his subject, the power to declare war. From this rather constitutional discussion he takes the next step, the right to establish military government. Having once established this government, the first question to arise naturally is that regarding the allegiance of the inhabitants of the occupied territory. This is his third chapter, and is followed by the next, showing how far this allegiance can be compelled, which, of course, is only over that territory held by a sufficient number of troops to render the government effective.

The author then proceeds to the question of enemy territory, the right permanently to acquire the same, or to hold it temporarily. He cites cases like that of Castine, Maine, and gives the principles of conquest of the British government.

He goes into the effect of occupation on local administration, and shows the important consequences of regarding *occupied* territory as foreign. The important case of Upper

* "Military Government and Martial Law." By Major W. E. Birkhimer, Artillery Corps, U. S. Army. Franklin Hudson Publishing Co., Kansas City Publishers.

California in the Mexican War is treated of, and the war tariffs in connection therewith. DeLima vs. Bidwell, the Porto Rico case, is given, as well as remarks upon the occupation of Cuba by the United States. Napoleon's occupation of Spain is cleverly shown by the author to be a complete system of military government, intended to reduce the Spaniards piecemeal into subjugation, with a view to the subversion of their kingdom.

Chapter VIII. should be carefully read. It is upon the general proposition that all inhabitants of one belligerent are enemies of the other, and discusses levies en masse, guerilla warfare and war rebels. A survey of this subject, more marked for just and humane consideration, has not appeared from the pen of any writer. The guerilla banditti of the Philippine Islands and South Africa are carefully treated, and an idea of the author's broad mind and comprehensive view of his subject can best be attained by giving a few of his sentences:

"The experiences of the United States troops in the Philippines and the British in South Africa demonstrate how annoying, persistent, not to say really formidable, guerilla warfare may become even against regular troops. The fact that renders it difficult to the latter is the impossibility of telling friends from foes, or the preventing a man extending the right hand of friendship one moment, and shooting from point of vantage the next, and so indefinitely. Concentration camps are one effective instrumentality for handling the population, all beyond their borders being liable to be shot. Both in South Africa and the Philippines every practicable attention was given to the comfort of those forced to stay within the boundaries of these camps: this fact the official records show. * * *

"The extraordinary, not to say unprecedented, leniency of the United States Government in dealing with the Filipinos after all semblance of regular fighting was abandoned by the latter, and guerilla practices alone resorted to, must have surprised the civilized world. The chameleon character of these people just referred to—pretended friends one moment, enemies in ambush the next—placed them outside the pale of civilized warfare, and justified severest measures of repression. The measure of mercy toward them was filled to overflowing.

"While this was true, there were some sporadic cases of cruelty practiced upon the natives by the soldiery, in violation of the laws of war, which peremptorily forbid torture. The disposition to indulge such practices arose probably out of the diverse policies of the two parties contestant, the United States pursuing one of beneficence, even in derogation of its rights under the laws of war, the Filipinos pursuing their course of treachery and unquenchable hate in utter disregard of these laws. As that which was legitimate was not availed of to meet this course of savagery, the illegitimate crept in."

Chapter IX. is a vastly instructive one. Its title is, "Laws Obligatory Within Occupied Territory." There is a discussion of the jurisdiction of war courts, how they have been established in our past history; and cases are cited where the Supreme Court has constantly upheld the power to establish such courts and the exercise of their jurisdiction. In this chapter is the treatment of Military Commissions and Provost Courts, showing the criminal jurisdiction of the one, and the general jurisdiction of the other. The liability of camp followers to trial shows the width of military jurisdiction alone, and cases are cited to show that, however long the occupation of enemy territory may continue, the tribunals of the country can have no jurisdiction over the members of the invading army. And here, as elsewhere all through the book, cogent cases are given to the very question in point, and many of them are cited at some length.

Chapter X., on the rights regarding personal property, is long, but it exhausts the subject. The matter is brought right to the present by such cases as the following: The Dagupan Railway; the case of Doreteo Cortes of Manila; cases arising in Porto Rico. And there are references to the binding of the municipalities of Cuba to large debts.

His discussion of rights regarding public property, trade with occupied territory, and insurrections against military government, are in line with all authors of good repute. On these subjects such illustrations are given as, Smith, Bell & Co., Manila; Sulu Archipelago; Experiences in the Philippines and the policy of our government there.

We next have an important chapter on "The Responsibility of Commanders Under Military Government." This is a chapter that should be carefully studied by all of our officers. The author brings prominently into view how this responsibility on foreign soil is largely a military one; but if it be in rebel territory, or territory that likely will be annexed, political considerations enter, and the question is no longer purely a military one. He also brings out the responsibility to neutrals, and to the subjects of one's own state. He points out the analogy between a commander of enemy territory and a judge upon the bench; that both should be measured by the same rule while exercising discretionary powers. He gives the case of Mitchell vs. Harmony, and a careful study of this case will make clear to most officers the scope of their duties and how far they may or may not expect protection, when later called upon to justify their acts.

His last two chapters on Military Government treat of tribunals of that kind of government, and when that government ceases.

In Part II. the author gives a history of martial law under English jurisprudence, and the theory of the same in the United States. He shows how martial law supplements the common law, and justifies the nature of the necessity of it. The great question of Federal authority to institute martial law, is discussed from both executive and congressional standpoints. Numerous cases are cited of martial law in the States and Territories; how it has been administered, and through what tribunals it has been and should be promulgated.

