JOURNAL OF THE U. S. CAVALRY ASSOCIATION

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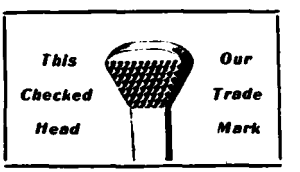

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U. S. CAVALRY ASSOCIATION, **Fort Leavenworth, Kansas.**

VOL. XXIII. JULY, 1912. No. 91.

JOURNAL

OF THE

United States Cavalry

ASSOCIATION.

PUBLISHED BI-MONTHLY
BY THE UNITED STATES CAVALRY ASSOCIATION,
FORT LEAVENWORTH, KANSAS.
$2.50 per Annum. 50 Cents a Copy.
Foreign Postage, 50c per year.

LIEUTENANT COLONEL EZRA B. FULLER, U. S. ARMY, RETIRED,
EDITOR.

Entered as second-class matter, January 21, 1911, at the Post Office at Fort Leavenworth, Kansas, under the Act of March 3, 1879.

KETCHESON PRINTING COMPANY
LEAVENWORTH, KANSAS.

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ORGANIZED NOVEMBER 9, 1885.

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JOURNAL

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VOL. XXIII. JULY, 1912. No. 91.

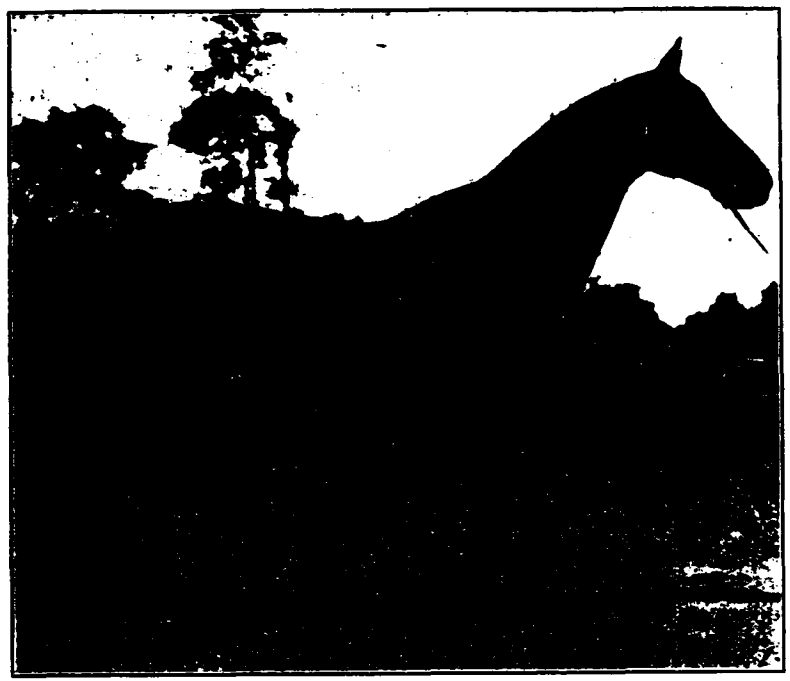
THE CHARGER.

By Major General WILLIAM H. CARTER, U. S. Army.

ONLY a few years ago the Autumn Indoor "Horse Show" at Madison Square Garden, New York, afforded practically the only opportunity for comparison and fixing of standards of horses and equipages in this country. After a period of decline from its highest water mark of success, due to the perfection of automobile transportation, a revival ensued and the movement has spread over the country until now the circuit of horse shows has become quite as much a fixture of the blue grass regions as the county and state fairs are of the agricultural sections.

Along with the horse shows have come the military tournaments, which have extended to international proportions and in which officers of many countries contest for the ribbons in various events requiring trained mounts of superior quality. American competitors have found their horses outclassed, but they have the satisfaction of having come out of numerous grueling contests with a reputation for light hands, good seats and a determination to come again,—the latter by no means the least of sportsmanlike qualities. Alert, energetic and ambitious to acquire perfection, their efforts are sure eventually to be

rewarded with full success. As cups and blue ribbons are brought back by gallant and determined young officers, contesting under many disadvantages, a new impetus will be given to the work of preparation for future events and regimental pride may be depended upon to urge steadfast improvement. To accomplish this, there must be standards of perfection and herein lies the greatest difficulty which confronts the service just now.



DELHI.

Castleton Stallion. Brown Horse, 1910, by Ben Brush, out of Vera by Mortimer. Height 16-1¼: weight 1240. Cavalry type thoroughbred.

Divided councils now prevail as to the proper types of horses for officers as well as for troopers. Experience has its influence in formulating opinions, and those who have intimate knowledge of the accomplishments of our cavalry are loath to

break away from its traditions born of campaign and battle. The mere statement that other nations differ with us in the organization, armament and types of mounts of their cavalry is not sufficient to justify change unless sound reasons are adduced. The cavalry lessons of the Civil War must be studied with caution, but there has been no such protracted field experience since that conflict closed, and such wars as have occurred in the past half century have served to establish the correctness of much that was evolved out of our own great war.

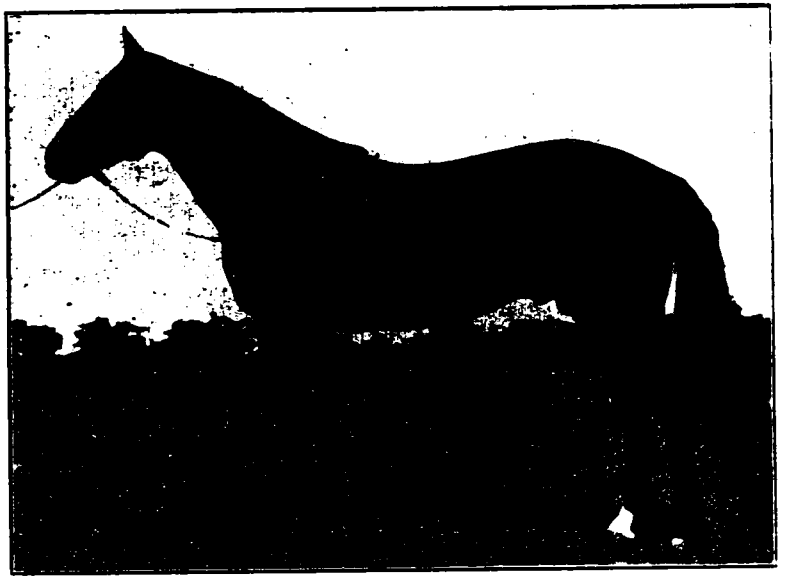
Much information concerning the cavalry of the Civil War period has been made available in recent years, and with a knowledge of its accomplishments in the long and arduous four years of strife, foreign nations have not failed to note and copy some points of military excellence. One of the best foreign observers with our armies in the Civil War was General De Chanal, of the French Army. After Sheridan's raid to Richmond, lasting more than a month, the unservicable horses to the number of about 6,000 were turned in at City Point. General De Chanal inspected them with great care, "one by one" as stated by him, His report sets forth that: "They were all very thin, mostly broken down in front, wounded, some with broken knees; but there was not a single horse with a wound on the withers or over the kidneys." It is extremely probable that some sore backs escaped the General's eye, but nevertheless, his report indicates that the American cavalryman of the later period of the Civil War had learned to care for his horse even if he could not save him from the exhaustion due to lack of forage and proper rest during extended raids.

The quarter of a century following the Civil War was prolific in experience for the cavalry. The service was usually rendered on the isolated frontier and passed into history with but little notice. It was the great school of the frontier that had developed most of the resourceful leaders, the story of whose brilliant campaigns in the Civil War constitute some of the most interesting pages of the Nation's history.

Although the number of mounted regiments of the old army was small, they were possessed of an *esprit-de-corps* remarkable for its influence upon the new regiments added from time to time. After the Civil War this influence was peculiarly

potent when the cavalry found itself called to the field at each recurring season against the same Indian tribes and over the same trails as their forebears of the First and Second Dragoons, the Mounted Rifles and the First and Second Cavalry.

The last cavalry squadron in action against hostile Indians on the plains, formed for the charge on New Year's day of 1891, during the Pine Ridge campaign. A few days later, in the presence of the Soiux nation, the cavalry brigade comprising the Sixth, Seventh and Ninth Cavalry, and the squadron of the



ULTIMUS.

By Commando, out of Running Stream by Dom no. Height 15-3, weight 1240. Cavalry type thoroughbred.

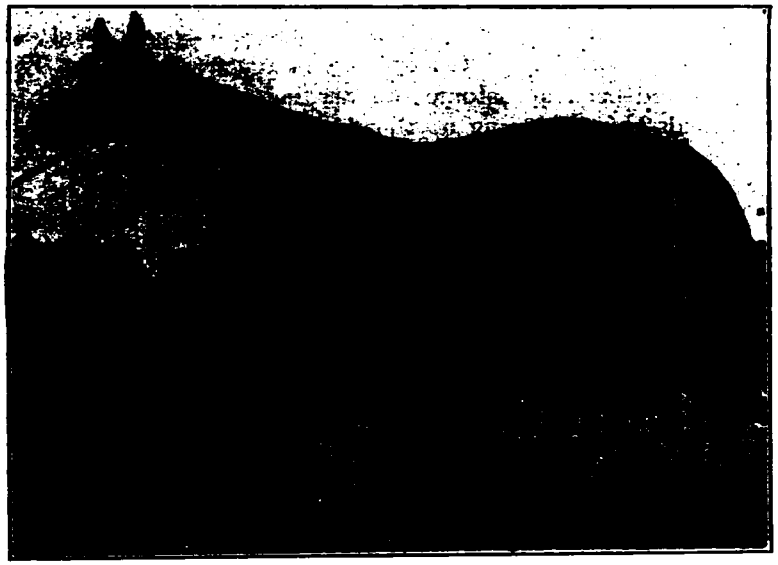
Infantry and Cavalry School, passed in review before the Major General Commanding. The winter had been severe and snow began again to fall upon the already deeply covered prairie, as the head of the column reached the reviewing party. It was a never-to-be-forgotten sight. The horses, even those that had come up from the south, had grown heavy coats of wooly hair during the winter campaign, notwithstanding they were pro-

vided with blanket-lined canvas covers at night. They had borne heavy loads, for the troopers wore the blanket-lined canvas or buffalo overcoats and packed all the heavy winter equipment. Some phenomenal marches, become historic in cavalry lore, had been made. The regiment to which the writer belonged marched to its station through deep snow, encountering the most severe blizzard ever previously experienced by any of the command. The horses were of the average type furnished at that time mainly from Missouri, and they withstood the vigorous campaign practically without losses other than those arising from accident. The almost total absence of sore backs was constantly remarked upon. The horses had been accustomed to herding at the posts and in the fields before coming north and were a hardy, serviceable lot of animals eminently fitted for the purpose of campaigning, and withstood successfully heavy loads and long marches in mid winter. They were purchased under the regulations drawn to describe, as nearly as practicable, a type—the cavalry horse.

This was the last of Indian campaigning, for following the death of Sitting Bull and the crushing out of the Ghost Dancers, there came an ever increasing volume of settlers who soon overran the Indian country with their wire fences and made the war pony a thing of memory. For a quarter of a century following the Civil War the cavalry had contested almost every foot of the ground from the Missouri westward and from Canada to the Mexican border. The cessation of this service, which had done so much to develop resourceful, self-reliant horsemen, demanded a substitute, and practice marches and peace maneuvers became the order of the day.

There followed soon after this last campaign a period of commercial panic and depression, the effcet of which was exaggerated directly as the distance from markets,and the value of horses fell to a point where they were slaughtered for their hides in some of the places where the range was no longer free. Conditions grew steadily worse and the farmers of the middle west turned their attention to draft stallions, hoping to produce a horse sufficiently heavy for farm or city work. Out of this experiment there came a herd of misfits—neither draft nor saddle

animals, but horses with medium size bodies and large feet; thick manes and tails and heavy fetlocks. Then followed the South African campaign when thousands of the light frontier horses were shipped off to the British Army. Then developed the shortage in the type of horses which had for many years carried our cavalrymen with their heavy packs over mountain and plain in pursuit of the most alert and resourceful of all light horsemen—the American Indians.



HIPPODROME.

By Commando, out of Dominoes by Domino. Height 15-3; weight 1165. Cavalry type thoroughbred.

With the advent of railway communication and particularly after the war with Spain, and foreign service had come to play its part, there fell upon the cavalry a blow that in old frontier days would have broken the heart of every trooper who had ridden the trail—the transfer of horses between regiments changing stations. But notwithstanding this violence to regimental *esprit-de-corps*, a knowledge of the accomplishments of

hard riding forbears has been kept alive and has encouraged the new generation to qualify in all that makes for cavalry success.

The Infantry and Cavalry School and the School of Application for Cavalry and Light Artilery struggled under many difficulties, but the study of the horse had progressed sufficiently to cause the word "hippology" to be introduced and defined in the new dictionaries. Efforts were concentrated on standardizing ideas and inculcating a knowledge of cavalry horses, their conformation, capacity for training and endurance. The standards aimed at were the proper types of service horses, the officers begin encouraged to obtain for their own mounts animals of similar type and with as much quality as could be procured.

The School of Equitation, from its modest beginnings, has developed a considerable number of capable instructors and a a few who have imbibed the magic of horsemastership. It is still in the stage of development, but has brought forth some good riders,very clever polo players and a number of likely candidates for Horse Show honors. The important thing now is to develop from somewhat divergent views the standards for the charger and cavalry horse classes of the horse shows. The standard dictionary defines the charger as "one who or that which charges; especially a war horse." Judges of hunters, gaited saddlers and park horses all confess themselves as unable to determine just what the military contingent has in mind as the requirements of a charger. Observation of numerous charger classes, and comparison of the decisions of military judges, forces the conviction that there is no well established and uniform standard as yet in the minds of officers generally. The standard adopted by the government in its advertisements for cavalry horses is that of a perfect animal of its type—the kind with which the cavalry of the frontier made its successful campaigns. Such an animal was expected to possess such conformation as to enable him to endure campaigning with all its attendant hardships, to swim rivers, climb mountains, and to survive thirsts and deprivation of forage.

Observation of many horses entered in Horse Shows as chargers justifies the statement that there is a very elastic idea of such animals in the minds of officers. It is not intended to prescribe or define the standard charger, but to suggest to those

who are devoting their time to Horse Shows, that there is urgent need for crystalizing ideas as to the type of horse that should be in the minds of the judges of the charger classes and of the requirements as to schooling and performance which are to be demanded.

There is a wide gulf between those who insist upon the qualified hunter, upwards of sixteen hands in height, and those who have in mind the all around cavalry horse of less height and weight. It is true that the big type of charger can easily negotiate obstacles that are quite beyond the powers of the ordinary type, but it is also certain that the large horse would have a desperate time in a mountain campaign, especially if he must depend upon grazing, that he would be at a disadvantage as compared with the smaller and more compact animal.

It has been impressed upon officers attending Horse Shows that they should accept as their standard the big thoroughbred type of horse capable of jumping five foot stone walls and fences. Young colts of this type are not available for purchase in the vicinity of many cavalry garrisons and mature hunters are usually held at prices beyond the purse of the large body of officers dependent upon their pay. This has been especially true under the practice of forbidding the return of animals from the Philippine Islands, for officers have hesitated to purchase high priced horses with the prospect of being compelled to leave them at home for several years or sacrifice them if taken abroad.

Every cavalryman desires as fine a horse as he can possibly procure. The best horses are not always the largest, but the officer should not select an animal below the average size. Horses from fifteen to fifteen-two are well adapted for the trooper who must mount and dismount quickly, encumbered with arms and equipment, but the officer may properly choose a taller animal if he has the proper conformation and the cavalry quality. Above all the animal should be a trained service horse, hardy, courageous and willing. There are some families of thoroughbreds that make typical mounts for the cavalry officer while often families of proverbial speed are veritable weeds and not war horses. The breeder mates to family history and performance. The cavalry officer must regard the individual animal. The remount service is making available

an increasing number of young horses, many with sufficient thoroughbred blood to make them worthy of painstaking training.

The thought naturally arises as to whether the idea of a charger had not best be crystilized into a horse with much quality as procurable; fifteen-two to sixteen hands in height; sound, with conformation as nearly perfect as possible; trained in the school of equitation; that will stand fire, permit the rider to dismount and mount in haste, and will jump ditches, hedges, post and rail, or stone fences about three feet six inches high. The charger class in which the regulation military saddle and equipment should be used to distinguish it from the hunter and other saddle horse classes, ought to be made an interesting military event. Instead of the wearisome judging of the animals singly, four or six horses in unison, as a squad, should execute the gaits, the turns on the fore and hind hand; the forward and back; the figure eight and change of lead on a straight course; and movements on the double trail. It is much easier to determine relative merit in this way than by putting each horse through his paces singly before an impatient audience that would be all attention to a squad of military riders.

Enthusiasts and pessimists are ever arrayed against each other, but a sound and abiding common sense has usually prevailed in the army and the regulars habitually accomplish their ends while still maintaining a reputation for steadfastness and reliability. It is not too much, therefore, to expect that in the near future, acceptable standards of form, quality and schooling of horses for the charger classes will be adopted in the service.

MACHINE GUNS WITH THE ADVANCE GUARD.

By First Lieutenant ALBERT E. PHILLIPS, Tenth Cavalry.

BEFORE venturing to approach the subject of which this article treats it would be well to consider, in a general way, first, the principal functions of an advance guard and, secondly, the characteristics of the machine gun.

It is an established principle that every body of troops on the march detaches in the direction of the enemy a portion of its strength as covering troops. In the absence of advanced cavalry the advance guard has to reconnoiter the enemy and the ground passed over to provide information for the leader of the main force, and to facilitate in every way the march of the troops in rear. Small hostile parties may be brushed aside without delay, but a strong force must be checked and delayed, in order to give the main body time to take part in the action under favorable conditions. In some cases, to seize a defile or gain some special point of vantage a determined and vigorous attack may be made even on superior forces, but under ordinary circumstances an advanced guard must be considered as a protecting adjunct, and not as an independent fighting body.

As the hostile armies draw close to one another, the masses of contending cavalry clear away from the front, and the main combat is preceded by the maneuvering action of comparatively small detached bodies. Napoleon says: "The duty of an advanced guard is not to advance or retreat, but to maneuver."

Certain well defined military qualities are demanded of a good advance guard leader. The requisite foresight, prudence, daring and tactical ability are seldom united in one individual. The collection of intelligence is, to a great extent, taken out of his hands in modern times, and owing to improvements in fire arms and the implements of warfare, his command covers a far larger extent of ground than formerly, and the difficulties of

withdrawing from a combat, fighting a purely delaying action or, in any way maneuvering under fire are enormously increased.

The right of entering into a serious engagement rests with the commander of the main column. His liberty of action must not be interfered with, but at the same time the safety of the marching column must not be imperiled. An immediate decision has often to be made under critical conditions, and the task of an advanced guard leader has increased both in difficulties and importance.

The security afforded by advanced cavalry is, however, of a varying character; a sudden mishap may throw on an advanced guard the duties not only of reconnaissance, but of temporarily holding its ground.

Many of the battles of history were characterized by the premature attack of superior forces by advanced troops, notably at Spichern, Worth and Colombey, contrary to the wishes of the commanding general. Goltz says: "A combat can easily be stopped as long as cavalry and artillery are alone engaged. The latter are a long way off, and the former can use the speed of their horses to get away if advisable; but it is more difficult to break off the action if infantry is engaged. The stronger the force of infantry the greater the difficulty of breaking off the action." Boguslawski says: "Advanced guards should be strong in cavalry, weak in infantry and have a fair proportion of guns." These statements were made before the advent of the improved machine gun of the present day.

The machine gun enters the domain of modern tactics not yet as a separate arm but as a powerful auxiliary capable of pouring forth the greatest volume of highly concentrated infantry fire from a minimum front. (Note. Germany has organized batteries of the heavier type of machine guns "Maxim" for independent action under brigade and division commanders and a lighter type of guns assigned to regimental units. Russia and Japan have likewise organized separate batteries in addition to the guns assigned to regiments.) Napoleon says: "Fire is everything, the rest is of small account." Machine gun fire may be used to sweep a wide literal surface, a deep zone or a combination of both at the same time, or to follow a target uninterruptedly without chang-

ing the elevation of the sights. This latter feature is beyond the power of any other fire arm. Machine gun fire may advantageously be used as covering fire to cover the advance or withdrawal of troops. This may rarely be accomplished by rifles fired by many individuals without danger to one's own troops. In the heat of an action a company commander cannot control the fire of each soldier. The machine gun's narrow frontage in action renders it easy to conceal, and when discovered it presents a small target to the enemy's riflemen. Its narrow frontage, also, enables it to bring a heavy fire to bear from ground which does not admit of the deployment of troops. This is another great advantage of machine gun fire over individual rifle fire. (During the maneuvers at Pine Camp in 1910 the machine guns occupied many such positions, but as the guns were not supplied with proper blank ammunition, automatic fire could not be used. And the lack of special blank ammunition for automatic action is a serious handicap to the proper tactical disposition of machine guns. On one occasion at these maneuvers, two machine guns were placed on a small hill about 800 yards on the flank of the battery then commanding the position on the "Hogback." This "hill" would not admit of the deployment of more than a squad of infantry.) Machine gun fire is most effective between the ranges of 800 and 2,000 yards, where rifle fire is least effective.

Its fire effect on a stationary target between 800 and 2,000 yards is equal to fifty rifles. The Germans place it at 120.

On a moving target its fire effect greatly exceeds fifty rifles as the machine gunner does not have to alter his sight.

Its mobility is equal to cavalry.

Its vulnerability is unaffected by fifty per cent. loss.

Its visibility is equal to a file of two men.

Its beaten zone is only half the depth and about half the width of the collective fire of infantry.

Its fire is controlled, directed and concentrated in the person of a single individual and the human error is greatly reduced instead of being spread over some fifty men of varying temperament, nerves and aiming power. Infantry fire is individual and dispersed unless controlled by fire discipline under a leader. We know how difficult it is to control this fire even

on the target range. There is a cumbersome lot of commands repeated by various individuals before forming for action; another set of commands, again repeated by various individuals for fire, designation of objective and assumed range, requiring adjustment of sight elevations, many of which are not even set at the ranges ordered. This takes up so much time that the objective usually disappears and, if a moving target, it is impossible to follow that kind of a target without changing elevations for almost every shot.

SUMMARIZING WE HAVE:

The advance guard commander has a force possessing the mobility of cavalry. Greater fire power than infantry. The ability to open and cease fire at will or to change the direction of its sheaf; to pour in a great volume of controlled and concentrated fire from extreme rifle ranges where infantry fire is least effective, thus bringing effective fire to bear on the enemy while still in close formations and compelling his deployment, gaining time and holding the enemy in check while our army is deploying. The ability to quickly get the range and to follow a target uninterruptedly, to change targets without ceasing fire or altering the elevations of the sights. Fewer men to control, thus enabling the commander easily and quickly to cease firing and withdraw the guns from action and prevent bringing on a general engagement. In case a general engagement is ordered, to hold important positions for the artillery and other troops and upon arrival of these troops into action, the prompt withdrawal to higher ground to cover the attack or to a flank to assist in the engagement or to operate with the cavalry. If the action is successful, to pave the way for the charge; to cease fire at the instant of collision and afford cover for the troops to reform after the mêlée. To hold on to the captured position or to follow up in the pursuit. In case of repulse or defeat to cover the retirement.

The machine gun has its limitations, but they are few when compared to its powers, where the units are properly organized and trained. Machine guns have failed in the past because they were antiquated weapons and the proper tactical use of the guns was not recognized, and also because it was

thought that any one could handle the guns without previous training. Unless machine gun units are supplied with the proper gun, the personnel of high order and thoroughly trained as individuals and as gun and ammunition crews, poor results may be expected and the machine gun will be blamed. Besides the technical knowledge required, the correct tactical employment demands certain qualifications of officers on duty with machine guns not called for in other branches. Our regulations state: "The machine guns should be regarded as a weapon of opportunity. Occasions for its fire will arise quickly and unexpectedly, and pass as quickly. Its effects must be immediate and decisive."

The regulations of all the great armies require that the machine gun commander be kept constantly informed of the tactical situation and action, to enable him to take advantage of those fleeting opportunities that pass so quickly. Par. 220 of our Cavalry Machine Gun Regulations states: "It is essential that the officer commanding the machine guns be constantly informed as to the tactical situation and plan of action, and receive early information as to the special tasks to be performed by him. It may often be advisable to attach an officer of the machine gun organization to advance troops in order that he may secure early information concerning the enemy, the ground available for occupation by the guns, and the location of friendly troops."

Par. 224, states: "The machine gun troop will usually be with the independent cavalry. Normally its fire will be used to augment the fire of dismounted troops; but with the independent cavalry occasions may arise when its fire will take the place of the dismounted action of the cavalry, thereby leaving the latter free to use its mounted action."

This opens up a line of thought which we cannot here pursue further; suffice it to say that cavalry, strongly supported by machine guns affords an opening equal to the aspirations of the most talented cavalry leader.

With the cavalry far out in advance, the machine guns attached to the advance guard will best march with the support, because if the enemy is met the machine gun fire is especiallly desired in the first moments of contact.

The latest German Regulations state: "On becoming engaged, that side will have the advantage which gains the start over its opponents in readiness for action, and thus reaps the benefit of the initiative." * * * "The advance guard will fight on a wider front than that ordinarily allotted to a force of its size, so as to seriously engage the enemy. It will be disposed in groups more or less detached, which occupy those positions, the possession of which will most protect the deployment of the main body. It will be assisted by machine guns, which will be placed for preference on those positions which it is most necessary to prevent the enemy from capturing."

Machine guns should but rarely be used in the firing line. Machine gun duels should always be avoided. When the attack commences the first advance of the infantry will probably be protected and covered by artillery fire, and the infantry will generally be able to push forward to within long range of the enemy's infantry fire without serious losses. From here, however, the firing line will begin to suffer from rifle fire and to enable the attack to be pushed forward with vigor and without undue losses or demoralization this hostile fire must be met by fire of greater intensity, especially during the last stage of the attack when the artillery is no longer able to fire over the heads of the infantry. Numerous instances are cited in the reports of the war between Russia and Japan where the Japanese used their machine guns to fire over the heads of the advancing infantry. An officer who commanded one of these batteries at the battle of Mukden, and who was later detailed to lecture to the attaches with the First Army said, "That on one occasion there he continued this fire until the advancing infantry had arrived within thirty meters of the enemy's position." Also at Mukden, all the machine guns of a whole Division were brought into action upon a Russian *point d' appui*. The Russian fire was silenced but burst out again whenever the machine gun fire slackened. The Japanese infantry used these pauses in the enemy's fire to press forward to close range under cover of their machine gun fire. Indirect or covering fire with machine guns is not difficult of execution and results as determined by experiments compare favorably with direct fire.