Almost the greatest every-day, practical value of the work is in the two chapters on the "Responsibility of Commanders" and of "Subordinates under Martial Law." An officer who is thoroughly acquainted with the author's treatment of this perplexing subject, will find few cases that he will not be competent to handle. And this subject is of the highest importance to the second lieutenant, as well as to the higher commanders; for one of the lower rank may find himself with a small platoon on a side street where quick decision

and accompanying action are necessary. Every officer should have this volume in his library for the perusal of these two chapters, if for no other reason.

The appendices are well chosen and pertain to matters so constantly arising in war that the book then becomes a sort of ready reference in some particulars. As for instance, General Orders No. 100, 1863, is given and compared with the corresponding articles of The Hague Conference Code, 1899. The instructions for the government of our armies in the field, from the New Field Service Regulations, with other articles of less importance, are included.

It is not easy to understand how one can obtain as concise a statement of the subjects treated of in this volume anywhere else. A person can, by the same hard work that the author has spent upon the subject, dig out the law of military government and martial law, but he must come to the same conclusions as does the writer, after an immensity of labor. In writing this book, Major Birkhimer has done the army a great service, in an able manner, and attentive study of his work will make officers so familiar with their duties that people hereafter will not have occasion to look upon martial law as the bête noire of all that is terrible and unholy.

J. F. BELL
Brigadier General, U. S. A.

Military Studies.* The eighth volume of the International Military Series consists of five military studies by Frederic Louis Huidekoper. The subject of the first study is, "Did Grouchy by disobedience of orders cause the defeat of Napoleon at Waterloo?" The second is a study of the oblique attack, in which the battles of Kolin, Rossbach, Gravelotte, and Leuthen are compared. The third is a comparative study of Jena and Mars la Tour. The subject of the fourth is "Napoleonic Strategy," and of the fifth is "The Campaign of Eckmühl."

All these studies, except the first, which was published

*"MILITARY STUDIES." By Frederic Louis Huidekoper. Franklin Hudson Publishing Company, Kansas City, Publishers.

in the *United Service Magazine*, have been published at different periods in the *Journal of the Military Service Institution*. They are valuable contributions to the military literature of recent times: and especially is this true of the studies on "Napoleonic Strategy" and "The Campaign of Eckmühl," which show great diligence and research.

The reader will find that these studies cannot be read and digested at a sitting: to be fully appreciated they must be studied with diligence and care, and the movements must be carefully followed on the maps. When read in this way, the book will be found most instructive to the military student.

In the preface the author says:

"The writer realizes thoroughly the force of the argument with which he has so often been confronted, as to the uselessness of modeling the tactics of to-day upon those of commanders of the past, however great; but although the improvements in ordnance, transportation and other increasing facilities are constantly modifying tactics, no one has yet succeeded in refuting the maxim that the fundamental principles of strategy always have been and always will be immutable. Moreover, there is not the slightest doubt that every officer, however well versed otherwise in military science, can draw much valuable information from a careful and exhaustive study of the campaigns of such generals as Napoleon, Frederick the Great and Von Moltke. 'It does not take long for contemporary pigmies to hide the giants of time past; the old horizon of renown is ever covered by thicker mists, and only a few colossal figures remain uneffaced.'"

These words are timely, for of late there has been a tendency among a few military students, who have made but a superficial study of the subject of strategy, to arrive at the conclusion that the principles are not unchangeable. Or, as they put it, that there are no principles of strategy, simply rules which are constantly being modified and changed. Increased efficiency of modern firearms, greater facilities for the movements of troops, and improvements in methods of dispatching orders have made so many maneuvers impossible in the present day which were possible in the past, and so many possible in the present day which were impossible in

the past, that upon first thought even some able students of military matters have been slightly led astray, and have hastily come to the conclusion that the principles of strategy are constantly undergoing a change. As a matter of fact "the fundamental principles of strategy always have been and always will be immutable." Inventions and discoveries have changed the methods of carrying out these principles, but the principles themselves are unchangeable. Taking advantage of wireless telegraphy, a general or admiral may to day find it a great deal easier to frustrate his enemy and concentrate his forces upon the vital spot of the theater of operations, or may, by reason of his enemy's being able to take advantage of this new discovery, find it much more difficult to execute these maneuvers; but the principle of a concentration of forces—of bringing a stronger force upon the battlefield—is as necessary and true to-day as in the days of the great Napoleon. "The fundamental principle," says Jomini, "upon which every military combination rests, is to operate with the greatest mass of our forces, a combined effort, upon a decisive point." Clearly this principle is true for all time, and applicable alike to armies and navies.

Mr. Huidekoper's study on "Napoleonic Strategy" is the best summary of the subject in the English language; probably the best in any language. No one can read this chapter without being impressed by his clear insight into Napoleonic methods.

After a thorough study of Napoleon's campaigns, the author thus sums up the essential principles of stategy which must be observed:

"1. To keep one's forces united.
"2. Not to be vulnerable on any point.
"3. To move with rapidity on important points.
"4. To give one's self every chance possible to assure victory on the battlefield by there uniting all one's forces."