Note. In Machine Gun Tactics, Applin, England, is published results of experiments in indirect fire with machine guns by the machine gun platoons of the Tenth U. S. Cavalry. With well trained detachments and guns mounted upon tripods there is practically no danger to the troops in front. In fact, if covering fire is used there will be fewer casualties from the enemy's bullets.

The tactics of all the great armies except the Japanese advocate the use of machine guns with the advance guard. The Japanese tactics state: "Use with the advance guard is not desirable as a rule." This is partially explained by the fact that at the beginning of the war Japan had no trained gun detachments and the Japanese cavalry was a mediocre quality. After the battle of the Shaho, there was a considerable increase in the number of machine guns in both armies, but neither Russia nor Japan had a sufficient number of these weapons to attach them to advance guards, main body, with the cavalry as a general reserve. The Japanese, therefore, attached them to the independent cavalry brigades. A writer in Heiji Zashi (Japanese) says: "At the beginning of the war, the Japanese attached to the regiments of the independent cavalry brigades four machine gun detachments of six guns each. However, the Japanese Cavalry, on account of its poor mounts, unskillfullness in cavalry tactics and general weakness could not put into effect decisive battle action. If the Japanese cavalry had made perfect use of the machine guns in the cavalry fights at the time of the Russian retreat toward Hoten (Mukendon) it is not difficult to imagine how complete would have been the result." Machine guns may be used in almost every stage of a battle but, if we expect to take advantage of their great fire power we must have a sufficient number of them to attach to advance guards, main body. with the cavalry and as a general reserve.

The Japanese Tactics further states: "The officer commanding the machine guns must be accurately acquainted with the plans of the general officer commanding but must act on his own initiative in forwarding the general scheme according to the situation. Communication with the general officer commanding is considered vital."

BUCKETS VERSUS BARRELS.

By Veterinarian R. VANS AGNEW, Fifth Cavalry

THE water question has arrived at last and should be a most interesting one.

The days of Guelphas and Ghibellines will come back and club rooms and mess halls will resound to those familiar, if somewhat cheerless sounds that one hears in temperance lectures.

However, let the deluge come! Let each one build his ark and pray that it proves watertight, or, like King Canute, sorrowfully move his chair back, if overwhelmed by fervid arguments of colic or non-colic, water when heated or water when cooled. Veterinarian Hill in his article on "Watering the Heated Horse," in the May, 1912, number of the Cavalry Journal, has boldly announced his intention of teaching his respected and ancient great grandfathers that most delectable and enjoyable occupation of sucking eggs.

No doubt, at some time or other, we all have joined in this somewhat risky endeavor, only to find that eggs have been pricked before.

This water question seems to be a matter of climate.

Veterinarian Hill is in the Philippines and can, in that climate, water warm horses with average impunity.

Veterinarians of the East Indian countries recommend watering hot horses, but I do not notice that Veterinarians or horse owners in cool or frigid zones insist on hot horses being watered.

Wild horses used to be caught by running them till they were very hot and allowing them to drink their fill, then they were easily captured. Why? Does any one think that it is good for man or beast to gorge on food or liquid? It can be done for a time but nature always insists on a reaction; the pendulum must swing back.

Altitudes as well as composition of water, besides temperature, must be taken into consideration. To water a hot horse in a high dry country with a strong cool wind blowing, even in the sun or shade, would be disastrous.

Large quantities of hard water are never good.

A hot thirsty horse generally over drinks and, unfortunately, the average enlisted man does not know enough to judge the proper quantity his horse should drink while in that condition.

Veterinarian Hill says a horse by "exercise can lose three to six quarts of liquids from the skin, lungs and bowels." Is this any reason he should be allowed to drink twenty to thirty and even forty quarts of water?

Why not let him drink, say six quarts and then when his system has cooled down and is fairly normal, let him drink the usual amount, which, naturally will be moderate; this will avoid over distention, secondary sweating, and softer horses; for no one can deny that conditioning or training is affected by the amount of liquid introduced into the system, whether it be hot or cold.

Veterinarian Hill says that the practice of walking a horse after a drink is useless as long as the water is not chilly

This custom is not on account of the water drank, but to keep the horses, that have had severe exertion and are hot, from cooling off too rapidly and getting their muscles, etc., sore and stiff. In all athletics, one has to avoid the same soreness. Also, no athlete will drink cold water or liquids after violent exertion, but people who are ignorant of laws of health will do so. If Veterinarian Hill should go through the harvest fields in many of the Western States, he would see for himself that very many people are violently ill or affected by drinking cold liquids while working in the hot sun and that, if some of them were not stopped from drinking, they would so weaken themselves as to unfit themselves for work.

This was very often done in the Philippines by soldiers who had to fall out from over distending themselves with quantities of water, and warm water at that.

Has no one, on coming in hot and thirsty, taken a few swallows of some liquid, then sat down or moved about till

cooled off, and found eventually that they were not so thirsty after all?

Immediately that you take an animal up and make him live artificially, you must be prepared to treat him artificially, and not allow him to do as he likes.

Veterinarian Hill says that there are dozens of other causes producing laminitis, colic, or congestion of the lungs, besides water. It is presumed that he means that these conditions occur after a march when horses have been immediately watered while hot and thirsty, if this is so, please let him state some of those dozens of causes, that would be independent of the fact that excessive drinking of water would not aid in producing disordered functions.

I have statistics to show it, and have seen too many hot and thirsty horses in trouble a very few minutes after being allowed to drink water even from a sun-exposed trough in a temperate climate, to dare to say that they should be allowed to drink all the cool or warm water they want, especially if they have been marched hard and fast.

A general order allowing horses to drink all they want while hot and thirsty would be a very dangerous one and would seriously affect the general health of a command, if carried out for any length of time.

Possibly, in warm countries, the skin might carry off the surplus in time to prevent complications, but I doubt if the animal would be in as good condition or as strong as one that had moderate amounts of water supplied him.

How is the water to be warmed in the winter time for a command that comes in hot?

I fancy that that command would have plenty of time to cool off before they could get warm drinking water.

As long as we have such short enlistments in the cavalry and so few who re-enlist for that arm, the less can we take chances with the health of their mounts, by allowing them to use their own discretion in watering, for it takes a long time to make a cavalryman with horse sense. In fact more and stricter rules should be made in regard to the care and conditioning of the better class of mount that eventually we shall get.

It should be impressed on the future cavalry soldier that his horse is more important than he is and requires unremitting care and attention at all times.

A cavalryman is not the cheap $15.00 per month man whose poverty striken fate good, ignorant people mourn over, he is a $200.00 a day man in horse flesh alone and can cost the government that amount if he loses his mount or depreciates its value by ignorance and carelessness.

The main principles and their reasons of the care of horse should be ground into him, because when he goes on patrol work for any length of time, he will have to give individual care to the feeding and watering of his mount; if he has learnt no more than his troop stable feeding and watering, he will not rustle for his mount in patrol work or away from troops, unless he is a born horseman. Alas! there are so few.

In these days of waterproofed canvas, every mounted officer and enlisted man should have a canvas bucket as a very important part of his horse equipment: with this bucket the horse can be given the water he needs.

If banks are steep; watering places small; ditches shallow; faucest established with no troughs; and those many other conditions exist, that apparently make it so difficult to water our horses now-a-days, then we can overcome all these drawbacks by having so many horses held, while the rest of the men can take their buckets and bring water to their horses, enabling the command to water in an easier, quicker, cleaner way.

When horses come in hot and thirsty, they can each get a bucket of water and can be cooled off properly, without danger to their constitutions or suffering from excessive thirst.

In conclusion, a bucket and horse sense is better than sentiment and license.

CAVALRY RECONNAISSANCE AND TRANSMISSION OF INFORMATION BY MODERN METHODS.

By Captain HOLLAND RUBOTTOM, Signal Corps.

THE most important function of cavalry with a field army is that of the "independent cavalry," which is two-fold, viz: (1) to form a "screen" for the protection of the main body, preventing the enemy from receiving information of its strength, position, movements and intentions, and (2) to obtain information concerning the enemy's strength, position, movements and probable intentions. In order to reach his main body it is generally necessary to defeat his cavalry. Here the fighting qualities of cavalry are principally utilized.

Many other uses have been made of this arm, such as: (a) holding advanced positions until the arrival of its infantry, as was done by Buford's cavalry preliminary to the battle of Gettysburg; (b) operating on the enemy's flanks and rear and assisting in the main attack by a spirited charge on the hostile infantry or artillery at the critical moment when the enemy is most demoralized and about to break; (c) leading the pursuit in case of victory or covering the withdrawal in case of defeat; (d) threatening or attacking the enemy's line of communications; (e) raids for various purposes.

When dismounted, a cavalry force with horse artillery attached is equivalent in combat to an equal force of infantry and artillery. In fact, if such thing were possible, an ideal army would consist exclusively of cavalry and horse artillery, and the necessary auxiliary troops. Such an army would have the important advantage of superior mobility and flexibility, while the number of men it could place in the firing line would be equivalent to the same number of infantrymen. However, on account of the limited number of suitable horses available, and the limited number of men who can ride or can be trained to ride, it is impossible to obtain sufficient cavalry; and, on

account of the difficulty in many countries of supplying a large mobile force of this character in the field with rations, forage, ammunition, etc., where these supplies must be hauled long distances by wagons, the strength of such a force is limited by the number of men and animals that can be supplied with rations and forage. It is, therefore, necessary, to use for the main part of the fighting force infantry, which is limited only to the number of able-bodied male citizens in the country and to the available supply of arms and ammunition. Moreover, on account of the slower movements of infantry, the problem of its supply is very much simplified.

Hence the necessarily limited force of cavalry is assigned as its principal work the duties of screening and of reconnaissance, for which it is eminently fitted, and which no other arm of the service can perform.

There is a very important factor without which the most efficient reconnaisance is useless, and that is a prompt and reliable method of *communication* at a distance. Of what use is positive information concerning the enemy's strength, position, movements or intentions, if this information does not reach the commander concerned in time for him to make the proper dispositions to meet or to avoid an attack or to take advantage of some weakness of his adversary?

Until recently, transmission of information was maintained entirely by means of messengers. During our Civil War messages were first sent by means of signaling, at first visual, and later to a limited extent by wire.

At present our Signal Corps is equipped with the most modern facilities for communication. This branch of our service is able to connect the larger units with headquarters by wire, to establish wireless communication with the cavalry, and to provide an auxiliary means of ærial reconnaissance and communication by means of balloons and æroplanes.

Let us consider two equal opposing armies and suppose that the cavalry of each is able to obtain the same amount of equally important information. It is evident that, where much depends on a knowledge of the other's movements, etc., the commander of either side who receives the desired information very much sooner than the other has a desired advantage.

We will take a number of possible cases concerning the relative facilities for communication on each side and draw conclusions as to results:

Case 1. Both sides have equal facilities. Other things being equal, it is apparent that each side has an equal chance.

Case 2. The Blue Army is provided with the best modern equipment for wireless and wire communication, and has a sufficient number of trained men to operate the same. The Red Army has no modern appliances for this purpose, but must depend entirely on mounted messengers. The opposing forces are not so close together that only mounted messengers are needed, but are separated by a considerable distance, so that it will require several hours for the delivery of messages by means of messengers. Clearly the Blue Army has a great advantage in this case.

The foregoing conditions of the Red Army are not likely to occur in modern warfare between civilized countries; nevertheless the following similar case is probable:

Case 3. The Blue Army—same as in case 2. The Red Army has the same kind and amount of equipment as the Blue, but only a small detachment of signal troops accompanies its cavalry. The few officers and enlisted operators with this detachment have been killed, severely wounded or captured during the cavalry combat, except one man, who, being a very poor rider, had been unable to keep up with the cavalry after starting and was soon obliged to fall out. There are no officers no enlisted men in the cavalry who can either set up or operate a wireless or buzzer station. Evidently the Red Army is as unfortunate as in case 2.

Case 4. The Blue Army has the same equipment as in cases 2 and 3, but has, however, as a part of its cavalry organization a certain number of troops which are supplied with this equipment, including wireless and buzzar apparatus. All of the cavalry officers and many of the enlisted men are trained in the proper handling and operation of this apparatus. Every cavalry officer, from the commander to the junior lieutenant, understands the value of and is trained in the use of this part of the cavalry equipment. The commander himself knows

from experience its possibilities and its limitations, when and how to make the best use of it, how to write quickly and send the proper messages, and when to use messengers to send visual signals instead of using electrical means.

Another advantage of such a system, besides that of supplying headquarters with prompt information is that which the cavalry commander obtains in thus being able to make better dispositions of his own command. He is obliged to keep the bulk of his force concentrated and in hand in order to be able to meet the enemy's cavalry most advantageously. Without prompt and definite information he is more or less in the dark as to the best route or direction to take. If he is obliged to wait for reports from his contract troops or squadrons, and if their commanders in turn must wait to hear from their various patrols or other subdivisions by means of messengers in all cases, a considerable delay is unavoidable, and he may thus lose a valuable opportunity, or, if he acts too soon before his information is sufficiently complete, he may make faulty dispositions. If on the other hand, he can readily communicate by wireless or buzzer with his divisions, his information would be received promptly, and would be more complete. His problem is then very much simplified. The reports with which an aviator could supply him, where æroplanes are used to assist in reconnaissance, might be most valuable in clearing the situation for him. He may thus be enabled to locate points in the enemy's cavalry screen which he could penetrate, or he may obtain information regarding a movement of the hostile cavalry which he would then be able to oppose.

Whether the necessary materiel is actually furnished to cavalry organizations in the field as indicated above, or whether this materiel remains in the hands of signal troops which accompany the cavalry, there would arise numerous instances in time of war when the ability of cavalry officers to use this equipment in the transmission of information would be of the greatest value to the service. Cavalry operating in advance of the army is divided into so many small groups that it is impossible to send officers or enlisted men of the Signal Coprs with each fraction. Even with small patrols a cavalry officer could use a small pocket sending or receiving wireless apparatus to advantage. He could tap a telegraph wire used by the enemy and gain valuable information from messages going over the wire.

Reconnaissance and transmission of information by the most improved methods must go hand in hand if we expect to succed in any war with an enterprising, up-to-date enemy. The "eyes and ears" of an army without such system of communication would become as useless to the head of the army as the eyes and ears of an individual would if the nerves connecting these organs to the brain were severed.

An example of such uselessness was that of Stuart's Cavalry during the battle of Gettysburg. Stuart was at that time engaged in making a raid in which he made a complete circuit around the Federal army. How different Lee's problem might have been had he been able co communicate with Stuart.

If the subject of transmission of information is so closely related to that of reconnaissance, which is universally regarded as cavalry's most important function, why then are not more cavalry officers detailed to take the course in the Army Signal School and detailed for service with field companies? In the writer's opinion, the answer is that the benefits to be obtained are professional rather than personal. It is not to be expected that individuals will often voluntarily sacrifice their personal conveniences in time of peace. A cavalry officer is already a mounted officer. Hence in that respect he sees no advantage in serving with the Signal Corps. He is well satisfied to remain in the cavalry, and, indeed has a good reason to feel satisfied. Unless he is greatly interested in the technical work of the Signal Corps, he will not apply for duty therewith. As he grows older he becomes less inclined to take up new and technical work. Many of the younger officers who might otherwise apply for such duty prefer a course in the Mounted Service School. If these younger officers cannot take the course at Fort Riley and also that at the Army Signal School, they generally choose the former. If given the opportunity, however, it is believed that many of them would gladly take both courses.

When the training of cavalry officers is made to include a thorough course of study and practice in field signal communication, then, and not before, can cavalry reconnaissance be perfected.

DAILY DIARY OF EQUITATION WORK AT THE MOUNTED SERVICE SCHOOL.

(Including Field Officers' Class.)

APRIL AND MAY, 1912.

TRAINING CLASS.

Schedule April 1st to April 30th—about 1½ hours per day.

April:

1. In hall 1¾ hours: Work at will: Drill by threes, right (left) about, two track, halts, canter on both hands.
2. Outside 1¼ hours: Road work at walk and trot. Took course of log jumps in Sheridan woods.
3. Outside 1¾ hours: Run with wolf hounds.
4. Outside 1¼ hours: Road work and schooling over low jumps in Sheridan woods.
5. In hall 1 hour: Work out by threes at trot and canter. Work at will. Individually, on left hand "haunches left" and change direct to "haunches in," "haunches right" and change direct to "haunches out."
6. Outside 1¼ hours: Trot and canter. Took three flights of low rail and log jumps at a canter in column.
8. In hall 1 hour: Work out and drill, same as 5th for individual work.
   Outside ¾ hours: Gallop 5 minutes dismount, lead and grazed when cool.
9. Outside 1¼ hours: Road work and galloped over brush course on Republican Flats one mile.
10. In hall 1½ hours: Work out. Work at will. "Shoulder in" on both hands, first at a walk and later at slow trot.
    Outside ¼ hour: Road work and grazing.
11. Outside 1½ hours: Scramble in ravines and woods, five jumps in the Magazine Cañon course.
12. In hall 1¾ hours: Work out, drill by threes in exercises. Individually "shoulder in," at school trot on both hands. Work at will and canter.

13. Outside 1¼ hours: Road work and one and a quarter mile extended gallop, dismount, lead and graze.
14. In hall ½ hour: Work out, work at will. Individually "shoulder in" and "shoulder out" on both hands. Outside 1¼ hours: Gaiting at 12-mile gallop on mile course in Sheridan Woods.
16. Outside 1¼ hours: 1¼ miles over course of jumps on Republican Flats at gallop, walk and graze.
17. In hall 1¾ hours: Work out at will, canter at will. Individually "shoulder out" on both hands.
18. Outside 1¼ hours: Gallop over brush humps in the Magazine Cañon course.
19. In hall 1¼ hours: Work out. Work at will. Individually "shoulder in (out)" and change of lead on change of circles and change of hands.
    Outside ½ hour: Road work.
20. In hall ¼ hour: Work out.
    Outside 1¼ hours: Gaiting at 12-mile gallop on the course in Sheridan Woods; lead and grazed.
22. Outside 1¼ hours: Long trot. In column, first individual riders were sent off at a gallop to return at a trot, and then riders were sent off in pairs in the same manner.
23. Outside 1½ hours: Gallop in line jumping brush hurdle one at a time and in pairs.
24. Same as 23d, only jumping by threes and fours.
25. In hall 1¼ hours: Work out. Work at will. Individually change of leads on change of circles.
26. Outside 1½ hours: Jumping brush hurdle in line and road work.
27. In hall 1 hour: Work out, work at will. Individually change of leads.
29. In hall 1¼ hours: Work at will. Change of leads on changing hands.
30 Entire school to Ogden Flats for review: Assignment of breaking colts and muster of 1st and 2d training colts with a view to their disposition for new year.

Schedule May 1st to May 31st—about 1½ hours per day.

May:

1. In hall 1 hour: Work at will. Individually, haunches right (left) shoulder in (out), haunches in (out), change of lead on diagonal.
   Outside 1 hour: Trot and canter.

2. Outside 1¼ hours: Road work and gallop ¾ miles at 18 miles per hour over Republican Flats' brush course.
3. In hall 1 hour: Same as 1st.
4. Outside 1 hour: Road work, cross country and ¾ mile straight away at pace of 20 miles per hour.
6. In hall ¾ hours: Work at will, storm interrupted outside work.
7. Outside 1 hour: Road work and schooling over Magazine Cañon jumps.
8. Outside 1½ hours: Road and cross country work. Took colts to firing point on target range while troops were firing.
   In hall ½ hour: Individually on left hand "shoulder in," "haunches right" and "haunches out," direct. Change of lead.
9. Same as the 8th.
10. In hall 1 hour: Work at will. Individually, 1st slow trot, halt, back, trot out; 2d slow trot, halt, turn on haunches to right about; 3d slow trot, turn on haunches and back to the track on two tracks.
11. In hall 1¾ hours: Work at will. Individually, change of leads, both hands, taking jumps without wings and set out in center of hall.
13. Outside 1¼ hours: Road work, and 1½ miles at pace of 15 miles per hour.
14. In hall 1½ hours: Work at will, figure of eight on the haunches.
15. Outside 1½ hours: Road work, gallop 1 mile at 22 miles per hour pace. Jumping in Sheridan Woods.
16. Outside 2 hours: To Ogden Flats and galloped over the jumps set for 6th Field Artillery "Russian Ride."
17. In hall 1 hour: Work at will, drill at canter, jumping without wings.
18. Outside 1 hour: Gallop over jumps in Sheridan Woods.
20. Outside 1 hour: Trot and long canter.
    In hall ¾ hours: Work at will, individually, figure of eight on the haunches, change of leads.
21. Outside 1½ hours: Gallop 2½ miles at pace of 17 miles per hour over jumps set for Thirteenth Cavalry "Russian Ride."
22. Outside 1½ hours: Training on race track field. Repeating hall exercises in the open.

23. In hall ½ hour: Training at will and, ½ hour outside over a few jumps in Sheridan woods.
24. In hall 1 hour: Individually, shoulder in on both hands, figure of eight on the haunches.
25. In hall 1 hour: Drill by platoons and jumping without wings.
27. Outside 1½ hours: Schooling over ditch jumps, and training exercises on Race Track field.
28. Same as 27th, only schooled over jumps in woods.
29. At race track: Scoring for Stockholm team in try out over the course.
31. In hall 1 hour: Training at will. Individually figure of eight on haunches and change of leads.

SCHOOL CLASS.

Schedule April 1st to April 30th—about 1½ hours per day. Saturdays excepted.

April.

1. In hall 2 hours: Work by threes executing change of direction, by the flanks, individual abouts, halts, on two tracks, haunches in, obliques; practiced taking the lead (right and left) from a slow trot on straight lines. Executed change of lead in center of hall while at a gallop in column of troopers. Had whip exercise and rode individually over one 3-foot jump several times.
2. Outside 2 hours: Took log jump in woods. From top of hill above cemetery, galloped to vicinity of Morris Hill and returned to stables via Magazine Cañon.
3. Outside 1 hour: Walk, trot and gallop.
   In hall 1 hour: Executed movements by threes, including two tracks and haunches in; executed change of lead in center of hall while riding in column on the diagonal. Had whip exercise. Practiced individually shoulder in. Rode over two 3-foot jumps several times.
4. Outside 1 hour: Same as the 3d, except that some jumping was added.
   In hall 1 hour: Review same as 3d, except that whip exercise was combined with jumping over a very small hurdle.
5. Outside 1 hour and inside 1 hour: Review same as 4th.

8. Outside 1 hour: In woods at walk, trot and gallop. Horses are temporarily weakened from the effects of warm weather, increased work and the shedding period. Inside 1 hour: Worked at will collecting and executing the various exercises. Changed lead on straight line while passing across hall at gallop. Practiced whip exercise while taking small jumps.
9. Outside 1 hour and in hall 1 hour: Review same as for 8th. Advance, worked for a short while with reins in one hand only.
10. Outside 1 hour: Exercised in woods and took several jumps; also jumped two brush hurdles on Republican Flats.
    In hall 1 hour: Described the seat, executed small circles on the haunches, executed haunches in, two tracks and shoulder in.
11. Outside 1 hour: In pairs over the hills at walk.
    In hall 1 hour: Review same as for 10th.
12. Outside 1 hour: Rode in woods at trot and gallop and took several jumps, ranging from 3 ft. to 3 ft. 6 in.
    In hall 1 hour: Worked by threes at all gaits, practiced taking gallop on straight lines and turning on haunches.
15. Outside 1 hour: On road in pairs at walk.
    In hall 1 hour: Executed circles, figures of eight, two tracks, turns on the haunches, haunches in and shoulder in, taking gallop on straight lines and change of lead on straight lines.
16. Outside 1 hour: Took several 3-ft. 6 in, jumps in woods. Rode down over Republican Flats and took one ditch jump.
    In hall 1 hour: Review same as 15th.
17. Outside 1 hour and in hall 1 hour: Review same as 16th.
18. Outside 1 hour: In woods at trot and gallop and jumped several 3 ft. 6 in. hurdles; also rode down over Republican Flats, took one rail and ditch jump, two brush jumps and returned to stables.
    In hall 1 hour: Worked individually (at will) and by platoon, collecting and executing circles, abouts, obliques, halts, haunches in, two tracks, shoulder in, backing and abouts on haunches.
19. Outside 1 hour: Jumped one 4 ft. fence on race track several times, one horse moving out at a time and remaining on far side of fence after making then jump.
    In hall 1 hour: Review same as 18th with change of lead at gallop on a straight line added.

22. In hall 1¼ hours: After a few minutes work out, executed by platoon, circles by flanks, halts from trot and slow trot, change of lead at gallop, individually and by threes. Put horses through chute over one jump 3 ft. and one 3 ft. 8 in. high.
23 In hall 1¼ hours: Review same as 22d.
    Outside 2 hours: Went to see the 4-mile ride of the Sixth Field Artillery officers on Ogden Flats.
24. Outside 2 hours: Weighed horses, afterwards walked them; also grazed for a few minutes.
25. Outside 1¼ hours: Worked in woods at walk, trot and gallop, took several jumps not exceeding 3 ft. 6 in. and grazed a few minutes.
26. In hall 1 hour: Worked at slow trot, trot and gallop, executing circles, movements by flanks, abouts, halts, two tracks, shoulder in, haunches in, gallop with both leads, change of lead on curves and straight lines.
29. In hall 1 hour: Worked out for ten minutes, executed the exercises by threes including change of lead on straight line. Jumped one hurdle 3ft. 6 in, high several times.
30. Outside 3 hours: Attended garrison review on Ogden Flats.

Schedule May 1st to May 31st—about 1½ hours per day. Saturdays excepted:

May.

1. In hall 1¾ hours: Worked at will at trot, then everybody at same time at the slow trot; worked successively on circles, straight lines, haunches in (both hands), two tracks, shoulders in (both hands), gallop leads alternated at short intervals. Worked by platoon, changing lead at gallop by trooper and by fours in center of hall. Jumped 3 ft. 6 in. hurdle several times. Grazed about five minutes.
2. In hall 1¾ hours: Review, same as 1st.
3. Outside 2 hours: Rode in woods at walk, trot and gallop, taking small jumps; rode down over Republican Flats and jumped one ditch, one log, one rail, one rail and ditch and two brush jumps, grazed twenty minutes.
6. In hall 1 hour: Worked out five minutes; worked by trooper and by threes on circles, straight lines, haunches in, shoulder in, two tracks, on forehand to right and left and backing.

7. Outside 2 hours: Jumped several log hurdles in woods, and two ditch jumps near race track, galloped over flats to target range and back to polo field; walked to post and grazed for twenty minutes.
8. In hall ½ hour: Executed by flanks, circles, halts, backing, on forehand to right and left, change of lead at end of diagonal; practiced taking the gallop on straight lines from the slow trot. Outside ¾ hours: Rode at walk over soft and slippery ground, jumped two ditches in vicinity of race track; also one log and one pole jump.
9. In hall 1¼ hours: Worked by threes executing by flanks, circles, halting, backing, turning on forehand to right and left; rode at gallop around hall to rear of column, executed first trooper from front to rear; rode over two brush hurdles several times.
10. In hall 1½ hours: Went through the various exercises and took two jumps, one 3 ft. 8 in. high and one 4 ft. high. Outside ½ hour for walk and grazing.
13. In hall 1 hour: Work out for ten minutes on both hands at walk and trot. Executed by platoon, individual abouts on haunches, by the flanks, halts, changes of gaits, serpentines, spirals and backing. Reins are held in one hand only part of the hour.
14. Took pictures of class at school work. In hall ½ hour jumping hurdles 3 ft. 8 in. high.
15. In hall ½ hour: Worked at walk, trot and gallop on track, serpentines, abouts, circles, halts and backing. Outside ¾ hours: Rode in woods and took log and pole jumps.
16. Same as 15th, except that some jumping was done in hall by dropping the reins when making the leap.
17. Outside 2 hours: Horses were sent in pairs for walk, trot and canter; some jumping over small hurdles and grazing.
20. In hall 1 hour: Collected work, including haunches in, shoulder in and two tracks. Jumped one hurdle 3 ft. high several times.
21. In hall 1 hour: Practiced collecting, flexing and backing; galloping by flanks, riding on circles and halting. Jumped hurdle 3 ft. high several times.
Outside 1 hour: Galloped over ditches, walked up and down slopes and grazed.

22. In hall ½ hour: Same as 21st, except that no jumping was done.
Outside ¾ hours: Work the same as for the 21st.
23. Ride for Senior Class, Kansas State Agricultural School.
24. Outside 2 hours: Rode in woods, took log jumps and two rail jumps 3 ft. 6 in. high; also jumped two ditches and the water jump near race track. Walked on road and did some collected work on sod.
27. In hall 1 hour: Work out and riding at will doing collected work. Rehearsed "forehand in," "shoulder in" backing and "two tracks."
28. Outside 1 hour: Trotted about two miles in woods and several miles over hills.
In hall 1 hour: Worked at collecting, balancing and shortening stride. Took 3 ft. 8 in. jump several times. Rehearsed following: Putting on curb bridle (training colt), the first time; holding reins (three methods and their variations), and feeding.
29. Schooled horses not used; student officers witnessed and scored riding of the Olympic team held on race track.
31. Outside 2 hours: Jumped several hurdles in Magazine Cañon; went for long trot and walk.

JUMPING CLASS.

Schedule April 1st to April 30th—One to two hours per day.

April.

1. Outside: Gallop 1½ miles trying for a 20 mile per hour rate.
2. In hall: Work at will, suppling exercises.
3. Same as 1st.
4. In hall: Suppling exercises for riders and horses; jumping three times over three 3 ft. jumps on one side, 3 ft. 6 in. stone wall and triple bar on other.
5. In hall: Suppling and gaiting at will.
6. In hall: Suppling; galloping in pairs; riding and jumping without stirrups or reins, twice over four jumps 3 ft. high, 20 ft. apart.
8. Outside: Winding through woods well strung out in column at gallop over about twenty jumps up to 3 ft. 6 in.; individually over ten jumps 3 ft. 4 in.
9. Same as 8th.

10. In hall: Suppling exercises and jumping without riders through chute, jumps 3 ft. 8 in. to 4 ft.
11. Outside: In column at walk and gallop over ten jumps 2 ft. 6 in. to 4 ft.; individually practicing fifteen mile gallop for one mile, twice.
12. Outside: In race track over five board fences 4 ft. to 4 ft. 3 in. in column and by trooper.
13. In hall: Suppling exercises; galloping in pairs and threes; five jumps 3 ft. high scattered over hall taken from serpentine, twice at walk.
15. Outside: Over five 4 ft. post and rail jumps, walking in between; inspected breaking colts in pasture.
16. Same as 15th.
17. Outside: Walk on road ½ hour:
    In hall: Six 3 ft. jumps on track taken at slow trot from circles tangent to jumps.
18. Same as 12th.
19. Outside: Individually over a 4 ft. post and rail four times; in line at gallop over ditch 8 ft. with guard rail, open ditch with brush 3 ft. 6 in, and plain brush 3 ft. 6 in.
20. In hall: Suppling exercises; jumping five jumps 3 ft. high 20 ft. apart, first time over with reins and stirrups, second without reins, arms folded, third no reins, no stirrups, hands on thighs.
22. Outside: Leaving stables by trooper two minutes apart, walk ¾ mile, gallop two miles across rough ground and five post and rail jumps 3 ft. 10 in. to 4 ft. 3 in., walk home.
23. Outside: Rode out to see four mile ride by artillery officers on Ogden Flats.
24. Outside: Quiet walk up and down hills.
25. Outside: Walk thirty minutes, slow trot ten minutes, gallop five minutes over two 5 ft. ditches 12 ft. water jump, two post and rails 4 ft. and 4 ft. 2 in.
26. Outside: Over water jump one by one.
27. In hall: Suppling exercises for horses and riders; jumps on track two 3 ft. 9 in. bars, 3 ft. 8 in. stone wall, triple bar 4 ft. wide, over all at gallop.
29. Same as 8th.
30. Review with troops of garrison.

May.

1. On road, walk trot and gallop.
2. Same as first.
3. Short drag hunt with fox hounds.
4. In hall, field officers' class observing: Suppling exercises for horses; jumping five jumps 3 ft. high, 20 ft. apart, first time over with reins and stirrups, second time no reins, arms folded, third time no reins or stirrups hands on thighs.
6. On road, quiet walk in pairs.
7. Drag hunt.
8. On road, walk and slow trot.
9. In hall: Suppling exercises at will; jumping two bars jumps 3 ft. 9 in. on track taken twice at gallop.
10. Drag hunt.
11. In hall: Jumping bars 3 ft. 9 in., stone wall 4 ft. over twice at gallop.
13. Outside: Walk and trot on road; twice over 4 ft. post and rail.
14. Drag hunt.
15. Went over horses, estimating heights and weights, examining also as to soundness and conformation weaknesses. On road, walk and trot.
16. Same as for 15th.
17. Drag hunt.
18. In hall: Over in and out 3 ft. 6 in. and 3 ft. 5 in., also 4 ft. and 3 ft. 9 in. Then pig pen 3 ft. 6 in., 3 ft. 5 in. 3 ft. 9 in.
20. In hall: Jumping bars 3 ft. 9 in and 4 ft. and stone wall 3 ft. 6 in. and 4 ft.
21. Drag hunt.
22. Outside: Jumping post and rail 4 ft. over, turn back over.
23. In hall: Exhibition for Kansas State Agricultural College students: Jumping same as 4th. Also 4 ft. rail jump and 4 ft. stone wall.
24. Drag hunt.
25. In hall: Over 4 ft. rail on one side then around the turn and change hands and on other hand over 4 ft. stone wall, all at the gallop, only one rider in the hall at a time.

27. In hall: Jumping bars, 4 ft. and 4 ft. 3 in. Members of class called on for criticism of each other.
28. Drag hunt.
29. No work, horses led forty-five minutes by stable men.
31. In hall ¾ hours over various jumps, then on road at will 2 hours.

SECOND TRAINING CLASS.

Schedule April 1st to 30th—about 1½ hours per day.

April.

1. In hall: Longed as usual. Ridden at walk and trot in column and at will with practice in turning by the flanks. Also practice at will in halting from the walk and resuming the walk, and causing the horse to yield the haunches to the application of the leg for a few steps. Practice in mounting, dismounting, sitting in rear of the saddle and rolling around on the colt.
2. In hall: Same as the first.
3. In hall: Same as the 1st.
4. In hall: Same as the 1st, with the addition of more work in column, and first trooper from front to rear, yielding the haunches to the leg while in column. Taking the gallop for a short time on both hands.
5. In hall: Same as the 4th.
6. In hall: Same as the 4th.
8. In hall: Same as the 4th.
9. In hall 1 hour: Work at will, walk, trot and gallop; also in changing directing, in increasing and decreasing the gaits. Also the same in column and in threes at walk and trot. Clambering around over horses at will.
   Outside ½ hour: Wandering around in the vicinity of the hall at a walk.
10. In hall ¾ hour: Same as the 9th, with the addition of "On forehand half turn in reverse" at both walk and trot.
    Outside ¾ hours: On road and on flats. Put colts in close order line for the first time and moved at walk and trot. Changed directions by having the pivots slightly lessen the speed and the marching flanks slightly increase the speed without either side taking a new gait, this so as not to excite the colts by taking a new gait for a short distance.

11. In hall and outside: Same as the 10th.
12. In hall and outside: Same as the 10th.
13. In hall 1 hour: Work at will, in column by threes. Taking the gallop with a true lead on both hands. On forehand half turn and reverse. Also a few steps in "On two tracks right (left) oblique."
    Outside ½ hour wandering around in pairs.
15. Same as the 13th.
16. In hall ¾ hours: Same as the 13th with the addition of accustoming the colts to noises such as drums and firing.
    Outside ¾ hours: On road and flats at walk and trot in line. Also accustoming the colts to stone crusher and train.
17. Outside 1½ hours: Long walk, trot and canter on flats and hills.
18. In hall ¾ hours: Usual work at will and by threes. Commenced backing a few steps at a time. Pounding of an oil can so as to accustom horses to firing and drums. Mounting and dismounting and rolling around on horses.
    Outside ¾ hours: Wandering around and letting horses graze.
19. Same as the 18th.
20. In hall 1 hour: Work at will and in column by the flanks, abouts, changing gaits, on the forehand, on forehand half turn in reverse, a little backing, also rolling around on horses.
22. In hall 1 hour: Work out at will at slow trot and trot. Work by platoons executing serpentines, changes of direction, circles, on forehand half turn in reverse; displace haunches to inside along track at walk and slow trot, and to outside near track at end of diagonal. Work by threes executing by the flanks, halt and backing at will.
    Outside ½ hour: Wandering around in vicinity of riding hall.
23. In hall 1 hour: Work out at will at trot and gallop both hands. Exercises by platoons same as the 22d. Accustoming the colts to the saber by using the whip in executing cuts right, left, and rear, moulinet, points, etc. While passing in opposite directions whips of opponents were struck by reaching well out with arm extended. Formed in line and executed movements by fours at walk.
    Outside ½ hour: Walk on soft ground and grazed.

24. In hall 1 hour: Usual work in column. On right (left) into line, rear or leading trooper halting, others keeping on and halting successively. Practice on the gallop lead, executing cuts, etc. with whips, beating of drums, rolling around on colts.
25. In hall 1 hour: Work out at will for a few minutes first at slow gaits and gradually increasing until finally taking the gallop on both hands. Serpentines and changing of directions at the trot, sitting down on turns. Rider at head of column individually took inner track halting and kept horse standing with increased distances until all had halted, then all at will took up the gallop on both hands. Beating of can and use of whips.
Outside ½ hour for walk and grazing.
26. In hall 1 hour: Work at will. Executed movements by threes, backing a few steps, individually. Mounting and dismounting on both sides, sitting in rear of saddle, handling feet, etc.
Outside ½ hour: Formed in line and executed half turns by slightly increasing the gait on the marching flank.
27. In hall and outside: Same as the 26th.
29. In hall 1 hour: Work at will as usual. Work by platoons with everything to date, with the addition of forming in line and executing movements by fours.
Outside ½ hour wandering in vicinity of riding hall.
30. In hall: Colts were looked over and classified with a view to determining the disposition of same for the coming school year.

Schedule May 1st to 31st—about 1½ hours per day.

May.

1. Outside 1 hour: Rode at a walk through ravines, up and down slopes and over soft (spongy and heavy ground).
In hall 1 hour: Few minutes work out at the trot, then everybody at will, worked successively on small circles, straight lines, haunches right and left on track to interior, halting, backing, and work by threes. Handled and gentled colts by dismounting and mounting on both sides, leaning shoulders on horse's rump, sitting in rear of saddle, lifting feet, etc.
2. Outside 1 hour and in hall 1 hour: Review, same as 1st.
3. In hall 1 hour: Work out for ten minutes on both hands at walk and trot; review same as first.

4. In hall 1 hour: Work out for ten minutes at trot and slow trot. Same as work in hall on 1st with lateral flexions at walk and trot added; also extended gallop on both hands.
6. Inside 1 hour: Work out for ten minutes at walk and trot. At will and by platoon executed circles, haunches right and left (on track), rode on straight lines, by the flanks, turned on forehand, backed, halted from slow trot, galloped with extended distances.
7. In hall 1½ hours: Work out for ten minutes. Work at slow trot, trot and gallop. Executed abouts, haunches right and left, halts, changes of gaits. Outside for ten minutes to graze.
8. In hall 1 hour: Worked at will for ten minutes on both hands at the trot. Executed circles, serpentines, halts, lateral flexions. Advance, mild set of "haunches in" starting in corner, two tracks in column for one horse's length to track along wall and haunches right and left, first to outside then to inside of large circle while passing a given point.
Rehearsed half turn in reverse, haunches right (left), and "on two tracks."
9. In hall 1 hour: Review same as 8th. Outside ½ hour for walk and grazing.
10. In hall 1 hour and outside 1 hour: Review same as 8th.
11. In hall 1½ hours: Work out for ten minutes. Executed circles, half turns in reverse by the flanks, halts from slow trot and trot, serpentines, spirals; executes first trooper from front to rear towards the interior of hall, halted on inner track with horse at attention for a moment then at rest with reins full length; all troopers in rear did likewise, halting from twenty to thirty feet in rear of preceding trooper; all moved obliquely to track and took true gallop at will. Gentled colts; had close order drill by fours in line and column.
13. Outside 1½ hours: Exercised in woods at walk and trot on road, through brushes, up and down slopes, and over soft spongy ground. Drilled by fours in line and column and jumped ditch several times near race track; grazed for a few minutes. Colts are improving greatly in strength and handiness.
14. Inside 1 hour: Work out for ten minutes. Went through the various exercises, including two tracks. Led over bar on ground at end of reins, then with bar on standards

about one foot high, then repeated same with rider up.
Outside ½ hour: Executed movements in line and in column of fours and grazed.

15. In hall 1 hour: Practiced collected walk, flexions, trot with some collection, gallop with mild use of diagonal aids; circles, abouts, halts.
Outside 1 hour: Rode over ditches, up and down slopes through woods; had close order drill in line and column of fours, and grazed.

16. Outside 1½ hours: Rode over rough ground, over ditches, up and down slopes and through ravines.

17. In hall ¾ hours: Collected work, individually and by platoon—no galloping.
Outside ¾ hours: Rode at gallop over ditches, up and down slopes; rode at walk through woods, grazed for a few minutes.

20. In hall ½ half hour: Worked by platoon at walk and slow trot, collecting and flexing.
Outside 1 hour: Rode over rough ground, logs and ditches and through woods. Had close order drill in line and column of twos and fours.

21. In hall ½ hour: Executed circles, abouts, halts, backing, by flanks; first trooper from front to rear; practiced leaving column and halting, keeping horse quiet and at rest; rode over very small jump.
Outside 1 hour: Review same as 20th.

22. Outside 1¼ hours: Rode in woods and jumped several small hurdles; also jumped ditches near race track and one brush hurdle on Republican Flats.
In hall ¾ hours: Review, same as 21st.

23. In hall 1 hour: Same as 22d. Outside ¾ hours: Review same as 22d.

24. In hall 1½ hours: Executed circles, half turns on forehand, haunches right (left), backing; jumped one hurdle about 2 ft. high, several times.

25. In hall ¾ hours: Review, same as 24th. Outside ¼ hour. Review, same as 24th.

27. Outside 1¼ hours: Jumped log jumps in woods and ditch jumps on Republican Flats; walked, trotted and galloped over grassy places; grazed.

28. In hall 1¼ hours: Work out at will; executed circles, haunches right (left), lateral flexions, backing, gallop on both hands.
Outside ¼ hour grazing.

29. In hall 1 hour: Practiced collected work, flexions, backing, haunches right (left), gallop with both leads.
Outside ½ hour: Walked and grazed.

31. In hall 1 hour: Review same as 29th.
Outside ½ hour: Jumped hurdles in woods.

BREAKING CLASS.

Schedule April 22d to 30th—¾ hours per day.

The object of this class is to give the student officer practice in breaking the young colt. These colts are assigned to individuals and will be handled by them during the remainder of the school year. During this time they should teach the horse to work on the longe, to allow himself to be quietly mounted and dismounted, and to bear his rider at the walk and trot.
At the end of the school year these horses go back into the pasture and at the beginning of next year enter the training class in which their schooling as an officer's charger should be completed. Twenty-eight colts are in the class, three-fourths of which are thoroughbreds received from the Front Royal Remount Depot; a few are half-breds from the Fort Reno Remount Depot, and the remainder are odds and ends which were on hand at school. The majority of the colts are three years of age.

April.

22. In hall ¾ hours: Horses were bridled in stalls with snaffle bridles and led to the hall, around which they were led for a short time, and then halted and an effort made to pat and play with them.

23. In hall, same as the 22d, with the addition that canvessons were put on in hall and horses started longeing in longeing pen. This work was gone at very easily and only kept up for a short time with frequent halts during which horses were played with and patted, and everything done to calm them and gain their confidence.

24. In hall: All horses bridled in stalls and longes put on in hall. Part longed with pens and part without.

25. In hall: Most of the horses longed without pens.

26. In hall: Same as the 25th, with addition of surcingles being put on.

27. In hall: Same as the 26th.
29. In hall: Same as the 26th.
30. In hall: Colts classified and assigned to the student officers.

Schedule May 1st to 31st—about ¾ hours per day.

May.

1. In hall ¾ hours: Longed, handled feet, put on circingles.
2. Same as 1st.
3. Same as 1st, and in addition laid on saddles.
4. In hall 1 hour: Longed with and without saddles, let down stirrups and mounted.
6. In hall ½ hour: Longed, handled and mounted.
7. In hall 1 hour: Same as 4th, and in addition rode on both hands at a walk.
8. Same as 7th.
9. Same as 7th, increasing time at walk to 15 minutes.
10. Longed thirty minutes and led to scales to be weighed.
11. In hall 1 hour: Longed, rode at walk and jog trot on both hands.
13. In hall 1 hour: Longed, rode at walk and jog trot on both hands.
14. Same as 13th, increasing time at jog trot and at will at walk.
15. Same as 13th, and in addition extending trot and rising to the trot.
16. In hall 1 hour: Longed a few minutes, mounted and rode at walk, jog trot and trot out. At jog trot, circles and serpentines in column, crossing the hall and riding at will.
17. Same as 16th.
18. Same as 16th, and in addition dismounted, whip exercises.
20. Same as 18th.
21. Same as 18th, only decreasing the longeing and increasing the time under the saddle.
22. Same as 21st, increasing the work at will and using lateral aids.
23. Same as 21st, and in addition canter on both hands.
24. In hall 1 hour: Walk, trot, canter, in column, circles, change of direction, change hands, first trooper front to rear and last trooper rear to front, changes of pace, spirals, etc., dismounted whip work.
25. Same as 24th.
27. Same as 24th.
28. Same as 24th.
29. Longed a few minutes in the hall, and outside for road work for rest of the hour.
31. Same as 29th.

DIARY FIELD OFFICERS' CLASS.

April.

2. Talk on the aims and methods of the Mounted Service School. Explanation of what the Field Officers' course was to be, *i. e.*, resume of the course of instruction followed by the line officers' class, with the talks and explanations given to this class, putting these into practice as far as circumtsances will permit, and the observation of the regular class and its work.
   In hall ¾ hours: Observing the regular class working the first training colts.
   In hall 1½ hours: Riding schooled horses, explanations of mounting and dismounting with the flat saddle, the seat as taught at this school and the reasons for adopting the same, the holding of the reins and the double snaffle bridle, riding at will at the walk and trot.

P. M. Lecture on the aims and methods of the Farriers and Horseshoers School, by Lieutenant Lear. Lecture on the anatomy and physiology of the horse's foot by Veterinarian Jewell.

3. In hall 1 hour: Riding jumpers at walk and trot. Explanation of how to post at the trot. Explanations of three hands in riding, *i. e.*, the heavy hand, the light hand, and no hand, with suggestions as to how to obtain the light hand and why that one is desired; also explanation of the use of the aids with alternate action. In hall 1 hour, observing regular class on schooled horses. Outside 1 hour, riding schooled horses and visiting school pastures.

P. M. Lecture on normal horseshoeing by the chief instructor of horseshoeing.

4. In hall 1 hour: Riding schooled horses at walk, trot and gallop. Explanation of using the aids for gathering the horse and increasing or decreasing the gait.

Outside 1 hour: Walk and trot for 1½ hours in woods, also at will jumping about eight log jumps.
In hall 1 hour, observing regular class on jumpers.

P. M. Lecture on conformation and defects, by Veterinarian Plummer.

5. In hall 1 hour: Observing work of regular class with first training colts.
In hall 1 hour: Riding jumpers at walk, trot and gallop. Also work in column at walk and trot, executing by the flanks and first trooper from front to rear, practice in halting and moving to the front. Outside 1 hour at walk and trot in Magazine Cañon taking at will most of the jumps.

P. M. Lecture on pathological shoeing by the chief instructor in horseshoeing.

6. In hall 1 hour: Riding schooled horses; same work as the 5th with the addition of jumping low bar several times and explanation of the use of the aids for turning to the right or left. Also continuation of the use of the aids for increasing or decreasing the gaits.
Outside 1 hour: On road at walk and trot.
In hall 1 hour: Observing work of regular class on jumpers.

8. In hall ½ hour: Observing regular class on first training colts. In hall 1 hour riding jumpers. Work by threes, by flanks, increasing and decreasing the gait. Jumped low bar several times.
In hall ½ hour riding schooled horses.
Outside 1 hour, over hills at walk, trot and long gallop.

P. M. Lecture on treatment of diseases, wounds, sprains, use of bacteriens, serums, antitoxins, etc., by Veterinarian Plummer.

9. Outside 1 hour on schooled horses at walk and trot over flats climbing and descending small slopes.
In hall ½ hour observing regular class on schooled horses.
In hall 1 hour riding jumpers. Work by threes, flanks, etc. Explanation of why horses should lead with inside legs at the gallop, and the aids to apply to obtain the correct leads. Jumped low bar several times.

P. M. Lecture on shoeing for gaits by the Chief Instructor of horseshoeing.

10. Outside 1½ hours riding schooled horses, over hills at walk, trot and 1½ miles at gallop. Jumped several jumps in Magazine Cañon.

In hall 1 hour riding jumpers: Work at will and by threes in changing gaits and moving by the flanks. Individual practice in taking the correct lead at the gallop. Continuation of talk on taking the lead at the gallop.
In hall ½ hour observing regular class on jumpers.

P. M. Lecture on animal hygiene by Veterianaran Jewell.

11. In hall ½ hour observing regular class on first training colts.
Outside 1½ hours on schooled horses for walk and trot over hills and over pasture jumps and jumps in Magazine Cañon. In hall 1 hour, riding jumpers, work at will, changing gaits by the flanks, and backing. Explanation and demonstration of the aids used in backing.

P. M. Examination of normal shoeing, pathological shoeing, and shoeing for gaits at the School Shoeing Shop.

12. Outside 1½ hours: Riding schooled horses at walk, trot and gallop on the flats and over hills.
In the hall ½ hour observing regular class on schooled horses.
In hall 1 hour, riding jumpers, same as the 11th with the addition of jumping two jumps about eight times each. Also explanation of the indication to the rider as to which lead the horse has at the gallop.

P. M. Lecture on watering, feeding and forage, by Veterinarian Plummer.

13. Outside 2¼ hours riding schooled horses for rides of 14 miles on roads and over hills at walk, trot and good gallop.
In hall ¾ hours observing regular class on jumpers.

15. In hall ½ hour observing regular class on first training colts.
In hall 1 hour riding jumpers, usual work at will and by threes. Special attention to the application of the aids in taking the walk from the gallop.
In hall ½ hour riding schooled horses a will.
Outside 1 hour riding on Island at walk, trot and gallop at will.

P. M. Practical work conformation and defects at school veterinary hospital.

16. In hall ½ hour observing regular class with schooled horses.
In hall 1 hour riding schooled horses. Work at will by threes, by the flanks, halting, backing, taking gallop right or left, taking the extended gallop.
Outside 1½ hours riding jumpers.

On Island, trot for two miles, individual jumping over logs and rail jumps, about 10 jumps taken. Rest of the time at walk.

P. M. Explanation of shoeing at school shoeing shop.

17. Outside 1½ hours: Riding schooled horses about seven and one half miles across country at walk and trot. One and one-half miles at a gallop on flats over three jumps.
In hall ¾ hours on jumpers, same as the 16th.
In hall ½ hour observing regular class on jumpers.

P. M. Practical work on conformation and defects at the school veterinary hospital.

18. In hall ½ hour, observing the regular class on first training colts.
Outside 1½ hours: Riding schooled horses at walk, trot and one and one-half miles at gallop across difficult country.
In hall 1 hour: Riding jumpers, same as the 16th with the addition of practice of rising to the trot with no reins and hands resting on thighs.

P. M. Examination of shoeing at the School Shoeing Shop.

19. Outside 1½ hours on schooled horses. Over hills, two periods of trot twelve minutes each, and one of gallop for six minutes across ditches, etc.
In hall ½ hour: Observing regular class on schooled horses.
In hall 1 hour: Riding jumpers at usual work and jumping two 3 ft. jumps several times.