The author adds:

"These essential principles Napoleon applied to his own campaigns, which are remarkable for five important charac-

teristics, viz.: 1. *The initiative at the commencement of hostilities;* 2. *One line of operations*; 3. *The unity of the forces;* 4. *The rapidity of movement on decisive points;* and 5. *The concentration before battle.*"

In the last paragraph of the book the results of the campaign of Eckmühl are thus vividly summed up:

"In six days after arriving at Donauwörth, Napoleon had extricated his troops threatened with disaster, brought order out of chaos, withdrawn Davout from his dangerous isolation, concentrated on his own center, separated and driven the Austrian left back to the Inn, gained possession of the enemy's communications, and had defeated the Archduke and forced him across the Danube. In three days he had fought three successful pitched battles and had killed, wounded or captured more than 24,000 men. This 'Five Day's Campaign' is unique in history—alone it would have sufficed to immortalize such consummate genius, for never was success more brilliant or decisive and never was it better deserved. In his dying days at St. Helena the Emperor recurred with constant pride to the strategy of Eckmühl; and in his own commentaries declared that 'The battle of Abensburg, the maneuvers of Landshut, and the battle of Eckmühl were the most brilliant and the ablest maneuvers of Napoleon.'"

In this volume Mr. Huidekoper has shown marked ability as a writer of military history, and we trust he will continue his studies. We should like to see from his pen a detailed account of the campaign of 1814 in France.

The study of Napoleon's campaigns always has been and always will be most instructive; for take him all in all, he was the greatest master of war that the world has ever known, possibly the greatest that the world will ever know. "The series of Napoleon's successes," says Professor Seeley, "is absolutely the most marvelous in history. No one can question that he leaves far behind him the Turennes, Marlboroughs and Fredericks; but when we bring up for comparison an Alexander, a Hannibal, a Cæsar, a Charles, we find in the single point of marvelousness Napoleon surpassing them all." "Napoleon," says Colonel Dodge, "collated the knowledge of war which existed in his youth, and out of

it wrought so perfect a system, that he is the one captain whom all modern soldiers strive to copy." "He was," says Lord, "a military prodigy equally great in tactics and strategy, a master of all the improvements which had been made in the art of war, from Epaminondas to Frederick II."

What a career! First, that wonderful Italian campaign, which, in brilliancy of strategical combinations and marvelousness of results, surpasses every other campaign in the world's history; then the Egyptian campaign, where Bonaparte came within a hair's breadth of founding a mighty empire; then the campaign of Marengo, where for a moment his star seemed about to set in darkness, then like a flash rose again in its former splendor; then that gigantic war with England, which, before it terminated, involved nearly the whole of Europe in deadly conflict, and shook the very foundations of Continental governments. During this mighty conflict, which began with the projected invasion of England and ended with Napoleon's final defeat at Waterloo, the armies of Austria, Prussia, Russia, and Spain were conquered, nations were crushed, thrones were crumbled, coalition after coalition melted away before the attacks of this matchless warrior's victorious troops; and states, provinces, and cities were added to the French Empire, until, finally, at Friedland, he reached the height of his power, and ruled directly or indirectly over the greater part of Continental Europe. Then came his reverses; the campaign of Russia, the battle of Leipzig, the abdication and exile to Elba, and the return to France, where for a brief period his genius again blazed forth with its former splendor; then the final acts of the great drama—his fall on the fated field of Waterloo—his banishment to the rock of St. Helena.

What a stormy career was his! His life was almost a continuous battle Even his death took place during a fierce storm, that beat tempestuously upon the rocky shores of that lone island; and in the delirium of the approaching end, amidst the shock of the billows and the battle-like roar of the waves, the great captain imagined himself once again at the head of his army in fierce conflict on the tumultuous battlefields of his earlier days. H. H. S.

Editor's Table.

A FILIPINO PROCLAMATION.

The following is the translation of a proclamation found by Captain Hartman, First Cavalry, with other insurgent documents in an old sugar mill near Bauan, Luzon. It is given as a sample of the kind of war news the inhabitants of the Islands were furnished by the insurgent authorities:

"Be it known to everybody that this telegram was received this morning, and reads as follows:

"'Saturday and Sunday, the 4th and 5th of the present month, a battle took place, and there were killed on our side less than two thousand individuals, including those who were in the Church of Paco.

"'On Monday our President descended upon Caloocan, and in the battle which took place there, three hundred Americans were killed, and we captured one general and seven hundred of his soldiers.

"'On Tuesday we cut them off and our illustrious chief of operations, Señor Montenegro, took about four hundred Americans and one general as prisoners.

"'On Thursday we captured one general, and many Americans were killed.

"'On Saturday at Parañaque a fight took place, and nearly all of the advance guard of the Americans were killed, and afterwards they bombarded Parañaque. Since Thursday they have also bombarded Caloocan and Navotas, but the Germans intervened, and now tranquillity reigns supreme in the suburbs of Manila. General Otis has implored for the suspension of hostilities and for the termination of the war through diplomatic means; the answer of our illustrious President, Señor Aguinaldo, was that the question must be decided through war, as it had commenced with war.

"'BATANGAS, February 13, 1899.'"

BILL TO PROMOTE THE EFFICIENCY OF THE ARMY.

A proposed bill has been received from an officer of the cavalry service, and is presented in the pages of the JOURNAL with the hope that it may be discussed in later issues by other officers. It is hard to see how such a measure could

be objected to by any officer who believes himself physically equal to the duties of his office: and any conscientious officer who does not believe himself equal to his duties should welcome his retirement from active service.

The bill is as follows:

"1. In addition to the examinations now required by law for the promotion of officers, every officer in the line of the Regular Army, above the rank of captain, before each and every promotion, shall be physically examined by a Board of Medical Officers of the Regular Army, and if found permanently disabled for active field service, he shall be promoted, and at once transferred to the Unlimited Retired List.

"2. Before being ordered upon active field duty, and also on the prospect of war, every officer, above the rank of lieutenant-colonel, shall be physically examined by a Board of Medical Officers of the Regular Army, and if found permanently disabled for active service, he shall be at once transferred to the Unlimited Retired List.

"3. During peace, every officer of the line of the army, above the rank of lieutenant-colonel, shall be physically examined, at least once each year, preferably before June 30th, by a Board of Medical Officers of the Regular Army, and if found to be permanently disabled for active field service, shall be at once transferred to the Unlimited Retired List.

"4. All officers above the rank of lieutenant-colonel, now on the Retired List, shall be transferred to the Unlimited Retired List, and all officers hereafter retired, shall, if of higher rank than that of lieutenant-colonel, be placed on the Unlimited Retired List."

ARGUMENT.

After officers of our army reach the grade of major, they are no longer subject to examinations. As they have passed many previous mental examinations, it is presumed that they are mentally competent. The same rule will not apply when it becomes a question of physical ability.

Officers of the junior grades in our army are young men in the robust period of manhood, and are subject to few physical changes. In the higher grades, the officers, as a rule, are of more advanced years, and therefore more liable to physical changes; and yet we have the anomaly of requiring young officers to be physically examined for every

promotion, and dispensing with such examination for all officers above the grade of captain. The evils resulting from our present system are well known.

It is believed that these would be corrected by the above bill.

A CHIEF OF CAVALRY.

To the Editor of the Journal:

Recent events have had a disturbing effect on the cavalry service. The persistent talk about reduction, which has been kept up for the last two years, has probably been more demoralizing to the cavalry than a lost battle would have been. When a man sees his prospects for promotion set aside, and all his hopes and ambitions blown lightly away, he feels all the bitterness of defeat. The effect of this agitation is extended to those who enter the service from outside. For two years no one has entered the cavalry without listening to the dismal prognostications of his best friends. Under the circumstances, it takes as much courage for a cadet at West Point to apply for cavalry, as it does to lead a forlorn hope. Moreover, we are not permitted to think that all this smoke does not mean a big blaze somewhere; for we are told that the matter has been seriously considered by the President, by the Secretary of War, the Chief of Staff, the General Staff, and by the Committees of Congress.

While the discussion goes gaily on, it is a remarkable fact that most of the other arms of the military and naval services have been able to show that increase and not reduction was absolutely necessary for them. As instances of this, look at the bills for increase of one kind or another, either approved or already accomplished, in the case of Marines, Blue-jackets, Medical Department, Signal Corps, Engineers, Puerto Rican Troops, Philippine Scouts, Chaplains, Ordnance and Coast Artillery. Apparently the delay in completing all of these changes is due to the fact, that the reduction of the cavalry seems to claim first consideration.

The dental surgeons and the infantry, I believe, alone retain their *status quo*.

And in the midst of it all, the cavalry has not been heard. Without a recognized head or a spokesman who is qualified to speak, it is "the buffet of the idle tongue," and on fortune's cap the broken feather. A number of cavalry officers have written letters to members of the Executive Council of the Cavalry Association, suggesting that something should be done. Truly something should be done, and correct it is that the CAVALRY JOURNAL is the proper medium for the exchange of views; but the JOURNAL is the servant of the Association and not qualified to speak on matters of policy. The JOURNAL is patiently waiting for members to speak for themselves, and take a hand in this matter of army organization.

It is almost unnecessary to recall that beneficial changes in military and naval matters never come without discussion and agitation for years. It was ten years before the infantry got their three-battalion organization; the question of a General Staff was agitated for a longer time; examination for promotion and lineal instead of regimental promotion were all the results of years of discussion in the service papers.

Unquestionably the first idea of those who recommend and make the laws is to provide an efficient army in all its branches, and they will not knowingly discriminate against any particular arm. But in the absence of full information and well digested schemes, there is always danger that propositions may find favor which have not been sufficiently studied and discussed. In military matters we have not always been guided by the light of experience, as witness the almost total elimination of cavalry from our army for fifty years following the Revolutionary War; the dismounting of the cavalry immediately after the experiments with militia in the Florida War; the absence of cavalry in the Federal Armies in the first years of the Civil War.

If there are any good reasons why the cavalry of the U. S. Army should remain as it is, be increased, reduced, changed

in organization or otherwise, it is a good time to bring it out. I for one suggest that we need a CHIEF OF CAVALRY.

VELOX.

To the Editor of the Cavalry Journal:

The January number of the JOURNAL contained a short article styled "Our Cavalry an Orphan," which seems to me to be very much to the point. Our cavalry is not all that it should be; even its most zealous advocates would be glad to see it accomplish more than it does; but to do this will require more uniformity and particularly more opportunity.

The War Department issues general orders prescribing certain months for drill and field exercises, others for target practice, and still others for theoretical instruction and school work. To the post commander is left the execution of these orders, and upon his initiative will depend almost entirely the thoroughness of the instruction and the efficiency of the troops.

The cavalry is inspected probably twice a year, as are other troops—once by the Division Inspector, and once by the Department Commander. Each makes his notes, which are embodied in his report of what he has seen. Here the matter generally rests. There is no comparison of the reports on the work of the cavalry in the Department of Texas with the reports of that in the Department of Dakota, or any other Department. The divergence in these reports may be ever so great as to mounts, equipment, instruction, enthusiasm and efficiency; yet there is no one to detect it. The Chief of Staff cannot possibly give his attention to such details.

A Chief of Cavalry is the one to whom these reports should be rendered, or better still, the one who should make the inspections. If the Department Commander and the Division Inspector happen both to be infantry or artillery officers, their criticism on the cavalry must of necessity be based on rather limited experience.