P. M. Talk on breeding, breeds and blood lines by Lieutenant Danford.

20. Outside 2 hours on schooled horses for walk, trot and gallop across country.
In hall ½ hour: Talk and demonstration on the objects and use of the cavesson and longe.
In hall ½ hour: Observing regular class on jumpers.

22. In hall 1½ hours: Riding jumpers in usual school work.
Outside 2 hours riding schooled horses across country at walk, trot and gallop, and on Island jumping various jumps for ½ hour.

P. M. In hall observing regular class with first day's work with breaking colts.

23. In hall 1½ hours on schooled horses. Usual work by threes, flanks, etc. Special attention paid to invididual work of executing turns on the forehand, backing, taking the trot and gallop at designated points.

In hall ¾ hours observing regular class with breaking colts.

P. M. Outside two hours on jumpers, riding about eight miles for the purpose of observing the ride of the officers of of the Sixth Field Artillery, headed by the colonel, going over a four mile course with six jumps in 11 minutes 24 seconds

24. In hall 1 hour, observing regular class on second training colts.
Outside 2 hours riding schooled horses. Long walk, two and one-half miles at trot, Individual galloping one-quarter mile each, first quarter at will, second quarter at rate of twenty miles per hour, third quarter at rate of twelve miles per hour. Also two officers setting gait for class at eight mile trot for one-half mile each.

P. M. In hall 1 hour riding jumpers. Usual work by threes, flanks, halting, backing and taking gallop, both in units and individually at designated points. Jumping 3 ft. jumps at gallop, six jumps each.

25. In hall 1 hour: Talk on the bit and bridoon bridle, adjustment of the bits, action of same, also various methods of holding the reins with the advantage and disadvantages of each. Also talk on different seats in jumping, with advantages and disadvantages of each.
Outside 1 hour for riding jumpers: One mile at trot, one mile at gallop, then jumping individually ten jumps, three of which were post and rail 4 ft. high.
In hall 1 hour: Observing regular class with breaking colts.

P. M. In hall 1 hour riding schooled horses, usual work in column and a good deal of work at will practicing everything gone over to date. Explanation of the two methods of teaching a young horse to take the gallop, giving the advantages and disadvantages of each. Also a talk on the necessity of keeping a walk when leaving the stable, this due to the lack of circulation in the horse's foot when standing still.

26. In hall 1 hour riding schooled horses. Usual work to date. A little work at haunches right (left.)
Outside 2½ hours on jumpers, about nine miles at walk and trot and one mile at gallop, individually jumping six obstacles.

P. M. In hall 1 hour for observing regular class with breaking colts and schooled horses.

27. Outside 2¼ hours on schooled horses: Thirteen miles across country and practice at gaiting. Class led by four different members.
In hall ¾ hours: Observing regular class on jumpers.

29. In hall 1 hour riding jumpers. Usual work to date, also jumping individually post and rail several times, first at 3 ft. 6 in., then at 3 ft. 10 in.
Outside 2 hours: Riding schooled horses at walk, trot, and galloped across hills.

P. M. Lecture at Bakery: General plan of bakers' course; wheat, flour and fermentation.

30. Outside 3 hours riding schooled horses. Attended muster and review of the garrison. This was held on Ogden Flats about four miles from the post. All members of the school class were required to attend as part of the garrison.

P. M. Lecture in the Bakery: Field bread, bakery and expedients.

May.

1. A. M Lecture at Bakery.

P. M. In hall 1 hour: Riding schooled horses. Work at will and in column changing gaits, movement by the flanks, etc. Individual practice at haunches right (left).
Outside 1 hour: At walk and jumping eight obstacles, also observed two periods of polo game.

2. Outside 1½ hours: Riding jumpers. Walk and trot for three miles. Class was then divided into pairs with several hundred yards distance and sent two miles at trot and gallop over Magazine Cañon course of jumps.
In hall 1 hour: Riding schooled horses. All work to date, and work by threes at the gallop with movements by the flank and abouts. Work at will with everything to date. Explanation and demonstration of the mechanism of the gallop. Also talk on the two methods of teaching a horse to take the gallop, and the advantages and disadvantages of each.

P. M. Lecture at bakers and cooks barracks on general plan of instruction in cooking.

3. Outside 1 hour: Riding schooled horses. About ten miles on road and across country. Class led one and one-half miles at gallop by a member through woods and over ravines. Class led by instructor about three-quarters miles over hills at very fast gallop. Also jumped several ditches at ordinary gallop.

In hall 1 hour riding jumpers. Work at will and in column and by threes. Jumped several times 3 ft. in and out, and over 3 ft. jumps without wings, this at a gallop.

P. M. Lecture on meat cutting and meat inspection. Preparation of meats and stews.

4. Outside 2 hours: Riding schooled horses. Line of jumps on Republican Flats taken at the gallop. About six miles at walk and trot on road and across hills. Class led by a member for one and one-half miles at gallop over hills, rate about twenty miles per hour.
In hall 1 hour: Observing regular class on jumpers.

6. In hall 1½ hours: Riding jumpers. Usual work in column and by threes with special practice at holding the reins in one hand, either right or left. Continuation of talk on the mechanism and how to obtain the lead at the gallop.
Outside 1½ hours: Riding schooled horses, rode in pairs at will.

P. M. Lecture on soups, vegetables and left-overs.

7. Outside 1¾ hours: Riding jumpers. Over hills principally at walk and trot. Jumped several ditches and followed hounds for a short time.
In hall 1 hour: Riding schooled horses. Usual work in column and by threes. Practice change of lead at the gallop. Jumped several 3 ft. jumps.

P. M. Lecture on beverages, pastries, desserts and dressings.

8. In hall ½ hour: Observing regular class riding schooled horses.
Outside 1¾ hours: Riding schooled horses at walk and trot across hills, and one mile gallop over Republican Flat jumps.
Outside 1 hour: Riding jumpers on the Island, jumping about nine jumps from 3 ft. 6 in. to 4 ft. in height.

P. M. Talk on and practical demonstration of grooming.

9. In hall 2 hours: Riding jumpers. Usual work by threes, etc., and jumping individually and in pairs.

P. M. Practical illustration and exhibition of bandages, exercise, stable, cotton pads, felt pads and compresses.

10. Outside 2 hours: Riding schooled horses over hills at walk, trot and gallop, one of the latter being one mile in two minutes and fifteen seconds. Class led by a member endeavoring to set a pace of one mile in three minutes.
In hall ¾ hours: Riding jumpers. Work at will riding in column and by threes at walk, trot and gallop.

Jumped individually several times at the gallop 3 ft. 9 in. white fence and 3 ft. 6 in. in and out.

P. M. Care of feed in garrison and field, under various conditions of climate and soil.

11. In hall 2 hours: Riding jumpers. Work with the regular class riding schooled horses. Usual work by threes, in column, by the flanks, changing the gaits. Jumped in pairs composed of one regular student officer and one field officer.

13. In hall 1½ hours: Riding jumpers. Usual work by threes and at will. Special attention was given to the individual riders making figures of eight at a trot around stake which marked the center of the curve. Also riding on circles at a gallop around stakes. Jumped four times around course of 3 ft. 9 in. fence, and 3 ft. in and out.

Outside ¾ hours: Riding schooled horses. Twelve miles across country at walk, trot and gallop, coming home over Republican Flat jumps in pairs at a gallop. Doing two stretches of gallop of one-half mile each, a member of the class set the gait for a rate of twenty miles per hour.

P. M. Stable constructions and fittings, soil, foundation, arrangement of stalls, roof material for roof, floors and paving, stalls (box and open.)

14. Outside 2 hours riding jumpers over hills at walk, trot and one mile in two minutes and forty seconds at the gallop. Returned over pasture fence jump, jumpsbeing from 4 ft. to 4 ft. 3 in. in height.

In hall 1 hour: Riding schooled horses. Usual work, with special attention given to individual of horse on circle at a gallop. Short explanation of and practice at "on two tracks right" (left) "oblique."

P. M. Stables, construction of; ventilation, benefits of good air, drafts and chills, proper temperature, means of ventilation, drainage, stable fittings, doors, latches, windows, partitions and bales, kicking boards, mangers, hay racks.

15. In hall ½ hour: Observing regular class riding schooled horses.

Outside 1½ hours: Riding schooled horses over hills at walk, trot and gallop. Leading by members of class. Jumped Magazine Cañon jumps.

In hall 1 hour: Work out then practice on individual troopers taking the gallop and changing lead. Jumped twice 3 ft. jumps about 20 ft. long and placed 40 ft. apart. This for the practice in applying the aids to keep the horses from running around the end of jumps or refusing. Jumps were without wings.

P. M. Grooming, theory of grooming, tools and care of same, washing horses, clipping, how same should be done, with advantages and disadvantages.

16. Outside 2¾ hours: Riding jumpers. Most of the time was on Republican Flats at walk, trot and short gallop. Returning, jumped brush jump and two ditches.

In hall 1 hour: Riding schooled horses. Work out, usual work threes, etc. Work at will. Individually on right hand, haunches right (left) "On two tracks right (left) oblique," change of lead on diagonal at the gallop.

In hall ½ hour: Observing regular class riding first training colts.

P. M. Clothing, use and abuse of same, arguments for and against use on field service, patterns and fits, cleaning, roll a girth, bandages, materials of which made and care. Securing a horse in stable and various methods.

17. Outside ¾ hours: Riding schooled horses. Walk, trot and gallop over hills with one short and one rather long run across country after jack rabbit.

In hall 1 hour: Riding jumpers. Work out, work at will and usual work by threes and in column. Practice at changing the lead on the diagonal at the gallop. Jumped twice around at the gallop, one 3 ft. in and out, and one 3 ft. fence, all without wings.

P. M. Bedding, various kinds and care of. Stable tricks and vices, causes and methods to cure or prevent.

18. Outside 2 hours: Riding schooled horses over hills for fifteen miles, thirteen of which was in one hour and forty-five minutes.

In hall ½ hour: Observing regular class riding jumpers.

20. In hall ½ hour: Riding jumpers. Work at will and by threes.

Outside on Island 1 hour: One mile at gallop and then individually jumping about twelve jumps from 3 ft. 6 in. to 4 ft. in height.

Outside 2 hours: Riding schooled horses at walk and trot across country. Class also led for cross country gallop by a member, jumping several ditches during ride.

In hall ¾ hours: Observing regular class on jumpers and breaking colts.

P. M. Routine of stables. Condition and exercise, racing conditiion methods to secure condition, exercise, racing condition, hunters condition, value of condition in war *dealers* condition, method to secure condition, exercise and feeding. Practical illustration of mane and tail dressing for thoroughbreds, hunters and hacks. Doing up tails for muddy weather.

21. Outside 2 hours: Riding jumpers at walk and trot, with gaiting at trot by members of the class. Jumped in pairs the Magazine Cañon course.
In hall 1 hour: Riding schooled horses. Work at will and by threes. Special attention to changing of lead at the gallop, on tracks right (left) oblique, taking the canter from the back, halting and turning on the forehand at designated points.

P. M. Management of horses on the march and in field service. Practical illustration of braiding the mane in the ordinary manner, and the running braid with rosettes.

22. Outside 1¾ hours: Riding schooled horses across hills at walk, trot and gallop. Returned at gallop over Republican Flat jumps.
In hall ½ hour: Observing regular class riding schooled horses.
In hall 1 hour: Riding jumpers. Long work by threes at all gaits, especially the gallop. Jumped five times, three 3 ft. jumps placed twenty-eight feet apart. This at the gallop with reins hanging very loose and finally without stirrups, and a portion of the class with neither stirrups nor reins.

P. M. Exhibition of various means of protecting a horse while jumping and traveling. Using such as cannon boots, shin boots, knee boots, quarter boots, hock boots, and tail guards. Exhibition of pulling manes and tails.

23. Outside 1½ hours: Riding jumpers at walk and trot. Jumped several ditches, one rail fence and river pool.
In hall 1 hour: Riding schooled horses. Short work out and work by threes. Explanation of proper manner of carrying and using the riding whip.

24. Outside 1 ¾ hours: Riding schooled horses at the walk and trot over hills, returning via Republican Flats over jumps at a gallop for one mile.
In hall 1 hour: Riding jumpers. Usual work out and work by threes. Also jumped various jumps including 4 ft. stone wall.
In hall ¾ hours: Observing regular class with breaking colts.

25. Outside 2½ hours: Riding schooled horses. Walk, trot and gallop across hills and up and down steep banks. Leading at eight miles an hour trot by members of the class.
In hall 1 hour: Observing work of regular class riding jumpers.

27. In hall 1½ hours: Riding jumpers. Long and hard schooling of work of the complete course riding with reins in one hand. This including changing of gaits, halting, backing, turning on the forehand, changing lead at the gallop, and riding around stakes on circles and figures of eight at the trot and gallop. Also jumping various jumps without wings, the jumps being scattered around the hall.
Outside 1 hour: Riding schooled horses. Jumping of various obstacles on the Island. About fourteen jumps in all taken, averaging 3 ft. 6 in. in height.
Inside 2 hours: Talk by senior instructor regarding the work of the school in general, what should be expected of its graduates, and the application of the principles taught at the school to the service at large.

28. Outside 2½ hours: Riding jumpers for about six miles, and taking school photographs of the class jumping the Magazine Cañon course of obstacles.
In hall ½ hour: Riding schooled horses, usual schooling work with most of the class riding the McClellan saddle.

29. Outside 2½ hours: Observing work of the Olympic Game, Stockholm, Sweden team in a tryout over the regular jumping course of principal obstacles, and also in a half mile gallop over the steeple-chase course of four jumps, the half mile being made by most horses in one minute ten seconds.

31. Outside 2 hours: Riding schooled horses. A short drag hunt woth fox hounds of about two miles ofer the hills. Following this, the taking of a photograph of members of the class over the regular jumps of the Magazine Cañon course. This day's work completed the cohrse of the Field Officers' Class.

OBSERVATIONS OF AN OFFICER ABROAD.

By Captain GEORGE T. LANGHORNE, Eleventh Cavalry.

(*Extract from report to the Adjutant General U. S. Army.*)

An International Horse Show was concluded in Vienna the the day after my arrival, and there was no opportunity for me to see but a small part of it. The interesting feature was the open air obstacle jumping by the officers of the various armies. The course was by no means so difficult as the one witnessed by me in Rome in 1908, nor as the one in Rome of this year. The obstacles were placed in the infield of a racing park, and the meet was a social, as well as a sporting event. The horses entered were as a rule beautiful animals and well schooled. The gait generally taken was a well collected gallop. The winner in officers' obstacle jumping was a Frenchman.

Enclosed photographs show some of the obstacles, also how the Austrian officers try to keep to the school seat in jumping. As touching with either hind or fore feet is counted a fault, there were many points scored against the horses, especially for touching behind. The course was about one and one-fourth miles with about eighteen obstacles.

The Austrian Derby is an event of great local importance. Unlike the English Derby it is a very fashionable affair, the last function of the season, in fact, at which high hats are worn. There were thirty entries for the race, distance 2,400 meters. The prizes were 100,000 Krone, ($20,000), to the winner, 10,000 Krone to the second and 4,000 Krone to the third. The race was won by Dealer, owned by Barm Springer, with his stable mate a close second.

Royality was present. A remarkable thing about an Austrian gathering is the quiet manner of the people.

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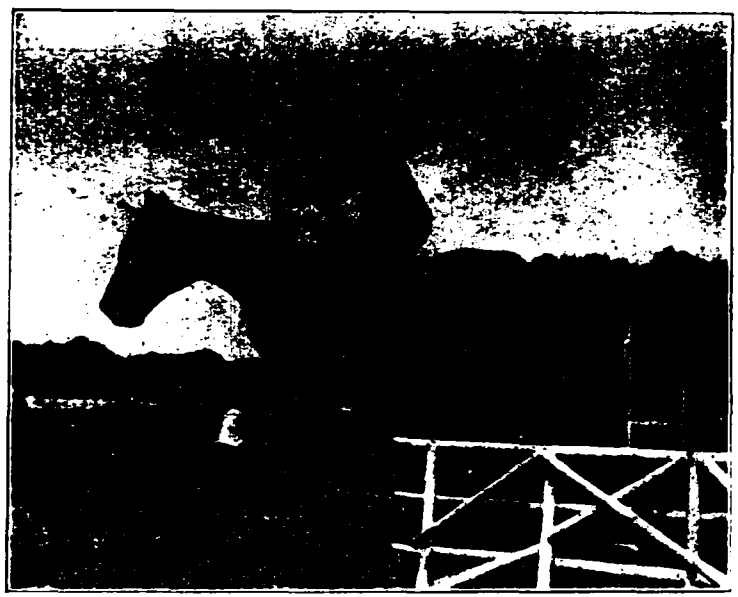
The coronation processions, on the day of the coronation of King George V, and on the following day when he made his entrance into the City of London, were spectacles of peculiar interest. The streets throughout the route of march were lined with two ranks of troops on either side, behind which was a line of policemen. In order to handle the expected crowds barriers with gates were placed about twenty yards back on each of the cross streets. These gates were to be closed in case the crowd became to large to handle. As one of the policemen ex-

pressed it to me, "There was nobody there," hence the barriers were not closed, as at no time was the crowd large or difficult to handle.

There were 70,000 troops brought into the city to take part in the coronation. Many of these troops were the Territorial Militia and of course did not have the training nor show the precision of the regular troops. However, the spectacle was none the less interesting, as there was a great variety of uniforms among the Territorial troops as well as among the

Regulars, uniforms of the latter dating back in some cases hundreds of years. In fact an officer was pointed out in one of the Guard regiments whose cuirass and helmet had been worn by his father and grand father. The Foot Guards had uniforms the same as worn at Waterloo. As every detail of the dress of the regular regiments carries with it some tradition, uniformity is thus retained throughout such regiments or brigades, and the effect is very striking and inspiring.



In all cases the horses showed the result of exquisite care, as did their trappings and equipments. The saber knot used by the British trooper is of rough porous leather looking like thick buck-skin, a simple strap with a sliding keep. The strap is blancoed, pipe clayed white, for all dress occasions and then is ornamental. In service the blanco wears off. The knot is useful when kept well soaped. It is cheaper than ours.

The detachment of the Colonial troops taking part in the procession of the second day were interesting, as representing the military force of the British Empire in so many of its varied

aspects. The Indian representatives were particularly remarkable for the richness of their dress and their perfect ease on horseback. Some of the richest Indian Princes wore not only the handsomest dresses, but jewels of great value.

The entire arrangement of the procession and of the troops was in charge of Field Marshal Lord Kitchener who is said to have worked out all the details. Each day he inspected the route in a service automobile before the procession and then rode at the right hand of the King.

In conversation with one of the most advanced cavalry leaders of the British forces, especially with regard to the gaits best to work with in cavalry training and in war, he said that he had used with the greatest success the slowest trot to which it was possible for men to post, or rise; that although this was trying on the men, especially at first, it developed strong muscles in their loins and was the one gait that tended more than anything else to save horse flesh and keep animals in condition even with the hardest demands made upon their endur-

ance. He laid stress upon another feature; that the leader should keep his subordinate (regimental) commanders with him until the last moment, especially when going into action. Then getting his final orders they rejoin their regiments and lead them into the engagement. This is carrying out the general rule followed in the artillery.

The London Horse Show has been so well reported upon that any remarks here seem superfluous. It is difficult to convey

any correct impression of the beauty of the large hall and the perfection of the arrangements.

The portable objects used for jumping were placed upon handsomely painted and varnished, flat bedded spring wagons drawn by four horses in patent leather silver mounted harness, with postillions in white leather breeches, top boots and jackets with the show colors, and an outrider to each wagon. The ring was embellished with flowers and green turf.

Our officers won praises from everyone for their good riding, pleasing personalitites, and sportsmanlike conduct.

Their horses were not trained to be winners against their veteran opponents. Only calm, perfect mannered, well schooled animals, educated after long hard work, to clear flimsy obstacles without touching, could by constant ecxellent performance, carry off the prizes.

The Russian, French, and other foreign officers knew the conditions. They had a large number of officers and men from which to choose and had had time for training. In the totaling the scores our officers made were well up behind the winners.

A great deal was learned even if no prizes were won. For other attempts training must begin at longer times before the competitions. Much would be gained by sending the same riders next year.

It seems that in England and Scotland the tendency of rifle makers in the near future will be to reduce the diameter of the chamber of the rifle to nearly that of the gore. The explosive in the cartridge thus reduced in diameter will be moulded in the form of a hollow cylinder hardly larger than the lead in an Eagle drafting pencil. Such a cartridge would of course have its many advantages, especially in the reduction of bulk and weight. It might prove advisable to arm some cavalry with this rifle when the chamber and magazine are so reduced in size to take this small cartridge. Such a weapon could be used by the soldier when mounted as a lance; when dismounted he has his firearm and bayonet. At need the bayonet becomes a short sword. It would seem well worth while to experiment with such a weapon.

In Vienna it was my good fortune to be invited to visit two regiments. The first was the Twenty-fourth regiment of infantry. Upon arrival at their barracks at 9 o'clock on the day appointed there were found present a number of other foreign officers, principally a Roumanian Commission. There was also an officers from Saxony. We were first shown into the small office of the colonel commanding, who gave quite a talk on the training of the regiment and the program followed during the year. In brief the time was divided as follows:

From the 2d of October to the 1st of December, about eight weeks, drilling; from the 1st of December to the 2d of June, exercises of the comapny; from the 2d of June to the 2d

of August, exercises of the battalion; from the 2d of August to the 22d of August, exercises of the regiment; then three days for the brigade, four or five days for the division, and five or six days with the corps. These last three in conjunction with cavalry and artillery.

After a talk by the colonel commanding we were shown through the barracks. The platoon rooms were clean, the walls white washed and the floors scoured with sand. The bedsteads were of iron with plank bottoms, burlap bed sacks filled with straw, thick blanketed, overcoats folded at the head of the bed, and clothes folded and placed on a shelf. At one end of the room a large box contained the promenade and dress clothing of the members of the platoon. At the other end were miniature targets for gallery practice. These were of the bobbing, moving and disappearing varieties, being figures or silhouettes of soldiers. The wash room was simplicity itself, cement floors, faucets over troughs, and a few showers, all in the open room. The kitchens also were simple, most of the food being boiled or stewed. The cost of the ration was about nine cents per day. The soldiers look well nourished.

In each barrack there were one or two rooms in which the "volunteers" studied and attended lectures. The walls of these rooms and of the barrack halls were hung with pictures showing the manner of conducting patrols, etc., duties soldiers might, expect to be called upon to do in the field or in time of war. The pictures were real, some were ludicrous to show the mistakes apt to be made and the direful consequences.

The volunteer, like every other able bodied male citizen is required to do his military service. He, however, by his superior intelligence takes in addition a special course of study, and if successful in passing his examinations is, after one year's service, appointed and officer in the reserve army.

In the barrack yard on the walls of all the barracks were silhouettes of soldiers, infantry, cavalry and artillery, as aiming targets. In one corner a miniature target range had been devised. To prevent bullets from straying two large wooden shields were placed between the firing point and the targets. There were miniature houses, roads, fortifications, gunpits, etc., and the targets, iron soldiers of various arms, were made to

move, appear, disappear, approach and retreat, by means of wires worked from one end of the firing line.

The gallery ammunition was simple and enabled each man to use his own rifle. It was reloaded by the platoons, each leader having the necessary tools, bullets and caps. The cartridge cases were recapped and bullets inserted in the mouths of the cases. The advantages of such a simple system are apparent especially when each soldier can use his own rifle in all practice, becomes familiar with and gets confidence in it.

Another simple arrangement was a cover for the muzzle of each rifle consisting of a small disc in a steel frame hinged to a small band. Throw the disc back over the hinge and the rifle was ready for action. Should the soldier forget and fire his piece without turning back the muzzle cover, the bullet would pierce the disc and no harmful effects could result. Thus the muzzle is protected against injury and the rifle bore kept clean and free from dust and rain.

The soldiers wore simple and generally soiled clothing in all of their work except for reviews, etc. For promenade and dress formations, of which there are very few, the clean clothes kept in the platoon room lockers were always in readiness.

The store rooms were very small and contained, neatly and compactly arranged, all the clothing and equipment necessary at all seasons to outfit the command at full strength.

As a comparison a company of 104 men was stationed a few years ago at a sub-post on the river a few miles below Washington. There were forty-four buildings for their use including two store rooms each with a sergeant of the post N. C. S. Each store room had more space than the one above described for that regiment.

The stables were very neat and the horses beautifully kept, as are the equipments. The grooms for the infantry are trained in the cavalry. We may learn this in time, but what a difference between the stiff and usually dirty equipments and horses brought out with our fine regiments of superior intelligence.

This Twenty-fourth Regiment is recruited in Gallicia. Its officers have to learn Polish and Russian in order to speak to the soldiers. It was on its six year tour of service in Vienna.

One of its captains spoke English. Upon being asked where he learned it, he said that he had been three years in service in Gallicia, that during that time he had studied and learned French and English, but that he had very little practice in talking either. Yet he spoke both quite well.

A newspaper announced, during my stay, that the officers of one of the regiments had been ordered to learn English so that they could talk to their men, as so many from the district from which it had been recruited go to America, the young men returning to do their military service. English was the only language in which they were proficient.

The above mentioned captain told me that it was their policy to bring the recruits for the Twenty-fourth Infantry into Vienna at night, as they were dressed in their one garment which they had always worn, a long shirt. They were then bathed, trimmed up, and for the first time in their lives, clothed in trousers, coats, shoes, etc., and then had their first opportunity to eat meat.

Yet the Infantry in Austria-Hungary strikes one very favorably. Out of ignorant material they make good soldiers who march long distances at a steady gait which delights the observer. The rifle is generally carried vertical, muzzle up hanging from the strap over the right shoulder, barrel in rear of it. A small pad is placed under the shoulder to prevent the sling from falling off.

The army is thus a school of high order, a valuable education for the citizen. The captain told me that the companies average about four men who had been to the United States, and that being the natural leaders they were quickly made non-commissioned officers.

After the inspection we repaired to the club rooms. These were on the lower floor of the officers building, a sort of flat or apartment house, where several officers, even married ones lived. The club had the usual rooms, very neat, and a large dining room where all the officer took breakfast and luncheon, and some all meals. As the troops were away one excellent meal had been perpared by the officers, a major preparing the "*plat de resistance,*" the gulash, a Hungarian dish which was excellent.