But the need of a Chief of Cavalry is not demonstrated in the lack of uniformity nearly so much as in the lack of opportunity. Before the artillery had a Chief, no doubt there

was great divergence in equipment and instruction, but that was insignificant as compared with the lack of attention and general neglect of the whole arm of service.

This is just what we are laboring under in the cavalry to-day—neglect. Inspectors, even the highest in rank, make favorable reports if arms and equipments are bright, horses fairly manageable, lines well preserved in marching in review, and advance-guards promptly thrown out. Add to this a few "stunts" in the riding hall, and the cavalry is all that it is expected to be.

Let us stop and consider what would be required of the cavalry in case of war. The first and simplest duty would be for a troop here and there as mounted escort for general officers and mounted orderlies. The second duty would be for squadrons and regiments to scout and reconnoiter two or three days in advance of the armies, or for one or two hundred miles over a border; or to threaten the enemy's communications miles in their rear; or to proceed on special missions, such as the destruction of arsenals, mills, storehouses, bridges, dams, locks, etc. Once in contact with the enemy, the third duty would be to fight advance-guard or rear-guard actions, charge the enemy's cavalry, or dismount and take its place in the line of battle.

The first of these duties is insignificant and unimportant.

The third is highly important, but our drills, target-practice and maneuvers fit us for it as well as can be in time of peace.

It is the second of these duties which constitutes the essential cavalry work; that which no other arm of service can perform. It is the one to which we should give most attention, and yet is the one in which, from lack of opportunity, we are most deficient.

Had we a Chief of Cavalry, how long would it be before he would make opportunity for this training? Such a thing would not be difficult of accomplishment. Many of our cavalry posts are close enough together to enable the cavalry from one to operate against that from another. Such is the case with Forts Riley and Leavenworth, Robinson and Meade, Clark and Sam Houston, Jefferson Barracks and Sill, Assinni-

boine and Keogh, Sheridan and Des Moines, Presidio of San Francisco and Presidio of Monterey. At isolated posts, like Ethan Allen and Chickamauga, a squadron could go out one hundred miles and operate back against another squadron.

This class of work would develop the true cavalry spirit in both officers and men, work of which the cavalry might be and should be proud. Few of us who have entered the cavalry within the last twenty years have ever had the opportunity to do any strictly cavalry work of which we can be proud. *Esprit de corps* must diminish, if it has nothing on which to thrive.

Give us a Chief of Cavalry who will know every regiment, and every officer in it; who by dint of his own enthusiasm will inspire others with more cavalry spirit; whose inspections will be thorough and searching, and at which every officer will quail if he is not up to the required standard; who will know whether every officer owns his own horse, and what kind of a horse it is; who will know the kind of a cavalry horse we should have, and see that we get it; who will condemn those and only those, that are unfit for service; who will see that we get at least six weeks of field service every fall, exclusive of maneuvers.

In going into the field for the duties specified under the second class, the cavalry should go light, without wagons or even pack-train. Each officer and man should carry an extra blanket and a change of clothing on his horse. The squadron quartermaster and commissary should be provided with enough cash so that he could purchase forage. Settled as our country is now, this will be possible once in twenty-four hours. Fresh beef and bread should also be purchased; the other components of the ration could be bought or carried, or both, *i. e.*, buy five days' supply at a time. We have in our saddle-bags nice little sacks, supposedly made for carrying sugar, coffee or salt; but who ever heard of a man's using one of them? Such things as this should remind us not of what we are doing, but what we are not doing. The squadron quartermaster and commissary should be given the cash (not blank vouchers) for making purchases; it will unquestionably be found that he can purchase in the field at less

than contract price at the post, the producer having no commission or freight to pay. Blank government vouchers are below par with the countryman who has never seen one before. This is the method of supply that should be adopted in time of war, and it should therefore be used in time of peace.

The field exercises of the squadrons and regiments should be prepared by department commanders. Squadron and troop commanders would learn how to scout the country for an enemy, and having found him, how to keep the contact; men, when a couple of miles from their troop, would acquire confidence, and not feel themselves lost and more concerned about getting back than about carrying out their orders. Men would learn how to use and care for their horses under field conditions. Squadrons of cavalry that had been in the field for a month or six weeks, as above, would feel like veterans; by the time they had had this field service for three years they would be so valuable to the country that no one would talk of cutting down our cavalry; they would say: "They are so good we cannot afford to let them go; let's keep them all."

MALVERN-HILL BARNUM.
Captain and Q. M. Eighth Cavalry.

PROMOTION BY ELIMINATION AND A RESERVE LIST.

The discussion of the question of promotion by another method than seniority, long the rule in our service, is becoming so animated that it is quite evident this important matter is receiving careful consideration from our officers, and it is hoped that the various suggestions will ultimately crystallize into a definite form acceptable to the majority of those most interested.

It cannot be doubted that the "selectionists" are in the minority—not that our officers are opposed to the principle of selection, but they fear that its application cannot be freed from the suspicion of injustice in the form of pull, politics or propinquity, for which reason the "eliminationists" preponderate.

Is a radical change necessary? The present plan of promotion was a step in the right direction, and went as far as at the time (1890) seemed advisable; but it now needs developing to accomplish the best results, which is *the retention on the active list of the most efficient officers only, and their promotion by seniority.*

The criticism on the execution of the existing law is that it does not eliminate any considerable percentage of officers, and leads to the unwarrantable inference that we are practically all up to the highest standards of mental, moral and physical efficiency.