The day before the regiment had celebrated its feast day in honor of the anniversary of its victory in the war of 1866. A handsome painting commemorates the event.

Two days later, authority having been granted, a visit was made to a regiment of Hungarian Hussars. The same organization was visited by our Ex-President, whose comments were impressed upon us as he has said that the Hungarians have the finest cavalry in the world; that they never dismount, and that their horses never have a sore back.

This regiment is recruited in Budapest and is one of the crack organizations. The barracks and the stables are compact like most European establishments of the kind. There were the same simple, clean squad rooms, white washed walls, scoured floors, neat beds with burlap straw matresses, the shilouettes of all sorts for aiming drills, and the simple baths and kitchens. Interest centers, however, in their small, well arranged store rooms with every article of clothing and equipment ready for war, and in their stables and riding halls. Each squadron had an indoor hall as well as an out of door track.

The stables were divided into compartments for the horses of each squad. They were cement floored including the stalls. The saddle rooms were well lighted and large. Each horse in the stable wore its web halter. The swinging bars and heel posts were well wrapped with straw. The stalls had plenty of straw and on the edge back of the horses it was matted or braided like those in the stables of our men of means.

The equipments were in the usual perfect condition of the best European cavalry. The old captain said that the equipments were many years in service, that in his time the squadron had never had new equipments. His own soft, small, strong bag for extra horse shoes, he said was over twenty years old. The horses were as well cared for as were the equipments. They almost all showed marks of saddle sores and those backs that I felt had the scars under the hair. There were, however, no open sores in evidence and no sores on the fetlocks from interference.

The riding instructors are generally on foot, the troopers riding around them on the track. The horses are carefully put through a progressive course, being advanced from one

class to another as they learn. The mornings are devoted to the work of training, but after a short term the training changes from drill to outside work of patrolling, scouting, etc.

Understanding that our cavalry equipment board has adapted for our use the Austrian saddle, it was interesting to investigate the details.

The Austria-Hungary cavalry is always at war strength, save one man or one horse. The saddles are so carefully adjusted that the buckles of the girth on the near side are fastened in the third hole from the top. The two holes above are for the purpose of taking up the slack in the girth due to the loss of flesh of the horse during campaign. An officer oversees the readjustments.

The saddle bars are placed well back on the horses shoulders in all cases. (See how they are placed, as a fact, on our horses in spite of regulations or instructions.) The rider is thus brought over the center of motion of the horse, but the girth is back of it, not on, the sternum; *i. e.*, it is over the pit of the stomach. Thus the girth can not be tight for if it is the horse can not do hard work at fast gaits. Nor will the girth remain in that place, hence a crupper in some cases, and in all cases a breast strap about the neck, fastened above to the saddle by two straps, and below to the girth by a strap between the forelegs, is used.

This strap does not show in the photographs I have seen of our proposed new cavalry equipments. Rightly so, because of the necessary delay in putting it on. The girth, however, is shown back of the sternum. If it is placed in its proper place on the brisket the saddle must go forward, the bars pressing the shoulder blades, the rear end digging sores in the horse's back.

Our military attaché at Vienna said that at the grand maneuvers last fall the cavalry of one side had been ruled out as being out of condition at the critical moment. Any man can prove this by tying a band over the pit of his stomach and attempting violent exercise for any length of time.

The blacksmith shop showed the greatest intelligent supervision. The horses feet were in almost perfect condition. The shoes while heavy were well fifted, the inner heels thickened

and bevelled to prevent interfering. The hoofs were elastic and firm. Some eight men per squadron were at work in the shops. A captain superintended their work.

Manure is carried away in baskets as it drops and is put under cover and is daily hauled away by farmers who pay for it.

In Budapest, in Vienna, in fact all over the country military bands play in public places, in parks, and at cafés and restaurants. They receive pay for the latter from the proprietors. . It helps to popularize the military establishment.

The government studs of course help the farmers and the government control prevents poor stallions from being served Hence there are distinctive types of excellent cavalry mounts. The country of course benefits in other ways. All the horses one sees are well cared for and of good types. Every horses is taught to stand without hitching and is driven with a snaffle bit.

Austria-Hungary is an empire in fact as well as in name. It is made up of many tribes clinging tenaciously to their several languages and customs. For common defence they are banded together but the boundaries of the various countries now united have undergone many, many changes during the past few hunderd years.

The army and navy are popular and help the country in educating its people. Many youug men told me of their great regret at not having been able, generally because of some physical defect, to do their military service.

The officers are well dressed though their uniforms are not as easy and suitable for hard exercises as those of the Italians. They are, however, very aristic, and attractive to the eye.

Promotion is too slow even though regiments have many colonels and lieutenant colonels and majors advanced at a time to give promotion to those below. One of the regiments above mentioned has now four colonels.

PROPOSED CAVALRY DEMOLITION PACK.

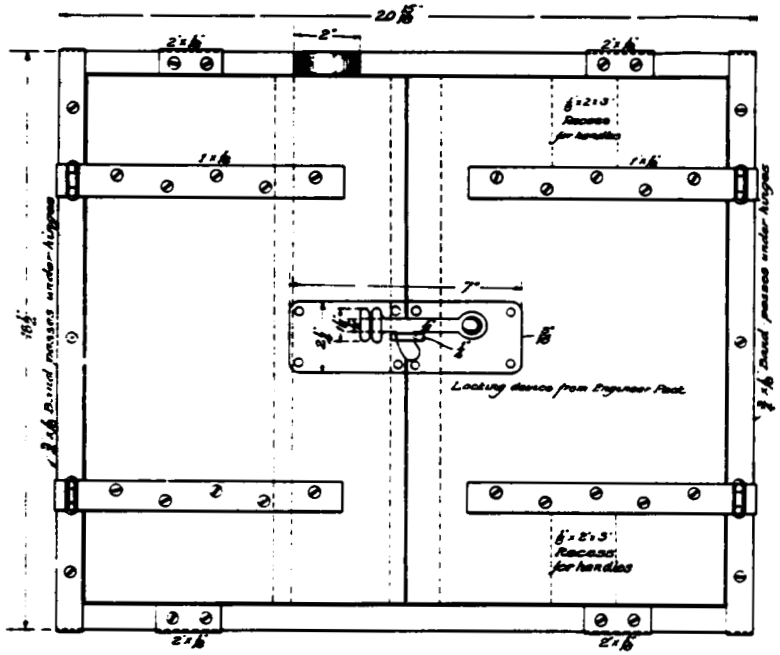
By First Lieutenant G. V. STRONG, Sixth Cavalry.

THE drawings herewith are of a unit demolition pack for service with cavalry in the field. The pack consists of two boxes containign everything necessary for the hasty demolition of iron or steel bridges, wooden, stone or concrete structures or railroads.

NEAR SIDE PACK.

The off side pack is the same but reversed.

TOP PLAN



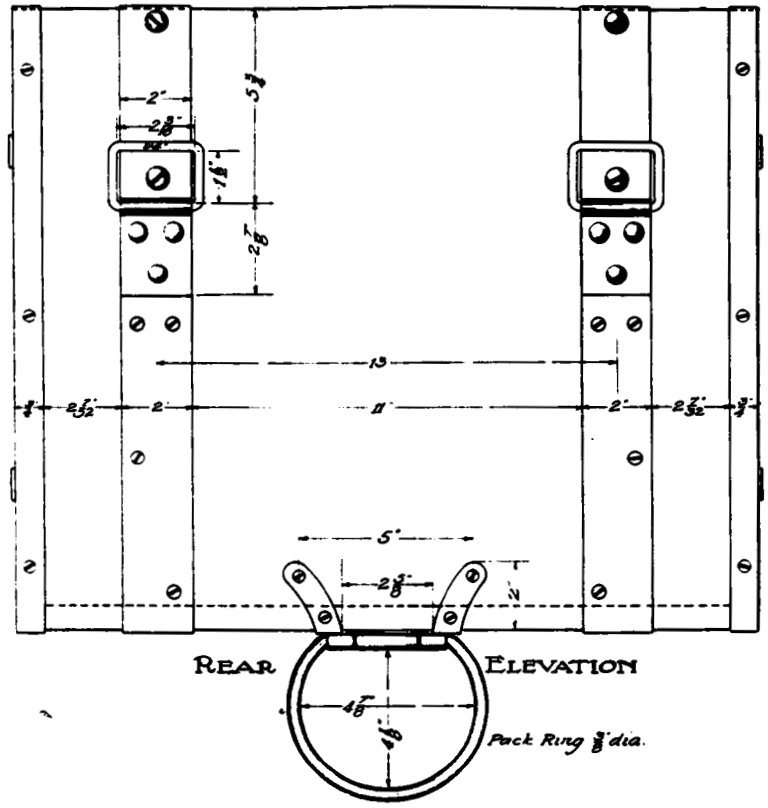
FRONT ELEVATION

The pack consists of two boxes, about 20x18x10 inches, slung as side packs and so constructed that they can readily be packed on an ordinary aparejo or on the aparejo used in the Machine Gun Platoons or on the English pack saddle. These side packs hang low, and there is no top pack to raise the center of weight.

The explosive contemplated is dynamite, carried in a felt lined box so constructed as to guard against jolting and changes of temperature, each stick of dynamite resting in a G. I. cylinder lined with three-sixteenths inch felt; the top and bottom of box are close fitting and lined with felt. The object of the felt is to have each stick of dynamite closely surrounded by a

NEAR SIDE PACK.

The off side is the same but reversed.

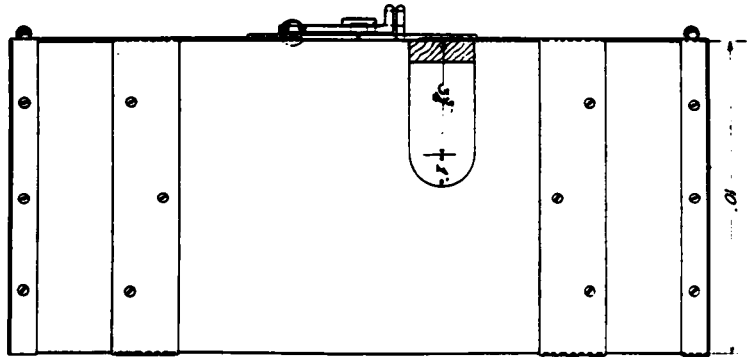


REAR ELEVATION

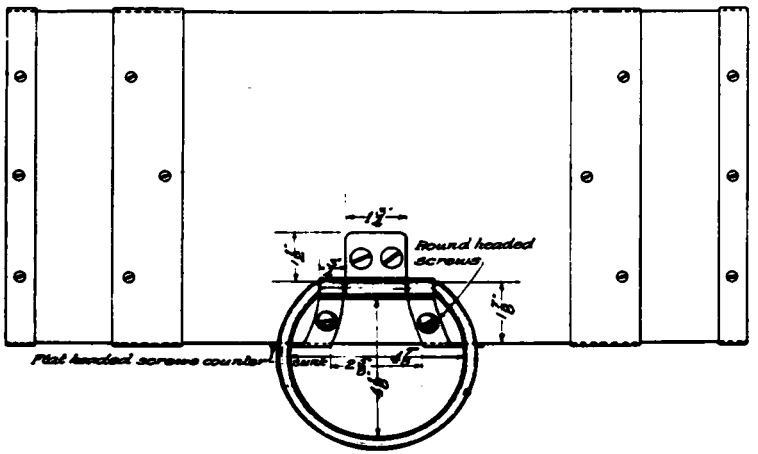
non-conductor, thereby doing away with loss from jolting and preventing the dynamite from freezing or sweating. Dynamite is used (preferably forty per cent.) because it can be easily replaced, particularly in the west, and because numbers of men in every command are familiar with its use. Any other less well known explosive would be unsatisfactory on account of difficulty of supply in time of war and the improbability of getting uniformily good results by its being handled by men not thoroughly familiar with it.

NEAR SIDE PACK.

The off side pack is the same but reversed.



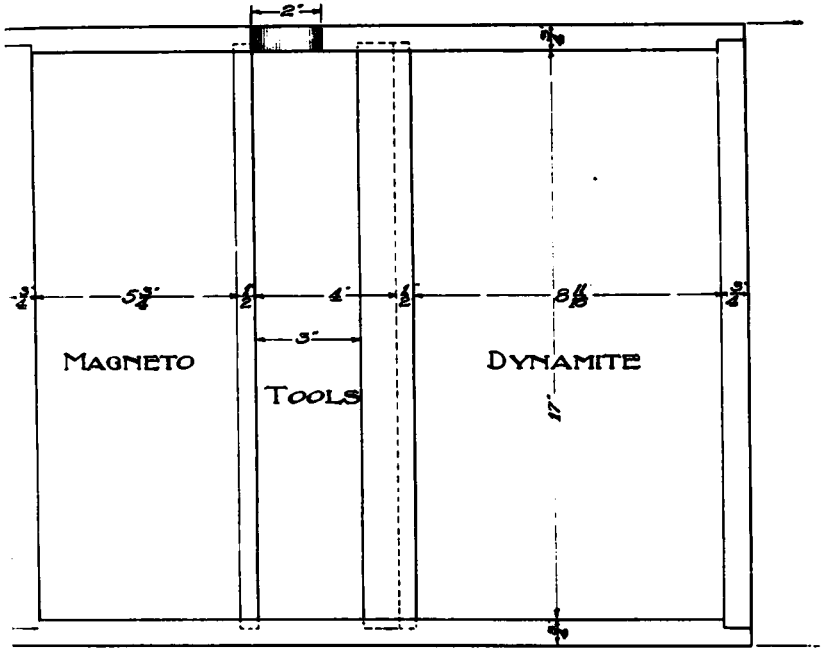
TOP PLAN.



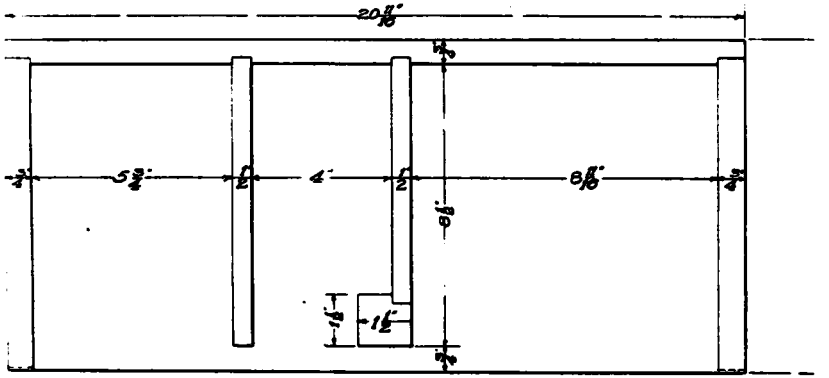
BOTTOM PLAN

FRAMING SHEET.

NEAR SIDE PACK

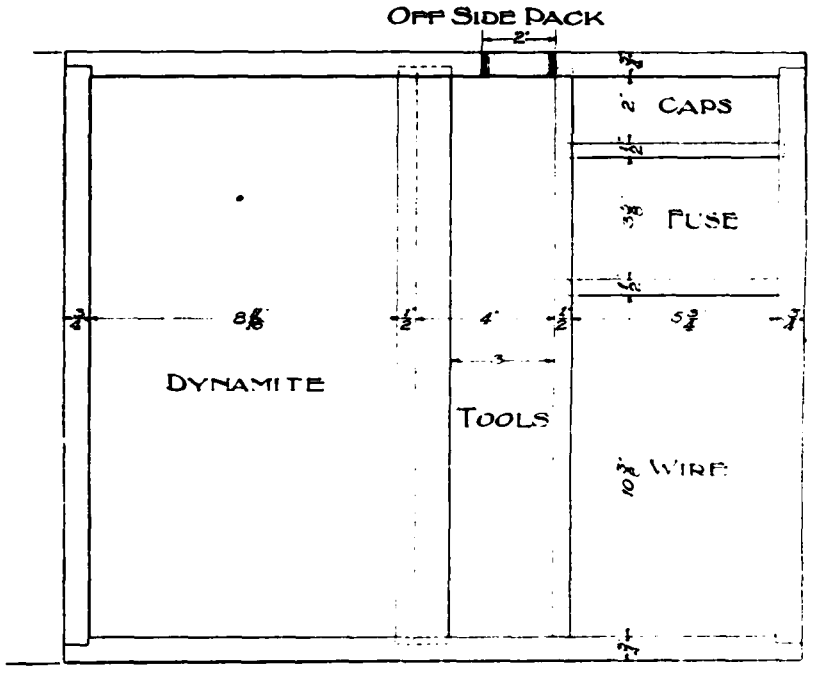


ELEVATION

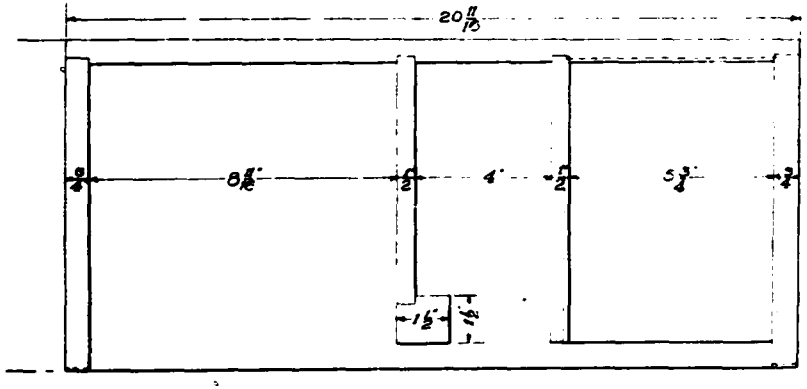


PLAN

FRAMING SHEET.



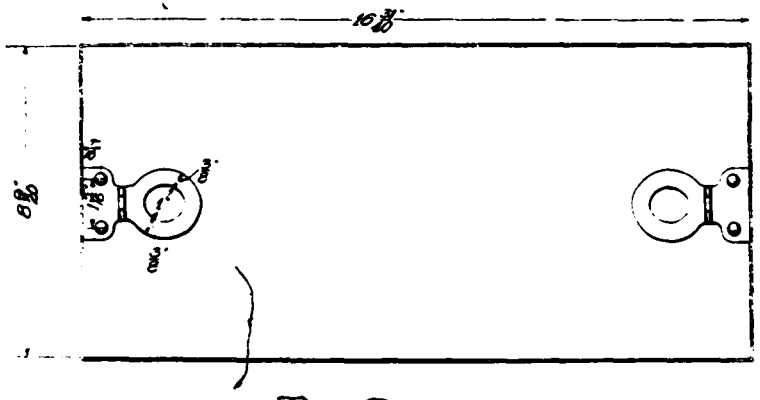
ELEVATION



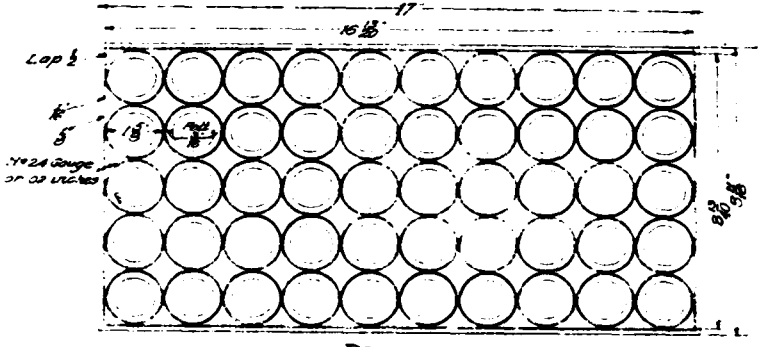
PLAN

METAL DYNAMITE CASE.

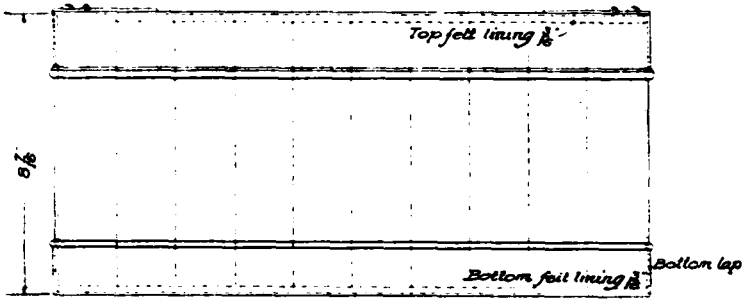
For holding 50 lbs. of dynamite. Case to be of $\frac{1}{16}$ inch sheet steel.



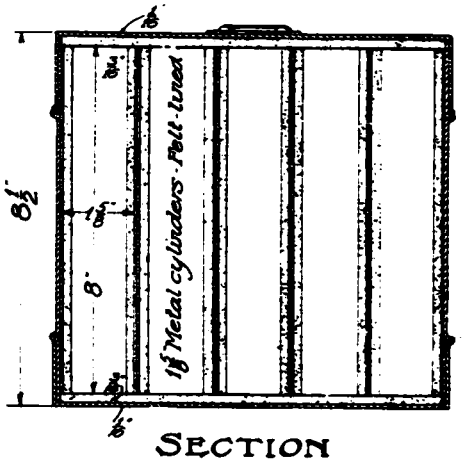
TOP PLAN



PLAN



SIDE ELEVATION



SECTION

The pack provides for two systems of firing, usually it shall be by electric exploder and double lead wire; as a reserve in case the magneto is out of order, fuse and caps can be used, the former being carried in the pack and the latter in the near saddle pocket of the man who leads the mule.

The tools deserve no special mention except that the crow-bar, which has a length of thirty-two inches has one end provided with a claw for drawing spikes; the other end being a straight bevel for prying.

The packs and contents are as follows:

Near Side.	*Lbs.*	*Oz.*	*Near Side.*	*Lbs.*	*Oz.*
Pack box	14		Pick (Engineer)	4	8
Dynamite	30		Augur (ship) 1-$\frac{1}{8}$"x24"	4	6
Exploder	16		Wire Cutter	1	
Crow bar 32"	5	8	Hammer, drilling	4	6
Sledge 34"	6	6	Total weight	86	2
Off side.	*Lbs.*	*Oz.*	*Off side.*	*Lbs.*	*Oz.*
Pack box	14		Shovel (Engineer) 32"	3	4
Dynamite	30		Drill 15"	2	8
Fuse (4 coils)	4		Drill 27"	5	
Fuses, electric (100)	3	6	Cold chisel	1	4
Lead wire (Double) 340'	17		Insulating tape		8
Ax 34"	5	4	Total weight	86	2

In the opinion of several officers at the Service Schools the pack is better fitted for cavalry use than the engineer pack, as it is a unit in itself and capable of making any demolitions necessary for cavalry in the field.

SKETCHING FOR NON-COMMISSIONED OFFICERS.

By First Lieutenant WILLIAM W. EDWARDS, Tenth Cavalry.

THERE should be no mistake in the mind of the non-commissioned officer who becomes a recruit in military sketching, concerning the definition of the term.

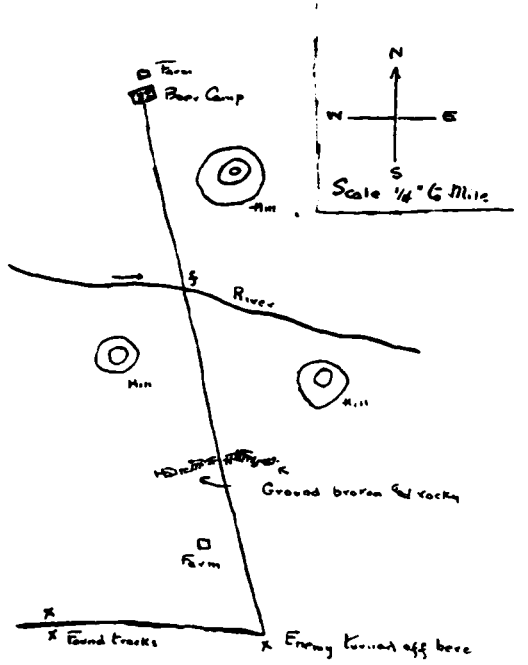
The sketch or sketch map which he will be required to draw, as a patrol leader for example, is merely a rough outline of the country he has been over, outlined in such a way that his commanding officer can understand by a glance, the principal topographical features as they have appeared to the sketch maker, their size, shape, and relative positions.

A very serviceable sketch may be made with simply a compass, note book and pencil, the rapidity of execution being often of more consequence than the finish of detail.

But though it be hastily made, it must be strikingly clear and distinct, otherwise it cannot be hastily read. The making of a patrol sketch should be among the acquirements of every non-commissioned officer of a troop. The necessary knowledge is but the result of that which must be possessed by the patrol leader in traversing an unfamiliar route, namely an eye for the country. Even the North American Indian can trace on strips of bark, or the sandy shore of some lake or river, a rude picture of the country with which he is acquainted, perhaps only from old men's tales. If his art is sufficient to prove the means of guiding the wilderness wayfarer, it has served a useful purpose. An Esquimaux once drew a sketch map for an artic exploring party, and it revealed the existence of a large body of water whose presence could not otherwise have been suspected.

In teaching sketch making the simplest means to attain the desired end, are usuallly the most effective. Especially is this so when applied to the enlisted personnel of our army, where lack of early educational advantages, in many instances, render it imperative to appeal to their common sense, rather

than to their "book learning." This policy has dictated the method briefly set forth in the present article. It seems hardly necesary to state that the explanations given are suggested to the reader as being applicable to a non-commissioned officer



A Sketch made by an English Scout in the Boer War

who has no knowledge whatever on the subject, and are intended to make clear to him the essential principles of a hasty patrol sketch. Small road sketches are first shown and analyzed under the following heads: (1) topographical signs, (2) means of showing (*a*) distance (*b*) direction (*c*) elevation.

A good way to commence is to get a pen and ink drawing or a photograph of a particular bit of country with which all are familiar and also a road sketch of it, place the two side by side.

That our present maps and sketches are evolved from pictures is shown by the conventional topographical signs, which are but convenient likenessess of the objects they represent. Being the a, b, c's of sketch making, our primary exercises should be concerned in their comprehension. They may be transferred to the blackboard from the Field Service Regulations and the class of non-commissioned officers provided with paper and sharp hard pencils, should be required to copy them faithfully, and turn them in for correction, until they are able to reproduce them as small and neat in appearance as they are in the book. Some practice can be obtained in lettering at the same time, and when all may be deemed sufficiently proficient, the instruction may be extended to the use of colored pencils and ink.

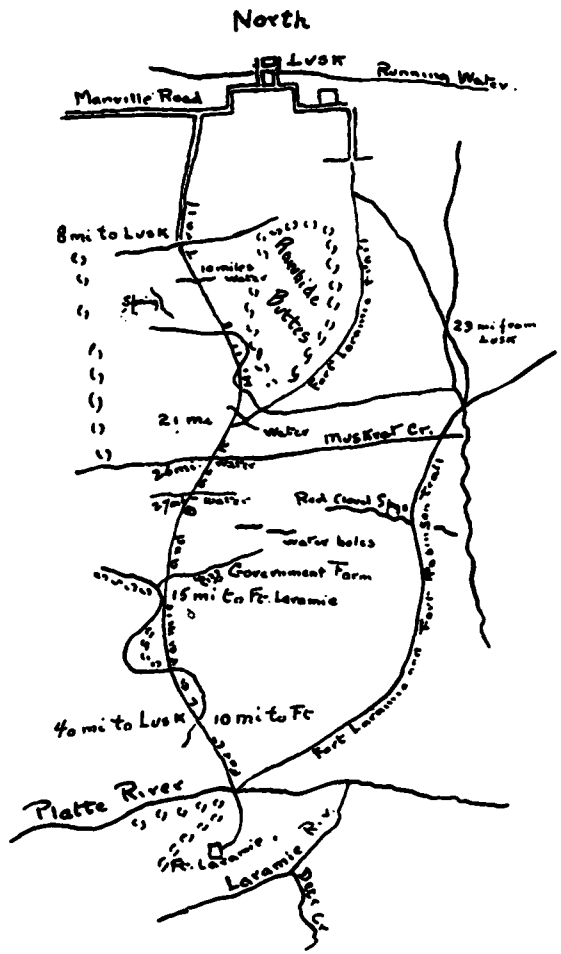
Blank sheets of paper are then distributed with a horizontal line drawn in the right hand lower corner of each, over which is conspicuously written or printed the word "miles" and underneath the line "———————— inches—equal 1 mile."

It should be explained that in sketching, as it is necessary to have a certain fixed distance on paper to represent a mile, which for convenience in measuring is usually taken in inches, it is equally important that who ever reads the map must know what that unit is, hence the purpose of a scale is twofold and no sketch, however, hastily prepared is worth much unless it shows one.

Scales should then be constructed from one inch to the mile to six inches by placing a zero point on the horizontal line and with a ruler laying off miles to the right, and a quarter miles to the left, of the zero point. The principle of the scale having been assimilated, the habit should be encouraged of considering distances on paper in miles and quarter miles instead of in inches.

The class ought to determine individually the length and breadth in miles, of their sheets of paper using different scales, and also the length of varying lines placed thereon. After a

few simple lessons of similar nature, another sheet with a blank scale on it can be furnished which is required to be completed so as to show three inches to the mile. Three inches to the mile for a road sketch and six inches to the mile for a position sketch,



being the military scales prescribed in orders, further exercises in laying off distance should be confined to these two.

After the unit distance, one mile, has been measured on the paper the ruler may be dispensed with, the extension of the

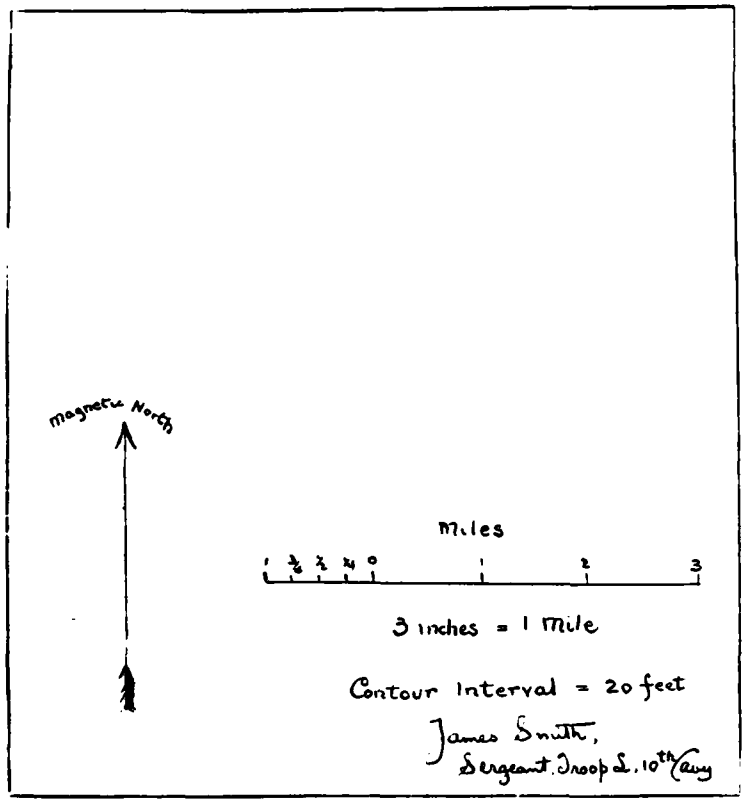
scale to the left of the zero point being obtained by folding a strip of paper of the proper length once for the half mile, twice for the quarter mile.

As judging distance which will come later in the out door work, depends upon a conception of one or two hundred yards, taken as the estimating unit, it is well to construct the three inch and six inch scale in yards. To convert the sketch distances from miles to yards the non-commissioned officers should be reminded that as 1760 yards constitute a mile, a quarter mile would be 440 yards. This last distance being divided in half, the least reading of the scale would be 220 yards. The mile scale can thus be drawn over again and marked in yards. As it is practically as easy a matter to estimate or measure 220 yards as 200, this ought to be quite good enough for a working scale for the non-commissioned officer to start with, but if it is desired to give him a better one, in order to avoid a somewhat complicated explanation, which might discourage his ardor the distance of 50 yards may be taken from the reverse side of the Field Message Blank, and with it a scale reading hundred yard units or five hundred yard units may be constructed.

Some practice should be had in devising means of measuring distance on the sketch and making scales, which does not depend upon the use of the ruler (which may not always be at his disposal when called upon to make a patrol sketch). Anything which will give him the length on one inch is all he needs. He ought to know the length of an inch on his thumb, measuring from the extremity to the first joint, or the length of some article which he is sure to find in his pocket, like his knife. He may mark inches on a piece of pine stick, which he has whittled into a ruler, or he may mark them on a lead pencil. These are useful and practical things to know, and have a tendency besides to make the subject of sketch making appear simpler.

In the next lesson the compass should be explained. It may not be superfluous to enunciate as an elementary principle that the dark end of the compass needle points to the magnetic north, for instances have been multiplied of confusion arising from uncertainty in a strange country upon this very

point. Disturbing influences on the needle may be illustrated by the magnet and afterwards more practically perhaps, in field work by laying the instrument down on a railroad track. The sixteen points of the compass should be learned, and sketched repeatedly from memory.



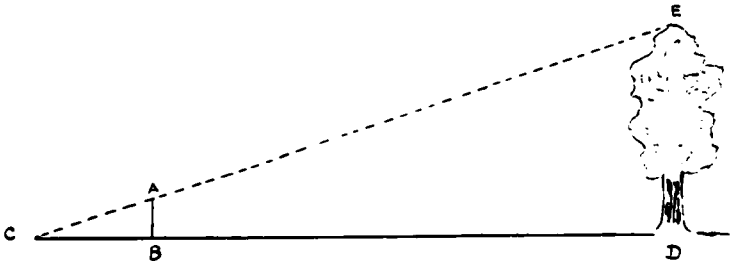
In indoor work the use of the comapss can be combined with the use of the scale and topographical signs. An arrow is drawn on the paper directly over the scale, or to the left of it, the arrow head pointing to the top of the sheet. Above the arrow is written "Magnetic North." The top of the sheet is now north and in reading, the sketch is held up like the page of a book, so that the lettering and conventional designs should

always be put down with this in mind. The sheet of paper should then be turned until its arrow points in the same direction as the needle of the compass, lying close by on the talbe, the conventional sign for the barracks is drawn in the center and diverging lines are sketched in the direction of the various familiar points,—the headquarters building, the quartermasters, the flag staff, etc., these distances being estimated and put down to scale. It may be required that streams be drawn flowing in certain directions, and their length be computed, and in like manner the dimensions of woods, fields and villages. Problems in roads may be given out as follows: A road starts from the headquarters building and runs south for one mile, then east two miles, then south-east a mile and a quarter; or commencing at a house, a road runs southeast three quarters of a mile then crosses a stream, continues in same direction through a wood one half mile further, goes through a cut, then, still in the same direction, a mile further on crosses a railroad track. These problems are all assumed at first in a perfectly level country.

The subject of countours may now be introduced by a tray of earth to represent a miniature terrain. The three form of hills, the cone or hill of regular shape, that of *convex* shape, and that of *concave* shape may be moulded by the fingers, while pieces of white string laid at equal intervals from the foot, will indicated differences of elevation. Each member of the class should be required to pass by the tray and look down upon the hill form, the go to the table and reproduce the lines upon paper. The six principal contour forms should be taken up in this way, namely: Watershed, valley, perpendicular cliff, overhanging cliff, hilltop and depression and the saddle. The different shaped hills as they appear on a map will, with a little practice, be instantly recognized. A combination or different combinations of the contour forms may then be moulded in the tray, and the class called upon to place the pieces of string as assumed heights, and draw the picture, by looking down at it as before.

Contours being conventional signs to represent irregularities of the ground, they should be mentioned and considered in the same way as other conventional signs such as houses, woods, streams, etc. A large scale map will be found useful

in making the miniature terrain, a carpenters rule will help in getting some degree of accuracy the points of equal height thereon to assist in putting the string in place. Each contour should be drawn on paper with a red pencil and assigned a height in feet the datum plane being asumed to be the bottom of the tray. Contour interval is thus elucidated and can now be added to the data which already appears at the bottom of the sketch, to wit: the arrow indicating the magnetic north and the scale. The three-inch-to-the-mile-sketch should read "Contour Interval=20 feet," the six inch sketch "Contour interval=10 feet." Assuming one or the other of these scales, the supposed heights of hills in the tray may be computed.



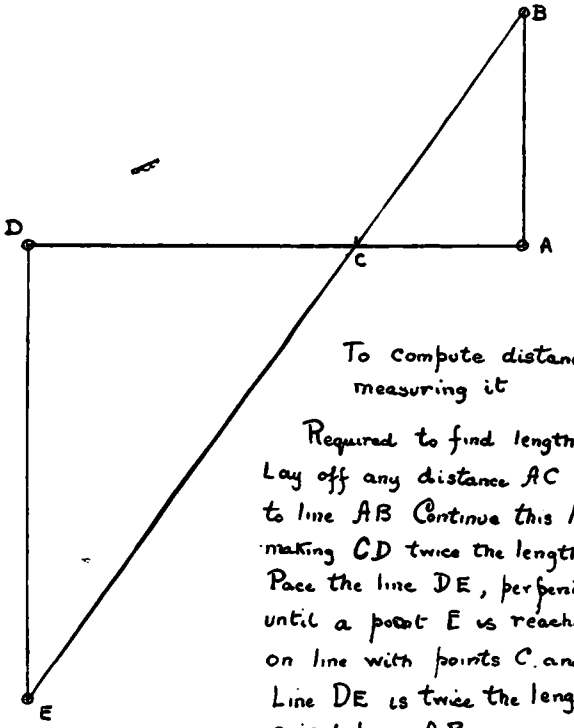
To compute small heights

If a staff AB = 5 feet
CB = 10 feet
CD = 100 feet

Then ED (height of tree) = $\frac{100 \times 5}{10}$ = 50 feet

In order to perform their entire duty, contours must tell three things, the shape of the ground, the height of the ground, the slope of the ground. The pupil should by this time have a clear enough idea of the first two requisites. Concerning the third one, the matter of the slopes, it is not considered advisable for him to continue his investigation any further than to learn how to give information by his sketch as to whether a hill is perpendicular, very steep, steep or gentle in slope. Practice in spacing countours from the hill forms modelled in the tray as previously explained ought to this extent to render him proficient.

Thus far the course of instruction has been indoors. It is suggested to save the work in sketching till the latter part of the winter, so that when spring opens, the training can be continued and completed in the open. The sketcher having acquired confidence in using the unit of measure on his sketch, now learns the unit on the ground. He should know to a cer-



tainty how many paces he takes in going one hundred yards, and his horse's strides in covering the same distance. In measuring distance by means of his horse, he must learn to allow for various conditions of country, for a horse will not take the same stride in going up or down hill, as he takes on the level and the rider must also make allowance for the condition of fatigue of his horse. This can be accomplished by liberal prac-

tice out of doors under all sorts of conditions. Distances between well known objects can be measured and laid off to scale on paper *ad libitum*.

Exercises in judging distances and heights should follow, and these estimates having been marked off on a sheet of paper, may be verified by the simple method shown in the diagrams. One hundred yards is the unit for estimating distance, and twenty feet is the unit for estimating height for in the three inch sketch, twenty feet in the contour interval. The height of different familiar objects, houses, trees, etc., should be measured and kept in mind, for this helps in forming a correct estimate of those higher.

The sketcher is now ready to commence actual sketching, by applying the knowledge he has previously required. He should provide himself of course with a sketching board and compass. The sketching board, he can make himself, by taking a piece of pine board, cutting it down to a size that will fit into his saddle pockets, sand papering it until it is perfectly smooth, and the edges bevelled, then getting a strip of leather from the saddler's shop, and nailing the ends to the side edges of the board, for convenience in slinging over the shoulders when not in use. On one side of this board a scale showing inches and quarter inches, is marked with an indelible pencil, on the opposite side a sheet of unrulled paper is fastened by four thumb tacks, placed at the corners.

A flat small open faced compass of gun metal, price approximately sixty cents is the most satisfactory to use, (the flatter the better), and one that does not have a stop, as the tendency with the stop is to use it before the compass needle has ceased vibration. The most convenient way to carry a compass of this kind both for map reading and hasty sketching, have found it to be on the left wrist. The saddler of the troop can very easily make a wristband to hold it in place, and it is then in view at all times, and in position when the left hand grasps the sketching board, while the right uses the pencil.

Position sketches are the best for the beginner. The class should be taken out on the parade ground or some other open place, and a base line between two conspicuous points selected. The pupil should then put his scale and his arrow on

paper, bring the compass level, turn the sketching board, which should also be level, so that the arrow on the paper points in the same way that the dark end of the compass, and pointing his finger or ruler in the direction of the base line, lay it off on his sketching paper. The rule which must be impresed upon the soldier at this time and insisted upon continually in pracrice is that *whenever he puts a line on his paper, his sketch arrow and compass needle should coincide.* Points will be laid out on the position sketch by intersection, by estimation and by actually measuring the distance. The uses of these three methods can be fully explained in three or four lessons covering as many different position sketches.

Elevations must all be estimated. To locate equal elevations, the hand is swept around in a circle, palm down, on line with the eye. The valleys are first located as the starting point of the lowest contours, the hill forms roughly sketched, then heights determined and contours placed accordingly. In road sketches form lines only should be used. No attempt should be made to indicate elevations except by writing down the height in figures, of important summits; no contour interval, therefore, should be noted.

The class should have practice in both the road and position sketch, using the field sketch blank. A sketch of the post may be made, and short sketches of road deviating in different directions.

After the non-commissioned officers become more certain of their ground, the sketches can be made longer, time limits being placed upon their execution.

Some work in memory sketching can be done, have a man go over a route with which he is familiar, and in a certain time come back and make a sketch of it under the eye of his instructor. Practical work in sketch making is worth any amount of theoretical instruction. After the elementary principles have been taught, the field work should habitually be done mounted and the sketches should be brought back to the barracks and finished in ink.

Each sketch turned in should be carefully corrected and retained. They may be compared for correction with the maps of the U. S. Geological Survey, which are the most accurate in

the country, and are published of most sections at a cost of five cents per sheet. By this time it will be found what non-commissioned offiers evince any special pedilection for the work, and further progress can be carried on by them—such as more elaborate problems in scales, a study of slopes, the construction and use of slope scales, slope boards, etc.

An intelligence bureau might be formed in the troop, for the purpose of keeping a record of all possible information of the surrounding country. For this purpose non-commissioned officers should be encouraged during their spare hours to make sketches of such roads, etc., as it may be desirable to know. This work can be done on practice marches, both enroute, and by exploring the country around camp, which will serve to while away pleasantly and profitably much time that otherwise would be spent in idleness.

With these various sketches, the non-commissioned officers who have shown marked interest and ability can have practice in copying and compiling a map by means of squares and from this blue print copies can be made for the use of all the non-commissioned officers of the troop, in maneuvers and field problems.

THE CAVALRY SCREEN.

By Captain G. W. MOSES, Fifteenth Cavalry.

(*Thesis—Army Staff College, 1911–12.*)

SCREENING may be defined as the covering of an army in such a manner as to conecal its strategical or tactical maneuvers.

As to the importance of screening Von Bernhardi says: "The screen is demanded by modern conditions of war, for however important it may be to gain early information of the enemy in order thereby to make the necessary disposition, it is naturally just as important to deprive him of this advantage."

THE OBJECT OF THE SCREEN.

The object of the screen may be fourfold:

1st. To protect the army from surprise.

2d. To prevent the enemy from discovering our intentions.

3d. To prevent hostile detachments from interfering with our dispositions.

4th. To deceive the enemy as to our actual intentions.

The first two are always present, the last two exist when our army is committed to the execution of some well defined plan of action.

DECEPTION OF THE ENEMY.

The deception of the enemy requires special measures which I shall consider before passing to a more general discussion of the subject.

As a rule, strategic movements can not be concealed from the enemy by mere screening because the army must not only be concealed from the enemy but active measures must also be adopted which will actually lead him to believe that our inten-

tions are widely different from what they really are. No hard and fast rule can be adopted for carrying this out. The genius of the commander-in-chief will be evidenced by his ability to recognize and to seize upon various expedients which present themselves for the accomplishment of this purpose.

Wellington is said to have always welcomed spies because they were always of greater service to him than to the enemy. Napoleon employed spies whom he knew to be playing double and kept them supplied with information as to his dispositions and forces which was so nearly correct in detail that the commanders of the allies were completely deceived as to the duplicity of their agents. Jackson was an adept at giving out half truths which threw the enemy off the true scent. As a rule, whatever ruse is adopted to deceive the enemy, there must be an actual movement of troops in the indicated direction and this movement must appear feasible and natural and correspond to the general situation.

One of the best examples which occurs to me of a strategical screening movement was that of Prince Murat, in the 1805 campaign. The Emperor Napoleon, encouraged the belief that he was concentrating his army on Straszburg for the purpose of attacking the Austrians through the Black Forrest. Murat was sent into the passes with five divisions of cavalry and acted so energetically that the Austrians were deceived into believing that the advance of the entire army along that route had begun and they made dispositions which embarrassed them during the entire campaign.

The fact that the real movements must be kept from the enemy until dispositions are very near completion, presents a great practical difficulty to the successful accomplishment of this scheme due to its interference with the work of reconnsiasance.

If the reconnoitering cavalry appears too soon in front of the marching columns after they have taken up the march in the true direction, the enemy's attention will be drawn prematurely to the real plan and he may have time to adopt contours measures. At the same time it will be necessary for the cavalry to shift in time to obtain the information which is necessary for the final arrangements and dispositions for the

battle. The mechanism of the movement requires such close adjustment that the superior commander must have a clear, well defined plan which he has communicated in detail to the cavalry commander. Once launched, the success of the movement will then depend upon the intelligence and resourcefulness of the latter.

Somewhat similar methods may be used for deceiving the enemy as to the extent of the front and the position of the reserves in nearby screening. For example, the enemy may seek to make the enemy believe that it is supported by infantry on the flank of the line and so cause an enveloping attack on his part to be launched against the air.

The terms "defensive" and "offensive" have become so common among military men referring to the screen that it seems advisable to refer to them before proceeding further with the discussion. Between the extremes of the two types it is evident that, in extensive operations, there will be a middle ground where the two will shade into one another.

DEFENSIVE SCREEN.

The "Defensive Screen" is formed by interposing a veil of cavalry between our army and the enemy through which he must break in order to secure information and which breach he must keep open if he would send back the information which he has obtained. General Hooker describes such a screen as follows: "You may depend upon it, we can never discover the whereabouts of the enemy, or divine his intentions, so long as he fills the country with a cloud of cavalry. We must break through that and find him" (R. R. Vol. 27, Part I, page 45.)

A defensive screen requires suitable terrain and is generally opposed to a successful carrying on of active reconnaissance. Such a screen is based upon some srtong natural feature as an unfordable stream or canal, a large woods or perhaps a ridge. Well chosen points are occupied and prepared for defense by fire action. From these points patrols are sent out in all directions so that it becomes extermely difficult for the enemy to get even small patrols within observing distance or for his messengers to return.

There is considerable opposition on the part of some writers to the defensive screen on the ground that it is useless in itself and that it tends to destroy initiative: to undermine that offensive spirit which is synonomous with "cavalry spirit."

DeBrack says: "The mission of the cavalry is to shed light and protect the march of the army preceding our columns, feeling on the flanks, surrounding all with a vigilant and fearless curtain; following the enemy step by step, tormenting him, engendering uneasiness, discovering his projects, wearing out his forces in detail, and compelling him to waste in defense that offensive power from which he would otherwise have been able to derive the greatest advantages."

It is not my intention to quarrel with this idea but I do believe there will frequently be times when the defensive screen should be resorted to. There will be times when it will be desirable to allow the enemy to remain quiescent when vigorous reconnaissance might prod him to action. Again we can not use up the energies of our cavalry by continuous active reconnaissance or it will break down when the situation demands every ounce of its energy. We must, therefore, sometimes resort to the defensive screen or else give up all efforts in that direction. Again we may wish to hold a natural position some distance in front of our infantry either as a preparation for an offensive movement or for the purpose of keeping the enemy from obtaining possession of it or we may wish to withdraw our infantry for use elsewhere or to change our dispositions preparatory to combat and will find just such a screen best suited to our purpose. It is usually unnecessary to attempt to cover our entire front. It may even be advisable to allow the enemy to see part of our dispositions while screening others from his view. In any event the front must not be so extended as to allow of its being easily pierced at any point by a concentrated effort on the part of the enemy. Of course our greatest concentration should be in front of that portion of our army which the general plan requires to be most carefully screened.

Von Bernhardi says: "I think that penetration of such a screen is generally considered to be easier than it really is, especially if the defending cavalry is supported by cyclists, machine guns or even artillery. According to my opinion,

reconnoitering squadrons would only under favorable circumstances be able to break through such a line that has been well disposed, and even if successful in so doing, it would find it still more difficult to return. It should never be forgotten that to overcome well placed posts, defending themselves with fire action, requires a great superiority of force: that a troop can only overcome quite a weak detachment so placed, and will, if successful, very soon find itself confronted with a superior force of the enemy's reserve. Single patrols of picked scouts will perhaps creep through but their return will be problematical unless they are strongly supported from the rear.

It will, therefore, generally require strong forces of the army cavalry to break through a well organized screening line composed of moderately strong cavalry detachments, and to maintain the breach so made long enough to carry out the object of the reconnaissance. The place where the screen is broken must in all places, even where the main body of the victorious reconnoitering cavalry is obliged to advance farther, be so strongly occupied that it will under all circumstances remain open for the service of transmission and for the eventual retirement."

He also suggests that the roads in front of the base be blocked with obstacles, the position of which are either known to our own troops or marked in some designated manner.

When the line is elongated as will usually result from a defensive screen, it must be continually borne in mind that if the enemy's cavalry appears in strength at any point sufficient concentration must immediately result to allow of passing to the offensive. Whatever the nature of the screen, the defeat of the enemy's cavalry whenever and wherever found is of first impotrance.

A defensive screen is only of material value when fairly close to the body which is being screened. For that reason, when the strategical cavalry is forming a defensive screen it should usually be reinforced by the divisional cavalry.

OFFENSIVE SCREEN.

The "Offensive Screen" results when our cavalry is pushed to the front with a view to getting into immediate contact with the enemy and by vigorous reconnaissance, preventing his sending out any reconnoitering force of sufficient size to support contact patrols. This, of course, implies ability to defeat the enemy's cavalry. An example may be found in the records of the Atlanta campaign. Kilpatrick reports: "On May 7, 1864, we crossed Nickajack Trace, forced back the rebel cavalry, covering and masking the twentieth corps. May 8th, moved to Villanow and opened communications with the Army of the Tennessee on Resaca, drove the enemy's cavalry and infantry skirmish line back behind his works, masking the movements of our infantry until the force of the enemy was too great to contend with longer, when I was relieved by the infantry and the command took post on the right of our army then in line of battle before Resaca." (R. R. Vol. 38, Part II, page 857.)

Whenever the superior commander's plan permits either the offensive screen or a combination of the offensive and defensive screen should be adopted. Such a course prevents the enemy from securing the initiative and allows a combination of screening with reconnaissance duty.

The first duty of the offensive screen is to defeat the hostile cavalry. Until this is accomplished there can be no liberty of operation. In order to secure the overthrow of the enemy's cavalry we must see to it that we have obtained numerical superiority at the point where the decisive action is to take place. For that reason the cavalry must be kept concentrated, only such covering bodies being sent out as will provide for the security of the main mass. During the final combat strong patrols must be placed on the flanks whose duty it will be, in addition to acting as combat or flank-protecting patrols, to see that the enemy does not slip by strategic patrols while the other troops are interested in the main fight.

The commander must at all times avoid dispersing to such an extent as to allow the enemy to assume the offensive and beat him in detail. His task is, therefore, composed of two elements which are necessarily in conflict. He must himself observe and he must prevent the enemy from doing so.

To accomplish the first requires dispersion, the second, concentration. In order to succeed, he must keep the right balance between the two requirements. This can frequently be accomplished by advancing from position to position. The strategic cavalry is divided into two lines—a line of observation and a line of defense. The second line, while remaining in position is, for the time being, a defensive screen. Such advantage is taken of the terrain as will aid any portion of the line to hold the enemy in check, by fire action, if necessary until sufficient concentration can be effected to assume the offensive. The method of advance is for the entire body of cavalry to seize some natural position as a stream line and push reconnoitering bodies to the front until another such position is reached and secured, when the second line will come forward and the operation be repeated from position to position until the objective is reached.