While it is undoubtedly the fact that a large majority of our officers are above criticism, there are some instances in which it is not so, for which the army itself is responsible, since the law requiring examinations for promotion gives into our own hands the almost *absolute control of the character of our personnel.* It is true that we occasionally hear of the overruling of the recommendations of examining boards: but these are rare exceptions to the general rule of their approval, and it may be safely assumed that the examining boards determine the standard of military efficiency in our service.

If this is the case, are such boards so organized and conducted as to determine fully, in every instance, whether the candidate for entrance or promotion be mentally, morally and physically fit? We believe it is the opinion of the majority of officers that such is not the case.

It goes without saying that all examinations in each grade should be of equal severity—and hence it follows that all questions should be prepared at a central bureau—and the answers marked there. The details of the physical and practical examinations should also be sent to this central bureau and graded, and there, too, the record should be weighed. This has not heretofore been the case. The plan outlined is not novel, and its long use in the examinations for admission to the Military Academy has demonstrated its efficiency.

No matter how conscientious the members of examining boards may have been, there are certain influences that have had considerable weight in determining their findings. Among these may be mentioned comradery, family or other personal considerations, and last but not least, an unconscious recognition of a vested right, increasing with length of service, which an officer is supposed to acquire, entitling him to retirement with pay. This undoubtedly becomes a very important consideration when a board has to decide whether or not a brother officer is to be wholly separated from the service.

From the foregoing it logically follows that if the system of examinations for promotion is perfected and extended, local influences eliminated, and the right of the officer to a proportional share in his retired pay (which is in a sense detained pay) recognized, there is no reason why the unfit should not be made to "mark time," and the fit be advanced with but little change in present methods.

So much for the officer, but what of the government and the service? As a matter of fact the "unfit" for advancement might be very fit to perform certain military duties. It does not always follow that a good captain will make a good colonel, and there may be plenty of work for him to do as a captain, which there is no reason why he should not continue to do quite as well after as before being jumped by a junior who has shown himself fit for the higher grade. The officer who fails to pass his examination for promotion should be placed on a "*reserve list*," to be created by legislation, a waiting list where his "waiting pay" would be comparatively small, depending upon grade and length of service. From this list he might be assigned to such duty as he is considered capable of performing, and, while on this duty, his pay and emoluments should be those of his grade in active service.

In addition to the officers who have failed to pass the prescribed examination tests, the following classes should be included in the proposed "reserve list:"

1st. Those now on the "limited" retired list.

2d. All officers under sixty four years of age who in future shall be found unfit for active service by reason of physical disability originating in the line of duty.

3d. All officers who have reached a prescribed age while serving in any grade, say fifty-five years for lieutenant-colonels, fifty for majors, forty-five for captains and forty for lieutenants.

The "retired" list will thus consist of those officers only who have passed the limit of sixty-four years of age, and be in reality what the name indicates, a list of superannuated officers incapable of performing any kind of military duty.

The subject of graded retirement for age we believe to be beyond the stage of discussion; that it is desirable for our service is not to be doubted; that it is practicable is proved by long experience of it in other armies. That younger officers in the higher grades are deemed necessary in our service, is evidenced by the fact that special inducements to retire have been offered the older officers.

It must be borne in mind that all officers who go on the proposed reserve list are not lost to the service, for many of them can satisfactorily perform some of the duties now being done by officers on the active list, whose much needed services could thus be secured to the troops from which they are detached.

The foregoing scheme might be epitomized as follows:

That the President be and he is hereby authorized to prescribe a system of examinations of all officers of the Army below the rank of *colonel*, to determine their fitness for promotion, etc.

That the "limited retired list" shall hereafter be designated the "*reserve list*," upon which, in addition to those now prescribed by law, shall be placed all officers who fail of promotion by reason of failure in the prescribed examinations, or who have reached the age of forty years while serving in the grade of lieutenant, forty-five years in the grade of captain, fifty years in the grade of major, or fifty-five years in the grade of lieutenant-colonel; *provided*, that the pay of officers of the reserve shall be determined by grade and length of service, except in case of disability, say three-quarters pay for over thirty years' service, decreasing proportionately to one-quarter for under five years; *and provided, further*, that when an officer of the reserve is actually employed in the military service, he shall receive the full pay and allowances of his grade.

STAGNATION IN OUR CAVALRY.

An arm of the military service in which there is no promotion of its officers, or in which promotion lags behind that of all the other arms, is an arm without *esprit* or interest, and soon must become inefficient. Rank, promotion, is all that an officer has to hope for; it is what he gives his life for; it is the only reward he asks of his countrymen. If the hope of it is taken away from him, his ambition and usefulness must go too. And this, apparently, is the prospect of our cavalry to-day. It is already behind every other branch of the service in the relation which promotion and rank bear to age and length of service.

It is coming to be recognized even by the unprofessional that the chief object of our maintaining a standing army in time of peace is to educate and train officers against a time of war. The advantage, the economy, of having trained officers to organize volunteer regiments and prepare them for campaign in case of emergency could have no stronger argument, no more convincing proof, than the excellence of our late volunteer regiments, as compared with any other volunteer regiments ever organized and put into the field in the same legth of time in this or in any other country. But to furnish trained officers for these volunteer regiments, and for the numerous temporary staff positions and other detached duty, the regular regiments had almost to be stripped of their officers. The Register shows that 119 regular cavalry officers were appointed to volunteer commissions during the years 1898 and 1899. It was even worse in the Civil War. A regular cavalry regiment in that war which had a field officer to command it was in remarkably good luck. The regular cavalry regiments were usually commanded by captains; sometimes by lieutenants.