This method saves horse flesh and, since reconnaissance can be more effectively carried on from a halt than while in motion, it facilitates reconnaissance. It also reduces the difficulty of intercourse between the main army and different parts of the screening force. If the enemy is active and resourceful and this method of advancing is not practicable on account of unsuitable terrain, the screening force must be kept well concentrated and depend upon active reconnaissance supplemented by the divisional cavalry to give the necessary protection.

It must not be forgotten, however, that while active reconnaissance assists screening by keeping the enemy engaged elsewhere and under constant observation, the obligation is always present for the second line of the strategic cavalry and especially the divisional cavalry to do all it can to block the roads and to capture or destroy the enemy's patrols and messengers. The most efficient reconnaissance is not *per se* a sufficient screen against resourceful enemy.

SCREENING WITH INFERIOR CAVALRY.

Finally, if the enemy has estabilshed his superiority by decisive action an energetic cavalry leader will not crawl behind his infantry and quit. Active patrolling against the

enemy's reconnoitering units will tend to keep them within supporting distance of the larger units and limit their field of operation. If he can do nothing else he may still be able to intercept messages.

When driven behind his infantry supports he should have the determination to get out again as soon as possible; to annoy the enemy constantly and to attack whenever there is any prospect of success. Such is the true cavalry spirit which will accomplish much even when conditions are at their worst.

THE CHILIAN ARMY.

APPOINTMENT, CLASSIFICATION AND PROMOTION OF ITS PERSONNEL.

By Lieutenant FRANCES A. RUGGLES, Eleventh Cavalry.

(*Continued from the November, 1911, number of the Cavalry Journal.**)

Second bill:

The second bill dealing with these subjects is as follows: "*Proyecto de Lei de Ascensos.*" (Project of a promotion law.)

Article 1.

The individuals belonging to the army shall be divided into two classes, viz:

a. Officers and soldiers.

b. Military employees.

Article 2.

Belonging to the first class are:

a. Officers of the army.

b Officers of the sanitary service

c. Superior officers of the supply department.

d. Non-commissioned and assimilated non-commissioned officers.

e. Soldiers (privates).

Article 3.

The second class shall comprise the following:

a. Judge advocates and chaplains.

b. Subaltern employees of the supply department.

c. Professors of swordsmanship and masters of arms.

*References to pages and to Bill No. 1, throughout this article, refer to the pages of the November, 1911, number of this Journal and to the Bill appearing in that number.

d. Veterinarians.
e. Artificiers.
f. Military storekeepers.
g. Military pharmacists.

Those individuals not included in the foregoing list, but in the employ of the Ministry of War with the *character* of officers are also military employees.

Article 4.

All employees of the army not included in the foregoing article, but whose employ is provided for in the appropriation bill, or in the special regulations fixing the strength of the army, in case of mobilization, are civil employees and have the same character as other employees of the public service. Their rights, attributes and duties are provided for in the general laws or special regulations establishing their employment.

Article 5.

Officers are divided into four classes as follows:

a. *General officers:*
1. General of division.
2. General of brigade.

b. *Superior officers:*
1. Colonel.
2. Lieutenant colonel.
3. Major.

c. *Captains.*

d. *Subaltern officers:*
1. First lieutenant.
2. Second lieutenant.

Article 6.

The class of "officers of the sanitary services" shall comprise those doctors from the rank of first lieutenant to general of brigade, inclusive. That of "superior officers of the supply department" shall comprise those officers from sub intendant to military intendant, inclusive, with rank of from major to colonel.

Article 7.

Non-commissioned officers shall be divided into two classes, as follows:

1. First class:
   a. Sub-lieutenant
   b. First sergeant.
   c. Vice first sergeant.
   d. Ensign.
2. Second class:
   a. Second sergeant.
   b. First corporal.
   c. Second corporal.

Those artisans and workmen having the assimilated rank of non-commissioned officer belong to the class corresponding to their grade. They can, however, in no case be promoted to the grade of sub-lieutenant.

Sub-lieutenant shall wear the uniform of an officer, with some distinguishing mark, and receive the pay and allowances of a first lieutenant. Although not belonging to the class of "officers" they replace them in their absence.

Provided that their service shall have been satisfactory, sub-lieutenants shall receive as a yearly pension upon retirement as many thirtieth parts of their active pay as they may have years of service. They shall be obliged to retire upon attaining the age of forty five years.

Those cadets at the military academy and "aspirants for commissions" fulfilling these requirements laid down by this law are "ensigns."

Article 8.

To the class of *soldiers* shall belong:
a. *Aspirants for commissions.*
b. Cadets.

c. Students at the non commissioned officers' school.

d. Contracted (enlisted) soldiers (privates).

e. Volunteer soldiers (privates) *i. e.* those who voluntarily present themselves to perform their military service.

f. Conscripted soldiers (privates).

g. The soldier workman, or laborer.

APPOINTMENTS.

A. Of Officers and Individuals of the Ranks.

Article 9.

The nominations and promotions of officers shall be made by the President of the Republic in accordance with the provisions of this law. Those of individuals in the ranks shall be made by the proper military authorities pursuant to the requirements of special regulations.

Article 10.

Officers shall enter the army in the grade of second lieutenant. Individuals of the ranks enter as privates.

The requirements for appointment as sub-lieutenant are:

a. To have served as a first sergeant with character *excellent* for the three years preceding the appointment.

b. To have, after having received a nomination by the supreme government, passed a theoretical and practical examination to determine fitness before a board of officers appointed by the division commander.

The following persons shall be appointed *ensigns* of the army and enter the *military course** of the military academy for a period of one year:

a. Those cadets who have taken the *general course* at the military academy (first four years) and successfully passed the required examinations.

b *Aspirants for commissions* who have satisfactorily served four months in the ranks, and have passed an examination on the subjects given in the sixth year's course in the arts or mathematics.

*The military course of the academy is that given in the fifth or last year.

Those ensigns, at least eighteen years of age, who have passed through the *military course* of the academy and successfully passed their final examinations shall be appointed second lieutenants.

B. Of Officers of the Sanitary Service.

Article 11.

The personnel of officers of the sanitary service shall be distributed among the following grades:

a. General of brigade doctor, director of the sanitary service.

b. Colonel doctor.

c. Lieutenant colonel doctor.

d. Major doctor.

e. Captain doctor.

f. First lieutenant doctor.

The above named officers shall have the rank, pay, and allowances, retired pay and pensions corresponding to those of officers of the same grade in the army. They shall be subject to the laws and regulations in force in the military service.

Officers of the sanitary service shall be promoted by strict seniority, subject to the requirements that they show themselves worthy of performing the duties of the next higher grade, that they have good efficiency reports, and prove their capabilities annually by means of theses or by solving problems connected with their service.*

Article 12:

Same as Article 12, Bill No. 1, see page 497, with the following additional paragraph:

3. Second pharmacists shall have the pay and assimilated character of second lieutenant, first pharmacists of first lieutenants.

*This article is identical with Article 11 of Bill No. 1, page 496, November number of the CAVALRY JOURNAL.

C. Of Superior Officers of the Supply Department.

Article 13.

Superior officers of the supply department shall have the following grades:

a. Military intendant with rank of colonel

b. Intendant of division with rank of lieutenant colonel.

c. Sub-intendant with rank of major.

The above officers shall have the rank, title, pay and allowances, retired pay and pensions of "officers" of the corresponding grade in the army. They shall be subject to the laws and regulations in force in the military service.

Article 14.

The requirements for promotion from the grade of sub-intendant to that of intendant of division and thence to military intendant are:

a. To have served five years in the immediate lower grade and to have shown aptitude and ability by means of annual theses or the solving of problems connected with the supply service.

b. To have obtained good efficiency reports.

D. Of Officers of Reserve.

Article 15.

Same as Article 15 of Bill No. 1, see page 497.

E. Of Military Employees.

Articles 16, 17, 18 and 20 are the same as the corresponding articles of the first bill. See pages 498 and 499 of the November number of the CAVALRY JOURNAL.

Article 19.

The same as Article 19 of Bill No. 1 (page 499) with the following additional paragraphs:

The requirements for promotion to the grade of second accountant are:

a. To have served at least four years as a third accountant and to have obtained during this time excellent efficiency reports.

b. To have satisfactorily passed an examination on that particular branch of the supply department which has to do with the service of supply in a regiment.

The requirements for promotion to the grade of first accountant are similar to those for second accountant (minimum service in lower grade, etc.) except that the examination will be upon all the branches of the supply department.

Article 21.

The same as Article 21 of Bill No. 1 with the following additional paragraphs referring to blacksmiths:

Major blacksmiths shall have the rank of first sergeants and the pay and allowances of a second lieutenant. They shall wear the uniform of their grade with some distinguishing mark.

First blacksmiths shall have the rank of first sergeant and second blacksmiths that of vice-first sergeant.*

Article 22.

Same as Article 22 of Bill No. 1 (see page 501) with the following additional paragraph:

The requirements for promotion to grades between that of second and major artificier (the latter inclusive) are:

To have served at least two years in the next lower grade and to have obtained good efficiency reports and a declaration of competency from the immediate superior.

Article 23.

Same as article 23 of Bill No. 1, see page 501.†

*It is presumed that first and second blacksmiths receive the pay and allowances of first and vice first sergeants respectively.

†It will be observed that the law is silent regarding the appointment of judge-advocates, chaplains, professors and masters of arms and prescribes nothing concerning the organization and grades of these services. Article 12 gives the organization and grades of military pharmacists but does not regulate their appointment. By Article 3 these individuals are "military employees."

PROMOTIONS.

Of Officers and Individuals of the Ranks.

Article 24.

Vacancies in the grade of second corporal shall be filled as follows:

a. By graduates of the non-commissioned officers' military academy, who upon their final examination attain a mark of not less than five nor greater than seven.

b. By the promotion of those distinguished privates of at least one year's service who, as a result of an examination to determine fitness, are proposed by their respective superiors.

Vacancies in the grade of first corporal are filled:

a. By those graduates of the non-commissioned officers' military academy, who, upon their final examination attain a mark greater than seven.

b. By the promotion of second corporals who have served at least one year in that grade and who as a result of an examination to determine fitness, are nominated by their respective superiors.

Vacancies in the grade of second sergeant are filled by the promotion of first corporals, who have served as such for at least a year, and who, as a result of an examination to determine fitness and of a good record, are nominated by their respective superiors.

The director of the non-commissioned officers' military academy is authorized to propose annually for appointment as second sergeants the names of the three graduates who, upon their final examination made the highest percentages, provided they are deemed worthy of this distinction.

Vacancies in the grades of vice first and first sergeants are filled by the promotion of second and vice first sergeants respectively, of at least one year's service in their grade, who, after having been designated as competitors by their respective superiors, obtain the highest mark in the regimental competitive examinations held for this purpose.

Article 25.

Officers shall be promoted to certain grades after a minimum and to others after a fixed length of service in the next lower grade as follows:

a. Second and first lieutenants must serve at least three and four years respectively in their grades before promotion.

b. From the grade of captain to that of general of division officers shall be promoted immediately after having served in each grade, the following fixed limits of time, viz:

From captain to major	8 years.
From major to lieutenant colonel	6 years.
From lieutenant colonel to colonel	4 years.
From colonel to general of brigade	3 years.
From general of brigade to general of division	3 years.

The President of the Republic will, in the manner to be prescribed by this law, annually decree either the transfer to *passive service* or the retirement of that number of general and superior officers who, as a consequence of this promotion at the termination of fixed limits of time, are in excess of those authorized by law.*

Article 26.

Officers transferred to the *passive service* shall receive the active pay and prerogatives of their grade, but shall not be eligible for promotion. They shall be detailed to serve as *commandant general* or *commandants of arms* in the constabulary or gendarmary, as commandants of military reservations, aides de-camps to congress, adjutants to *commandants of arms*, and as chief of ordnance depots, shops, military storehouses, and factories of explosives.

Whenever officers of the *passive service* are called to retirement (*i. e.* retired) they shall receive as yearly pay as many fortieth parts of the active pay of their grade as they may have years of service, including those of *passive service*.

Article 27.

The elimination prescribed in Article 25 will be carried out as follows:

*In other words, these officers will be eliminated.

A board of generals of divisions will annually, or bi-annually if necessary, recommend to the President of the Republic those generals of brigade and superior officers whom it shall be necessary to transfer to the *passive service* or to retire. These recommendations shall be accompanied by all papers bearing upon the case.

Whenever, on account of a numerical excess, it shall be necessary to retire a general of division, the selection will be made by the President of the Republic with the advice and consent of the *Council of State.*

In order to carry out this elimination all officers of the grade shall be considered and selections shall be made strictly upon the merits (or demerits) of each one without regard to seniority. The good of the army should be the first aim.

Article 28.

Officers who, pursuant to this law, are eliminated on account of numerical excess shall receive as yearly retired pay as many fortieth parts of the active pay of the *next higher grade* as they may have years of service.*

Article 29.

In order to be promoted to the next higher grade officers shall serve *with troops* the amounts of time which for each grade are below set forth, viz:

As a second lieutenant	3 years.
As a first lieutenant	3 years.
As a captain	3 years.
As a major	2 years.
As a lieutenant colonel	2 years.
As a colonel	1 year.
As a general of brigade	1 year.

Service in the first division shall for this purpose be counted double. Service in the Territory of Magallanes shall in the same manner be counted double.

*If passed to the passive service they receive the active pay of their grade. Thus if a colonel is retired by elimination after thirty years service, he would receive as retired pay seventy-five per cent of the active pay of a general of brigade.

Superior officers of engineers may perform their service *with troops* in the infantry.

Service as student officers in the schools of application or in other arms of the service shall, in cases of captains and subalterns, be counted as service "with troops."

Service as instructors, professors, tactical officers, etc., at the schools of application, the military academy and the non-commissioned officer's military academy shall, for all officers, be considered as service *with troops.*

Article 30.

For promotion to the grades of captain and major, officers shall be required to pass, obtaining a higher mark than six, a theoretical and practical examination. This will be taken, at least six months before becoming eligible for promotion, before a board of officers appointed, for each arm annually, by the Minister of War.

Those failing to pass this examination shall repeat it in six months. In case of a second failure (for the same grade) officers shall be retired receiving as yearly pay as many fortieth parts of the active pay of their grade as they may have years of service.

Article 31.

Generals of brigade and colonels shall not be nominated for promotion to the next higher grade, unless they have had command of a *tactical ride* and have taken part (in their grade) in at least one of the annual divisional maneuvers.

Article 32.

The personnel department shall not propose the name of any officer, from lieutenant to general, for promotion unless the reports of his superiors declare him to have an unimpeachable record and to be capable of performing the duties of the next higher grade. Full physical vigor shall be regarded as one of the most important requirements.

Article 33.

*Promotion with advantage**.

*See note under article 32, page 507.

Will take place in advancement from the grade of captain to that of major and from major to that of lieutenant colonel only.

The following shall be entitled to the *advantage for promotion* hereinafter set forth:

1. Officers who have served for two years in their grade as members of the general staff corps, except in the map department, and have during this time received unimpeachable efficiency reports shall be given an *advantage for promotion* of two years.

Officers of the general staff corps detailed for service abroad (foreign service) shall, providing the decree nominating them so specifies, be considered as still serving with the general staff. The supreme government shall not grant this privilege to officers unless they are sent on some mission connected with the service of the general staff.

2. Officers detailed as *higher adjutants, i. e.*, adjutants of brigade who have served without interruption for two years in that capacity and have attained unimpeachable efficiency reports shall be given an *advantage for promotion* of one year.

3. Officers serving with troops or in other military capacities who for three consecutive years are recommended for this distinction by their immediate superior, concurred in by all other direct superiors, shall be allowed an *advantage for promotion* of one year.

In order to receive the two years *advantage for promotion* granted in paragraph 1 of this article, officers of the general staff corps must fulfill the following conditions:

a. An unimpeachable personal and professional record during their entire military career.

b. To have demonstrated during the whole period of service as a general staff officer exceptional efficiency.

c. To have attained upon being graduated from the academy of war a percentage of not less than eight (very good).

d. To have received the declaration of the Chief of the General Staff, made by and with the advice and consent of the *Council of the General Staff*, that the officer in question

fulfills the requirements laid down in paragraphs "a," "b," and "c" above.

Those officers of the general staff corps who do not fulfill all of the requirements named above shall, once that their two years necessary service in that corps shall have expired, be entitled to the *advantage for promotion* allowed to higher adjutants only, *i. e.* one year.

In order to receive the *advantage for promotion* of one year, granted by paragraph 2 of this article, higher adjutants must fulfill the following requirements:

a. To have been detailed by supreme authority, as adjutant of a command higher than a regiment.

b. To have received in the five years preceding the detail, excellent efficiency reports and to have had an unimpeachable personal and professional record.

c. To have exercised, for at least three consecutive years, the active command over a body of troops corresponding to the grade.

Article 34.

Deals with efficiency reports and is the same as Article 30 (page 505) Bill No. 1, omitting the last sentence of paragraph 1, which reads "'whosoever reports, etc.' paragraphs 'c,' 'd,' 'e' and 'f' of Article 25."

Article 35.

The Personnel Department should from time to time recommend for retirement those captains and sub-altern officers whose efficiency reports show them to be incapable or unworthy.

Recommendations of this nature shall, however, not be made until the department shall have, by investigation, convinced itself that the reports are just and that the facts are as stated.

B. Of Officers of the Sanitary Service.

Article 36.

Treats of the requirements for promotion among military doctors, and is the same as Article 37, of Bill No. 1, with the following addition relating to military pharmacists:

The requirements for appointment as military pharmacist are as follows:

a. As second pharmacist. To be a student of pharmacy.

b. As first pharmacist. To be in possession of the degree of pharmacist issued by the State University.

C. Of Officers of Reserve and Officers of the Sanitary Service of Reserve.

Article 37.

Same as Article 38 (page 509) Bill No. 1.

Article 38.

Same as Article 39 (page 510) Bill No. 1.

Article 39.

Same as Article 40 (page 510) Bill No. 1.

Article 40.

Same as Article 41 (page 510) Bill No. 1, substituting "second reserve" for that of "national guard" in the last line.

Article 41.

Same as Article 42 (page 510) Bill No. 1, substituting for the words "by reason of age" in line two the words "by elimination."

Article 42.

Same as Article 43 (page 511) Bill No. 1.

D. Of Military Employees.

Article 43.

Same as Article 44 (page 511) Bill No. 1.

Article 44.

Treats of requirements for promotion of supply officers and is the same as Article 45 (page 511) Bill No. 1, substituting the words "sub-intendant" for the words "major accountant" line two.

Article 45.

Treats of the requirements for promotion of veterinarians and is the same as Article 46 (page 511) Bill No. 1.

Article 46.

Treats of the requirements for promotion of artificers and is the same as Article 47 (page 512) Bill No. 1.

Article 47.

Explains the meaning of the words "rank" and "character" and is the same as Article 48 (page 512) Bill No. 1.

Article 48.

Treats of depositories for efficiency reports and is the same as Article 49 (page 512) Bill No. 1.

Article 49.

Treats of positions in government service to be filled by non-commissioned officers and is the same as Article 50 (page 513) Bill No. 1.

Article 50.

Those officers in the active service of foreign armies, contracted for service in the (Chilian) army shall have the title of *honorary officers* and the rank of other officers.

They shall serve as professors, instructors and counsellors, and shall receive the emoluments and privileges granted them in their contracts.

Article 51.

Treats of senority of officers and is the same as Article 52 (page 513) Bill No. 1.

Article 52.

Officers temporarily retired or passed to the reserve can return to active service in case of war only.*

* It is presumed that retired officers entering the supply department are exempt from this provision. See Article 20, page 499.

When returned to active service pursuant to the above, these officers shall reënter with the rank and seniority held by them at the date of retirement, the time spent in retirement not being credited them.

Article 53.

Treats of location of examining boards and is the same as Article 54 (page 514) Bill No. 1.

Article 54.

All laws relating to the subjects treated of in this bill including those portions which are not contrary to these provisions are hereby repealed.*

Article 55.

In time of war, the time limits for permanence in each grade before promotion shall be reduced by one-half, and the President of the Republic is further authorized to promote officers, in justifiable cases, with regard to nothing but the requirements of the army.†

Article 56.

The obligatory retirement law is hereby repealed.

TRANSITORY ARTICLES.

Article 1.

The qualifications required for appointment to the grade of lieutenont doctor shall not apply to those officers of the sanitary service at present in the army.

Article 2.

Major accountants are hereby appointed sub-intendants.

Article 3.

Treats of examination for promotion of captains at present eligible for promotion.

* This leaves chaplains, judge advocates, professors of swordsmanship and master of arms in a precarious condition.

† That is in time of war the President may arbitrarily make such promotions as he shall deem for the best interests of the army.

GENERAL REMARKS.

The necessity for some sort of legislation to correct the well known evils incident to our system of promotion has given rise to general interest in this subject throughout the army. The experience of other nations and the study of their promotion laws should therefore be of interest, and, although their organization is often different from ours, it is not improbable that suggestions of value may therefrom be obtained.

Under "General Remarks," page 491, this paper, attention has been invited to certain features of the present Chilian regulations, the effects of which are considered beneficial. The objections of the Chilian War Department to the actual state of affairs are given on page 490, this paper. As previously stated, one of the most significant of these is that, after a fair trial of over twenty years, it has been decided that *promotion by merit* or *by selection* is impracticable.

In considering the two bills submitted to the Chilian Congress with a view of remedying the promotion laws, one finds numerous provisions which appear of value, or at least worthy of careful consideration by those engaged in preparing similar laws for our service. These are the following:

1. *The creation of the grade of sub-lieutenant.*

See Articles 7 and 10 of second bill, pages 99 and 100, this number, this article.

This is practically the establishment of a warrant rank with the pay of a first lieutenant. Such a measure would create more of a career for non commissioned officers and the retirement provision, modified if necessary, would insure their future by preventing the danger of discharge on account of disability, with a nominal pension, after fifteen or twenty years service. This should result in the procuring and retaining of better material.

2. *Organization of the Veterinary Service.*

This allows veteriñarians to rise up to and including the grade of captain, giving them the pay and *character* of their grade. Were a similar measure adopted in our service, the condition of these men would be improved and this should result in obtaining better material.

3. Minimum Length of Service "with Troops" Required Before Promotion to the Next Higher Grade.

(The advantages resulting from the promotion of officers to fill vacancies in the *next higher grade* only have been commented upon in paragraph 2, page 492 this report.)

Under present conditions in our service, a measure requiring service *with troops* for certain lengths of time in each grade is, except perhaps in the case of lieutenant colonels on account of the slowness of promotion, unnecessary. Should, however, our laws be so modified that officers might, in some cases, be promoted with less than four years service (the length of the longest details) in their grade it should be adopted.

4. Promotion after fixed (minimum for lieutenants) lengths of service in next lower grade. Elimination. The passive service.

Referring to this article we note that officers are promoted after serving in each grade as follows:*

From second to first lieutenant	3 years minimum.
From first lieutenant to captain	4 years minimum.
From captain to major	8 years fixed.
Fram major to lieutenant colonel	6 years fixed.
From lieutenant colonel to colonel	4 years fixed.
From colonel to brigadier general	3 years fixed.
From brigadier to major general	3 years fixed.

Presuming the average age of second lieutenants entering our service to be twenty-two and the average permanence in the subaltern grades to be eight years, then according to the foregoing scheme, officers would be promoted as follows:

To be captains at	30 years of age after 8 years service.
To be majors at	38 years of age after 16 years service.
To be lieutenant colonel at	44 years of age after 22 years service.
To be colonels at	48 years of age after 26 years service.
To be brigadier generals at	51 years of age after 29 years service.
To be major generals at	54 years of age after 32 years service.

*The years of service referred to above are commissioned service. in case of second lieutenants entering the army at twenty-one and serving the minimum of seven years as lieutenants, the above ages would for each grade be reduced by two years. An *advantage for promotion* would reduce the age and length of service of majors from one to two years and those of the grades from lieutenant colonel to major general, both inclusive, from one to four.

That such a scheme, as that given above, would produce a healthy flow of promotion, with its attendant advantages, and at the same time require a sufficient maturity and permanence in each grade to insure experience cannot be denied.

Elimination.

This is necessary in order to provide vacancies for the forced promotions. It is worthy of note, however, that elimination is prescribed in the grades of superior (field) and general officers only. The idea is, evidently, that a fair judgment cannot or that a hasty one should not be made of young officers. To a certain degree, this is so; still it is believedthat it would be advisable to extend the elimination to captains after half (*i. e.* four years) their service in that grade. After an officer has served ten or eleven years he has had a sufficient term of probation and it should not be difficult to form a just opinion of his merits.

Referring to Article 28, second bill, it will be observed that officers retired by elimination shall receive as many fortieth parts of the active pay of the *next higher grade* as they may have years of service, including that at the military academy. Presuming an average of two years service before appointment as a second lieutenant (graduates of the military academy would have from four to five) and elimination at the first available moment, as prescribed by the bill, *i. e.* immediately upon promotion to the grade of major, officers could not have less than seventeen years service (two before commission, seven as a lieutenant and eight as a captain). Their eliminated monthly pay would therefore be $\frac{17}{40}$ of $375.00 (the monthly pay of a lieutenant colonel with over fifteen years service) or $159.38.* The average age of majors eliminated under the above circumstances would be but thirty-eight years. It should be remembered that the monthly eliminated pay given above is practically the *least* amount that could be received by officers eliminated under the provisions of the bill. Under the recommendation made that elimination be extended to captains of four years service in that grade, these officers, in our service, would receive as

*The above is computed for our service.

monthly pay $\frac{13}{40}$ of $300.00 (pay of major with two fogies) or $97.50 at an age of only *thirty-four years*

The two cases before given have been extreme and illustrate, as stated before, practically the least pay receivable. Let us take an average case of an officer eliminated upon attaining the grade of lieutenant colonel. Allowing two years service before commission he would have served twenty-three years and would receive (in our service) $\frac{23}{40}$ of $416.67 (pay of a colonel with twenty years service) or $239.57 a month. His average age would be forty four years. The retired pay of a lieutanant colonel with twenty years service is $281.25, but under present conditions, an officer in our service, would at forty-four years of age be only a major (the majority of officers would be captains) and his retired pay would be $250.00 a month. Were he a captain he would receive but $210 00 monthly retired pay. It cannot be imagined that anyone (congressmen excepted) could object to so liberal elimination.