It is well known that we have not enough officers properly to perform the routine duties of the service even at the

present time of profound peace. Not a squadron in the service has its complement of officers present for duty with it. A squadron recently returned from the Philippines and reported for duty at Fort Riley under the command of a lieutenant.

The present organization of our cavalry has nothing to commend it. A squadron of four troops, which at war strength would mean 400 troopers, is too large for any single man to command as a tactical unit. Yet the squadron is the tactical unit of cavalry. In every service except our own the squadron contains from 120 to 150 troopers. This is the squadron organization recognized as the best by all of the world's best cavalry soldiers. Ours alone contains 400 troopers. No reason is known to have existed for the adoption of our organization of four-troop squadrons, unless it was the desire to assimilate it to the infantry organization. This will also account for the designation "battalion" which we find in our old "Cavalry Tactics."

We know by our own experience that this is a clumsy organization. For all work at our maneuvers the cavalry regiments are divided into detachments of two troops, instead of squadrons of four troops. Such a detachment is usually commanded by the senior captain present with it, who must turn his own troop over to his lieutenant or sergeant—an arrangement never satisfactory. Best results are always obtained when every officer commands the unit assigned by the law to his rank; and the proper rank for the commander of two troops, which the world over form a squadron, is that of major.

The proportion of commissioned officers to enlisted men is smaller in our cavalry than it is in any other cavalry in the world; and the proportion of officers on detached service is, and of necessity must always be, greater than that of any other cavalry in the world.

Likewise our cavalry regiment of 1,200 troopers corresponds to a brigade or a division in every other army, of at least two regiments. Twelve hundred mounted men are too many for any living man to command, in any formation, by word of mouth, our drill-book to the contrary notwithstanding. Our cavalry regiments, for tactical reasons, ought to be divided into two half-regiments, each under the command of a lieutenant colonel, and each consisting of two or three squadrons. Each half-regiment would correspond to a full regiment in other services. This organization would also give the lieutenant-colonels a unit to command—a reason for being—instead of leaving them, as at present, the only regimental officers without a fixed tactical duty—a veritable fifth wheel.

Under every consideration, then, we need a larger proportion of officers in our cavalry. To enumerate the reasons again, and in their order of importance:

1. We need the hope of promotion, and we must have it if we are to maintain our high standard of *esprit* and usefulness. Without it dry-rot will set in soon or late. We are only human, and the people of the country cannot, and do not expect the highest class of service to continue without commensurate reward of rank; and if properly appealed to, and made to understand the condition, the Congress will see to it that we are adequately compensated for our services. The people want the best servants, and they know that they cannot hope to get the best servants at the worst price.

2. In time of war trained officers, and many of them, are what we need; and they must be trained beforehand, in time of peace, in the army. The number of officers in this training school should be greater than is required for the actual duties of peace, rather than smaller as it is to-day.

3. The tactical organization of our cavalry regiments is wrong, and is not approved by our own experience or that of any other nation. If we cannot have squadrons of two troops, the next best organization is with squadrons of three troops—four squadrons to the regiment. Indeed a squadron of three troops, each of sixty-four troopers in the rank, is a very symmetrical and easily handled unit. And a half-regiment composed of two such squadrons would be as large a command of cavalry as any man could command directly.

Such an organization would double the present number of our lieutenant-colonels, increase the present number of

our majors by one-third, and add a few more to the list of our first and second lieutenants.

DIRTY OATS.

Civilians, especially those from cities, coming for the first time into an army post are always struck with our lack of what are called "modern improvements." They wonder why the Government will allow us to go on living in its houses and hazarding their destruction with kerosene lamps, when small country towns have long ago adopted electricity or acetylene gas. They want to know why our quarters are encumbered with unsafe and ineffective heating stoves when furnaces and steam heaters are so much cheaper in the long run. They ask us why we ride with a single rein and curb-bit, when horsemen the world over use a double rein. They have asked within the last twelvemonth why we were wearing "congress gaiters" which they saw their grandfathers wear.

A right observing one in an hour's walk round a big frontier post, will ask a hundred such questions; to answer which always embarrasses and humiliates us. We reply that we are aware that such things are behind the times—that we have read about electric lights and steam heaters and other up-to-date things. We point with special pride, *esprit de corps*, to the army posts that are provided with such blessings. For there are some. Five years ago we could not have named a post lighted with electricity. But things have changed—men have changed; and to-day we answer our civilian friends, "Just you wait! We shall have all those things some day. Our turn will come. Give the Departments time."

But it is not only the premier-de-siècle man from town that asks impertinent questions about our lack of modern improvements—the man from the farm also misses those that he is familiar with. Not a thrifty farmer in all the great West feeds dirty oats to his horses. Every well equipped barn, nowadays, is provided with some sort of automatic oat cleaner; and every stable in the service, whether

of troop, battery or quartermaster's department, ought also to have one.

Many months ago several such cleaners were sent to Fort Leavenworth for trial, by the Kaspar Oats Cleaner Co., of Chicago; were set up in the battery and troop stables; were found satisfactory; were favorably reported upon and recommended by a board of officers, and were ——. Have any of them been supplied for the stables throughout the service, or are our horses still eating weed seeds and dirt with their oats?

This is a matter for troop and battery commanders to inquire into.

THE INADEQUATE RANK OF OUR HIGHER COMMANDERS.

One of the hardest questions logically and satisfactorily to answer in connection with the organization of the armies of the United States, is, Why have our higher officers seldom, or never, been given by law rank commensurate with their commands or duties?

Since the very beginning, 1775, there have been only four full generals in our service, Washington, Grant, Sherman and Sheridan. There have been only eight lieutenant-generals. General Scott, who commanded the army in two wars, and for a longer time than any other man, was never more than a *brevet* lieutenant general.

The rank proper for the commander of each unit of troops, and the corresponding territorial district, in descending scale, is so well known that it hardly seems worth while to mention it. Any American knows that a separate army should be commanded by a general, an army corps by a lieutenant-general, a division by a major-general, and a brigade by a brigadier-general. Yet after General Scott's retirement, the rank of major-general was the highest in the U. S. Army, until General Grant was made lieutenant-general by special act of Congress.

Not so in the Confederate Army. There we find every separate army commanded by a full general, and the army

corps commanded by lieutenant-generals. In the short four years of this army's existence, seven full generals and eighteen lieutenant generals were commissioned. In this particular, as in nearly every other, the organization of the Southern forces was better and more business-like than that of the Union forces. And one can hardly read the history of those campaigns without being persuaded that many of the failures on the Union side were due to the inadequate rank of the commanders in the field, and to the consequent frequent shifting and changing, which might have been avoided had proper rank, fixed by law, obtained from the outset.

Several of the Union commanders that were deposed after a single failure, might have succeeded if given another chance. Generals learn by their own mistakes. Lee was a far better general after a year at the head of an army than he was in the beginning.

But with the lessons of five wars before them, the people and their representatives in Congress must have some good reason for withholding from our higher commanders their proper rank and titles. It certainly cannot be a question of economy, for the additional expense would be too insignificant for consideration. Can it be the lingering shadow of that superannuated bogy, fear of a military supremacy? If any trace of that shadow can have lasted after the quiet dispersion of the hosts of soldiers at the close of the Civil War, it must have faded out under the light of the twentieth century. Many of the fears and apprehensions of our Revolutionary fathers seem no more than ghosts of the nursery after the passing of a century.

Our Army to-day contains 60,000 men, two full army corps, spread over a wider territory than that occupied by any other army in the world except the British. From every point of view considered, its highest officer, the Chief of Staff, should have the rank of general, and to command the two corps there should be two lieutenant-generals. This would give the Army the proper organization to serve as a nucleus in case of war, and might prevent a repetition of some of the chaos we witnessed in the haphazard mobilization of 1898.

MOET & CHANDON.

Interesting statistics: The following table of importations of the principal brands of champagne that arrived at the port of New York during the year 1904 should be of considerable interest to lovers of the sparkling wine:

Moet & Chandon	116,549 cases	Piper-Heidsieck	9,136 cases
G. H. Mumm & Co	85,228 "	Louis Roederer	6,990 "
Pommery & Greno	24,143 "	Pol Roger	6,603 "
Ruinnart pere & fils	15,822 "	Dry Monopole	2,932 "
Vve. Clicquot	13,076 "		

Tabulated according to Custom House Statistics by Bonfort's Wine and Spirit Circular, January 10, 1905.—Adv.

THE MEHLBACH SADDLE CO.

This reliable firm is still the only one that carries the "Whitman" saddle, so well known in the Army. And now that the "Whitman" is the authorized and recognized saddle for all field, staff and general officers, and all officers hope soon or late to get into one or another of these elect classes, it behooves every officer to own a Whitman and learn to ride it. A man that can ride a Whitman can ride a McClellan, but the reverse is not true.

POLISHINE.

Polishine is still without an equal in its line. It received the highest award at the World's Fair, and was used there in all the departments. It is a great labor-saver for soldiers, and ought to be found in every Post Exchange.

CHATTANOOGA FIRMS.

Among our new advertising patrons will be found several Chattanooga firms. We have taken pains to solicit the patronage of the most trustworthy houses of that thriving city, and have accepted contracts with none that we do not feel we can recommend to our members and subscribers. The names will be found in our pages, of the firms that the Seventh Cavalry have found worthy of their patronage during their service at Fort Oglethorpe, and we confidently commend them to the officers and men of the new regiment soon to take station at Fort Oglethorpe. The "ads." of these following Chattanooga firms will be found in our pages:

A. Muxen & Co.;
D. R. Loveman & Co.;
G. W. Meyers Jewelry Co.;
Davidson Clothing Co.;
Tom Fritts Hardware Co.;
J. W. Kelly & Co.;
Wallace Buggy Co.;
F. M. Catron.

DES MOINES MERCHANTS

We solicit the patronage of all good cavalrymen and their families at Fort Des Moines for the following excellent and reliable firms, whose "ads" will be found in our pages:

Garver Hardware Co.;
Chase Brothers;
Wright, The Haberdasher;
C. C. Taft & Co.

SAN FRANCISCO HOUSES.

Among our new San Francisco patrons will be found the following:

Baker & Hamilton;
Leibold Harness Co.;
Yates & Co.
Greenebaum, Weil & Michels.

We commend them not only to the patronage of our friends stationed permanently at the Presidio, but also to the large number of those who stop there for a day or two on their way to and from the Islands.

ALFRED J. CAMMEYER.

Cammeyer's shoes are so well known that it almost seems like an act of mere good will on the part of Mr. Cammeyer to advertise in the JOURNAL. We hope that any friends of the JOURNAL who do not already wear Cammeyer's shoes will begin to wear them—we hope so, more on their own account than on Cammeyer's. Any Post Exchange that does not carry Cammeyer's shoes is behind the century.

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