It is presumed that the chief objection to such a scheme as the one outlined is that, on account of the additional expense involved, it would be difficult to secure it's passage by congress. On the other hand it appears equally impossible on account of the opposition of the army itself, to pass an elimination bill not involving (or very little) increased expense. It would appear that the benefit to the army of elimination and of a scheme of promotion similar to the one here given should be well worth the additional expenditure and, through the increased efficiency, would in time of war save many times its cost. To increase the efficiency of anything without spending money is difficult.

The Passive Service.

The creation of the *passive service* is not without value. The more efficient of the eliminated officers and those eliminated on account of physical disability could be used to advantage in filling school, recruiting and other details which at present deplete our commissioned personnel. It is but just that these officers should receive the active pay of their grade.

5. *Equitable Adjustment of Relative Rank.*

By Article 27 of the first bill (see page 504), the relative rank of officers remains, except temporarily, unchanged. The adoption of such a measure would, it is thought, cause little inconvenience and tend to prevent discord. Its justice is apparent.

6. *Importance Given to Efficiency Reports.*

See Articles 30 and 31, first bill, and Article 34, second bill.

It will be observed that great attention is paid to efficiency reports and that a special personnel department is in charge of them and of details.

It is believed that, in our service, sufficient importance is not attached to these reports, and that in consequence many details are made without reference to special fitness. Especially is this so in the giving to regular officers of volunteer commissions in time of war. It does not appear reasonable to have efficiency reports and then, at the time they are most needed, disregard them.

7. *Retirement for Inefficiency.*

This provides for the retirement of inefficient captains and lieutenants. As the elimination of other officers is prescribed a *weeding out* process is established.

It would increase the efficiency of our service if those officers whose verified records showed them to be incapable or unworthy were either retired or wholly retired.

8. *Providing Government Employ for Non commissioned Officers of Ten Years Service.*

This measure is of value for two reasons, viz:

1. It betters the future of non-commissioned officers and consequently tends toward the securing of better material and of retaining it for ten years.

2. As railways, telegraphs, etc., play such an important part in time of war, it is particularly desirable, especially in a country having government railway and telegraph lines, to

have as many trained soldiers as possible employed in these services. This provision therefore appears worthy of emulation.

9. *The Advantage for Promotion.*

These provisions have the advantage that they provide a method of rewarding exceptionally efficient officers. As far as possible the chances of favoritism have been eliminated.

Considering the *advantage for promotion* in connection with the first bill, in which the retirement law is still in force, a case might develop where an efficient officer, not entitled to an *advantage for promotion* (or entitled to a smaller one than another officer) would be jumped once or twice by officers having *advantages for promotion*, and, as a consequence of losing his vacancy, be obliged to retire on account of age.

Under the provisions of the second bill an efficient officer would not be seriously injured, even if jumped several times, for his promotion does not depend upon vacancies, but upon a fixed length of service in his grade. He would, of course, lose permanently in relative and lineal rank.

In order to reward exceptionally efficient officers and at the same time not injure efficient ones, it would be necessary either to make extra numbers of those promoted as a result of having an *advantage* or to prescribe that they retain a fixed place on the lineal and relative list until all officers who had previously been their seniors had in their turn been promoted, when those promoted *with advantage* would reassume their old positions. In this manner no one would be permanently injured and the rewards would consist in obtaining the increased rank and pay one or two years earlier. This is a not inconsiderable premium and should rouse the spirit of emulation and at the same time not produce discouragement. It will be noted that the bills provide for *promotion with advantage* to the grades of major and lieutenant colonel only. Under the restrictions suggested it could be extended to include other grades.*

* The first bill allows *promotion with advantage* to the grade of captain.

Reprints and Translations.

MORGANS IN THE CAVALRY.*

BY GENERAL CHARLES H. TOMPKINS, U. S. ARMY, RETIRED.

(*From Bit & Spur of June, 1912.*)

I was a member of the class of 1851 at West Point, but resigned before the class graduated. In 1856 I enlisted in the cavalry and remained in that service continuously. General McClellan appointed me inspector of Cavalry and I first saw the First Vermont Cavalry in December, 1861, and I noticed its fine horses—small and close-cuopled. The regiment was sent to Annapolis, and Captain Holliday, of the regular army was appointed colonel in command. I was ordered by General McClellan to Annapolis to organize troops and there I saw much of the First Vermont.

After the regiment had been ordered to the front I was granted indefinite leave of absence with orders to meet the

*In our issue of April appeared "Morgans as Army Horses," by Major F. A. Boutelle, U. S. A. (retired), and here are some recollections of Brigadier General Charles H. Tompson, U. S. A., who was Colonel in command of the First Vermont Cavalry from April 24 to September 9, 1862. This was a volunteer regiment raised in the state of Vermont in the Autumn of 1861 at the instance of Simeon Cameron, Secretary of War, and was mounted on Vermont Morgan horses. "These animals," said the New York *Herald* of December 16, 1981, in reporting the arrival of the regiment in New York City, "are all of the Morgan breed and embrace hundreds of splendid specimens of the equine race." The *Tribune* described them as "of the celebrated Morgan stock." The *World* of the same date said there were over eleven hundred of them and the *Times* pronounced the regiment "in all respects the finest one raised in any of the states." There was general commendation of the Morgan horse in the army.—EDITOR *Bit & Spur.*

Vermont Congressional delegation in Washington with a view to the possibility of my assuming command of the First Vermont Cavalry. I met the delegation, among whom I remenber Senator Solomon Foot and Congressman Portus Baxter. As a sequal to this meeting I directly received orders to take command of the First Vermont Cavalry, which was then at Winchester under General Banks. Attached to General Banks personally, I found a squadron of the First Vermont Cavalry with Lieutenant-Colonel Kellogg. Practically, this detachemnt was doing only orderly duty. I told General Banks that since I was to command the regiment I would like the whole of it, and Banks granted my request and returned that squadron to its regiment.

The Morgan mounts of the First Vermont Cavalry were decidedly the best I had seen. Everybody was attracted by them. I have heard General Buford, an excellent judge of animals as well as of men, and General Hatch (who was Chief of Cavalry in the Army of the Potomac) both say that the mount of this regiment was the best in the army. General Buford, who if he had lived, probably would have rivaled Sheridan as a cavalry leader, also told me that he would as soon have this regiment of Vermont volunteers cavalry as a regiment of the regular army. It was Buford's practice always to put it in the front.

I had known of Morgans and Black Hawks, before the outbreak of the war, and owned a pair of Morgans for driving. These had originally been bought for the army, and rejected on account of insufficient size. I bought them for $90 a piece. They were about 14.2; not over that. Afterwards Monsieur Mercier, the French Minister to the United States at the outbreak of the war, offered $1,000, which I declined. Seeing my Morgans, Mr. L. E. Chittenden, then Register of the Treasury, sent to Vermont for a team. His were grays, and, except for a few in the First Vermont Cavalry, were the only grays I have seen. My pair were very dark brown, called black. Mr. Chittenden's were about 14.2, perhaps a little over. He drove them around to show them to me after their arrival in Washington.

The horses of the First Vermont Cavalry reminded me of my own Morgans. In Mr. George Grenville Benedict's "Vermont in the Civil War," occurs this statement regarding the horses of the First Vermont Cavalry: "They were between 15 and 16 hands high, as required by the government standard." This is utterly erroneous and very wide of the mark. The great majority of the horses in that regiment, in ordinary times, would have been rejected for insufficient height; few were up to 15 hands and the average was about 14.2.

While in command I assigned lessons in tactics to the officers, had recitations, and the regiment was improving. Little attention was given to the schooling of the horses, but the men became good riders. They were very lucky in the quality of horses, which greatly helped the regiment. Under my command it was continuously "on the go," and I observed that the smaller horses stood the work better than the larger, also that our regiment, with its small horses, fared much better than the taller mounts of the Fifth New York Cavalry, a regiment conspicuous for its fine horses. Our men took as good care of their horses as was possible. They were faithfully groomed, but the forage was often insufficient. This told much more severely on the larger horses in other regiments than on ours, which seemed remarkably tough. I feel sure they would have endured where any horses could, and that they would have given as good service in Arizona as in the Shenandoah Valley. One seldom finds a horse that can walk five miles an hour, but many of our Morgans could and did.

In the eleven engagements in which the regiment participated while under my command the loss of horses was considerable; and, after Banks had been driven out of the Shenandoah Vallley, we secured from the horse depot at Washington 150 to 200 mounts. These were all sorts and not very good and in no way to be compared to the Morgans.

It would have been my idea to divide the horses among different troops according to colors, and keep them so divided. It was attempted but was hardly practicable, as the prevailing colors were dark.

[NOTE.—One of the veterans of Preston's company (Comapny D) says that his comapny was mounted on dark bays

and that the light chestnuts or sorrels were in Company H, the Windham Count Company. The same authority gives as his recollection, the following division of the colors: Company A, mahogany bay and brown; Companies B and C, bright bay; Company D, dark bay; Company E, dark chestnut; Company G, gray, white and roan; Company H, light chestnut. We have no record as to the colors of the horses in the other companies.]

There was little choice as to quality between the horses of the different companies. They were a very even lot throughout. My favorite color was dark bay with black points. Next to the horses of the Vermont regiment I condiser the horses of the Maine regiment were the best. They were also small, compact and tough as knots. Perhaps they were a little larger.

NOTE.: "Regarding his article on this subject, which was reprinted in the May, 1912, number of this JOURNAL, Major Boutelle writes as follows:

"Some time ago I wrote a little screed upon the subject of Cavalry Mounts which I sent to *Bit & Spur*. When it appeared, it was cut to fit a space, apparently, and the closing paragraph so changed as to make the whole bally thing appear absurd. I have no patience with the giraffe type of cavalry horse, yet I am made to say that what is wanted for a cavalry officer is a 16½ hand horse, weighing 1,275 pounds.

"As you have republished this article, I fear all my old time friends who read it will think that I, too, have been bitten by the high jumping bug. I do admire the insect in his proper place, but not under a cavalry saddle. I enclose a copy of the paragraph as I really wrote it."

"This closing paragraph is as follows:

"I honor the public spirited gentlemen who are assisting our splendid young fellows to suitable mounts for jumping events at the horse shows; but hope that the fashionable thoroughbred jumper will not be adopted as a standard, in the cavalry service, for the reason that he is spectacular at the shows. I also hope that few will be convinced that a suitable mount for a cavalry officer should be 16½ hands high and weigh 1,275 pounds.

"My own good thoroughbred won first in the green hunters class at the recent horse show at Portland, Oregon; but if I were on earth again, which means, if I were young and with a a good cavalry regiment again, and in front of my troop, I should consider his jumping value for troop purpose no greater than that of the poorest jumper in my troop. The officers cannot lead them where his men are unable to follow.

"I do not wish to make light of jumping, or better cross country riding, for I believe nothing will develop fearless riding as will fox hunting and kindred sports."

THE AEROPLANES AND THE CAVALRY.

WE must bring to test a very dangerous opinion that is spreading more and more amongst the public, who are often ignorant of military matters. It is frequently said that "Aeroplanes and dirigibles are marvelous instruments for reconnaissance purposes, and their powers of investigation are far superior to those of the cavalry. Let us suppress the cavalry or reduce its effective force." The time has not come to reduce its effectiveness of this arm under the pretext that is part in battle in face of guns and the perfected small arms of our time has become insignificant, and that it is on the point of losing the only reason for existence—the search for information.

We shall not allow the public mind to thus go astray, and we therefore assume the privilege of executing summary justice upon this opinion and of reassuring the French cavalry.

In war the cavalry has a triple part to play:

1st. To procure information regarding the enemy.

2d. To protect the troops on march or against surprises, and to cover their movements.

3d. To intervene in battle and make success complete or to protect the retreat.

From one point of view, that of information regarding the enemy, dirigibles and æroplanes may often supplement cavalry,

but the important point is to determine clearly to what extent we shall find it necessary to employ the æroplane as it exists at present, for it is a somehwat brutal instrument which travels at a steady speed some 200 or 300 kilometers (125 or 187 miles) and returns to its shelter.

We must remember that the machine is still incapable of hovering; that even though it were we could see nothing through a fog; that we cannot even observe in violent winds; that we canot fly every day; that it is seldom, even in good weather, if it is desired to spare a valuable personnel, that flights can be made for more than three of four hours in the morning and two or three hours in the evening.

In fact, reconnaissance made by aviation is essentially rapid; the æroplane can only fly over the field observation, which is not very wide, and now and again, at some place where no one is to be seen, there may be found an hour later a body of troops out of a wood or from locality where they had been waiting for the proper moment to commence its movement.

On the other hand, a reconnaissance made by cavalry making use of both light and heavy cavalry, is characterized by a permanence of contact by day as well as by night. It has less chance of falling suddenly like the æroplane upon masses of the enemy, but by frequent contrasts with him, may succeed by successive degrees in determining progressively his apparent outline, if not his exact position.

Thus the æroplane should not replace the cavalry, even in reconnaissance work; its action should be auxiliary to that of the latter and complete it.

When the enemy is at a distance, information reported by the æroplane may give a certain amount of security; should he succeed, however, in approaching sufficiently near to be able by a night march or by an advance of his cavalry, to come into contact with troops of the first line, it is the cavalry that, with a minimum force, will enable us to assure the protection of our cantonments; it is the cavalry which will make it possible for our columns to march out without being hindered by the demonstration of cavalry provided with a few guns; it is this arm in fact, which during the fight will cover the concentration of our troops when the enemy is everywhere, and when his

enterprising cavalry is on the lookout for umprotected troops. How much would æroplanes be worth in carrying out this protecting work?

As a matter of fact we must not let ourselves be misled by progress made in technical matters; moral forces play a principal part in battle. The infantryman and the artilleryman are subject to exhaustion, to fatigue, confusion and fright, crises occur during a fight when the nerves, having reached their maximum tension, the majority of men are perpared to rush to the front or to the rear, depending upon whether they are carried away by enthusiasm or terror.

Spirited and well commanded cavalry making use of its mobility may be able to effect a surprise, and finding in front of it only harmless rifles and field guns, decide the action.

Let us hope that the matter has now been well thrashed out. The use of the æroplane or the dirigible cannot bring us to the conclusion that a diminution of our cavalry is possible. We will even go further and say that it is essential to place, without delay, our cavalry, which is too small in numbers, in condition to make a good showing before the German cavalry, which does not count less than five hundred and ten squadrons upon a peace footing.

THE STRATEGICAL ACTION OF CAVALRY.*

By Brig.-General H. de B. de LISLE, C. B., D. S. O.

INTRODUCTION.

THE employment of cavalry in war may conveniently be divided into the strategical and tactical action of this arm.

The strategical action embraces those services prior to the meeting of the two main armies, when the cavalry, with or without support, acts independently under the direct orders of

*From the *Journal of the Royal United Service Institution*, June, 1912.

the Commander-in-Chief on a special mission. This mission may be reconnaissance, or the acquisition of information about the enemy or the country in that particular zone of operations: or its mission may be to hamper the enemy during concentration; raids against his lines of supply; or the cavalry may be used to mystify and deceive the enemy as to the probable plans of its own forces.

Of these various strategical missions, that of reconnaissance is undoubtedly the most important.

Frederick the Great is reported to have said:

"*If we could be acquainted beforehand with the enemy's plans, we would always be able to defeat him, even with an inferior force.*"

Reconnaissance, or the means of acquiring information, is performed by cavalry in two distinct ways: by stealth and by force.

Reconnaissance by stealth may be carried out by scouts or patrols who avoid meeting the enemy; but approach secretly and report his movements. These small parties are usually supported by formed bodies which collect and transmit all information, and are called reconnaissance or contract squadrons or troops.

Reconaissance by force becomes necessary when such squadrons are not strong enough to go forward against any opposition which may be met.

Although reconnaissance by small bodies, if used expertly, may achieve excellent results, these will seldom be able to acquire the more important information, as the hostile army will certainly protect itself from such inquisitive parties by a screen of detachments which can only be torn aside by force.

As to the means of obtaining information by force, there exists a wide difference of opinion, and two distinct schools of thought; those who favor the principle of using all available cavalry for exploration, and those who consider this method unsound, and recommend the employment of a proportion of the available cavalry only, and that this should be supported by a force of all arms.

Our regulations are definite on this point; the view expressed by them being that some cavalry will be required for protective purposes, but that as strong a force as possible

should be detailed for exploration, and made "Independent Cavalry" for that purpose; the term independent being defined as meaning "relieved of protective duties."

Strategical reconnaissance or exploration by the Army cavalry infers the massing of as strong a force of cavalry as possible under one commander, in the hope of its being able to brush aside any resistance that may be encountered in advance of the enemy's main columns.

This principle has, since 1870, become very popular with military writers on cavalry, and, provided an undeniable superiority in cavalry is assured, it would appear quite logical to make the most use of it in this way.

This doctrine, for which Germany is responsible, has been generally accepted by other European nations, including our own; and though several French writers have recently expressed doubts on the efficacy of the system when applied to an army with a weaker cavalry, their recent regulations appear to follow the popular fashion of the day, and deficiency in strength is to be minimized by cyclist supports.

EXPLORATION BY THE ARMY CAVALRY.

Let us consider for a moment the arguments in favor of exploration by the whole available army cavalry.

1. History proves the enormous importance of reliable information, and that such information must be fought for if it cannot be obtained in any other way.

Before committing his forces to any definite plan, the Commander-in-Chief will require reliable information of the enemy's dispositions, his places of concentration, or the direction of march of his forces, and in the nature of the country between the two armies. For this information he trusts to the commander of his independent cavalry.

On receipt of his instructions, the cavalry commander moves his force in the direction which it is desired to reconnoitre. There he may meet the bulk of the hostile cavalry, and if so, on his success against it will greatly depend his ability to acquire information. If he is able to establish his superiority over the hostile cavalry, he can drive its disorganized units back on to the hostile infantry, and will then be in a

position to discover all he wants to know. If defeated or forced to retire, owing to weakness, moral or physical, his cavalry will not be able to operate in the presence of hostile cavalry without the support of the protective cavalry or of infantry detachments.

2. If successful in the cavalry duel, the independent cavalry will be able to force its way up to the enemy's protective line, which it will endeavor to brush aside, or, as it is sometimes expressed, to tear a rent in the hostile protective screen. Through this opening or rent, special scouts or patrols will be sent forward to reconnoitre the enemy's main columns.

In the meantime the independent cavalry will be fully engaged. The enemy will endeavor to close up the gap, concentrating all available troops in the vicinity for this purpose.

On the other hand, the independent cavalry must endeavor to keep a passage open for the withdrawal of the patrols who might otherwise be unable to return, or be so much delayed that their information, when received at headquarters, would have lost its value.

Having accomplished this mission of exploration, the independent cavalry will be available for other duties, but will keep touch with and closely watch the enemy.

3. It will be noticed that the defeat of the enemy's cavalry though only a means to an end, becomes almost a necessity if both are operating in the same zone, and though reconnaissance is the primary object, the importance of overwhelming the enemy's cavalry and establishing the superiority of one's own can hardly be exaggerated, for this may decide the eventual issue of the campaign.

Much has been written about the cavalry encounter during the past few years, and the best way of defeating the hostile cavalry. The means used must depend on the circumstances, and especially on ground. If the latter is favorable to a mounted attack, there is very little doubt that shock tactics, supported by the fire of hostile artillery and machine guns, will be employed; and in all European armies cavalry is being trained in masses to defeat hostile cavalry masses.

To endeavor to overwhelm the enemy's cavalry by means of fire action only would take far too long, and the delay would

militate against the fulfillment of the primary object: to gain information of the enemy's main columns. Moreover, such actions usually produce indecisive results.

If large forces of cavalry meet, the duel will extend over a considerable front, and unless the ground is very exceptional it may be expected that parts of it will favor fire action, and if so, a combination of fire and steel will be seen on the same field. In 1863, at Brandy Station, in Virginia, we have an historical example of the combination of fire and shock on the same field. Ten thousand cavalry on either side fought for ten hours; in the end the Federal force retired, but the victory was in no way decisive, and the results may be said to have been almost negative.

Although a decisive and quick victory is wanted, it is now generally admitted that it will often be advantageous to employ the fire action of dismounted portions of the cavalry to prepare the way for the mounted attack, and when the nature of the country necessitates the employment of dismounted action. The object to be attained is not only to defeat, but also to cripple the enemy's cavalry, and the quickest and best means to this end will be employed.

Of all military subjects, there is none which has excited so much interest or so much acrimonious discussion as the employment of cavalry. The controversy is not new, nor is the prominence given to it in the past ten years in any way extraordinary. It recurs periodically, and has done so for the past 200 years.

Science is progressive, and must be met by changes in tactic and organization. We cannot afford to ignore the increased power of modern weapons; but we must not fail to realize that the moral qualities of the man behind the gun remain the same. It is even reasonable to estimate the value of short service soldiers of the present day considerably below those of 100 years ago, who made soldiery a life-long profession.

In recent years there has been much intemperate matter written on this subject, and even eminent military writers of the various great powers have raised doubts as to the possibility of great cavalry success in future wars. Such views have roused intense irritation in the minds of others who hold entirely

opposite opinions. Nevertheless, our present ideas on the tactical employment of cavalry have been evolved by the amalfamation of such opinions, tempered by war experience, and the true appreciation of the constant factor, the man behind the gun.

In face of the acute feeling which prevailed in all European cavalry on this question during the past decade, it is most interesting to refer for a moment to that excellent article on "Cavalry Tactics," written for the *Times Encyclopedia Brittanica*, of 1903, by that shrewd and able writer, the late Colonel Henderson. In this article he reviews the history of cavalry, and asks what modification is necessary to meet the altered conditions of modern war? "The answer," he writes, "comes from across the Atlantic. The American cavalry, owing to their native ingenuity and the length of the war, solved the problem. It could charge home with the saber or revolver. In addition, it was so equipped that it could fight on foot as readily as in the saddle, and it was so armed and trained that when dismounted it was but little inferior to the infantry."

This article written during, or shortly after the South African War by Colonel Henderson, is remarkable in that he foresaw what it has taken European military experts some years to realize, that the successful handling of cavalry depends on appreciating at their true value the advantages of fire and steel.

OBJECTIONS TO RECONNAISSANCE BY ARMY CAVALRY.

The opponents of the modern conception of the strategical exploration by the army or independent cavalry hold just as strong views against this method as those who advocate its use hold in favor of it. Although the majority of writers in favor of the independent cavalry idea are themselves cavalry officers, a fair proportion of those who oppose them also belong to this arm. The cavalry officers who oppose the exploration by the army cavalry, do so chiefly on the ground that they think cavalry is far more important for co-operation in the battle, for pursuit, or in retreat, than in the service of acquiring information which can be procured in other ways: by secret service agents, by reconnaissance by stealth, and by aerial scouts.

Several eminent French military writers such as Bonnal, Foch, Foucart, and others, hold very decided views on reconnaissance by force, but not by cavalry acting independently.

Their arguments may be summarized as follows:

1. The independent application of force is not admissible in a strategical sense, and to risk the annihilation of one's cavalry, operating without support, is held to be as unsound in strategy as to risk the defeat of an army by attacking in detail without mutual support.

2. The doctrine of exploration by the army cavalry cannot be said to have received proof in the test of war, and untfl verified must be looked upon as unproven. It cannot be said to have been proved in 1870, for the Germans at the beginning of the war used their cavalry as protective cavalry only, until the French cavalry had lost all power of organized resistance. We cannot admit that it was tested in South Africa or Manchuria. In the last campaign, the victors, being weak in cavalry, used it for protection only. This is the course recommended by the late General de Gallifet, who held that if the effective strength of cavalry is not sufficient to divide into independent and protective, it must be kept for the latter duty. It is only fair to add that the large numerical superiority of the Russian cavalry appears to have been discounted by want of capable leaders. The Japanese, however, do not appear to have suffered from want of accurate information in spite of having had no cavalry for exploration, and of having trusted to an excellent secret service instead. Their want of a cavalry reserve, however, was much felt, and prevented them reaping fruits of victory.

3. In view of the fact that Napoleon kept his cavalry in reserve, and for special missions, and that the modern idea of the employment of strategical cavalry still requires to be proved by war, this method is held to be only a temporary innovation which will soon change again to those of Napoleon, the great master of war, who knew more about the use of cavalry than anyone before or since.

USE OF CAVALRY BY NAPOLEON.

Let us consider for a moment how Napoleon used his cavalry for strategical purposes in advance of, or detached from his army.

We find him following no doctrine or general theories, but using his cavalry for special purposes, giving very clearly defined instructions on each occasion. Not once did he send all his cavalry reserve on a vague mission of exploration. He sent only so much as was necessary to a defined place, and specified exactly what he wanted the cavalry to do.

In 1805, he sent it across the Rhine as a screen to deceive the enemy, and when the Grand Army executed its turning movement on Ulm, this cavalry, supported by two corps, acted as a flank guard. On the 2d October, the Emperor wrote to Murat: "You will protect my flank as I move obliquely to the Danube, which is a delicate operation. If the enemy intends to take the offensive, I must be warned in time to take action, and not be obliged to conform to that of the enemy."

Finally, after the capitulation of Ulm, when the army was moving on Vienna, the same cavalry was sent on in advance, supported by infantry divisions, to seize successively the crossings of the Inn, the Salza, the Tarun and the Ips.

In 1806, in the Jena Campaign, the cavalry having crossed the Frankenwald, it was sent rapidly to the Saale (supported by Bernadotte's Corps), whence reconnoitering detachments were sent on to Leipzig.

To gain a proper idea of the definite nature of the orders Napoleon issued to his cavalry we must refer to his letter to Murat, dated 7th October, 1806.

This letter is remarkable not only for the very definite nature of the instructions sent by the Chief of the General Staff to Field-Marshal Murat (Duc de Berg), but also for the manner of dealing with the demand for information. It deserves to be studied by all leaders in the field with cavalry under their orders. This arm has often had to bear the blame of any want of success in reconnaissance, but the cause has usually been due to the indefinite nature of the instructions issued to it.

At the beginning of the Jena Campaign, Murat, with three cavalry brigades and the First Corps (Bernadotte), a formed the

General Advance Guard. The position of each cavalry brigade, and the First Corps, and the strength of the Cavalry Reserve and its position, were all laid down. As regards reconnaissance, Saalfeld, Saalburg and Hof were mentioned as the points of direction and alloted to Milhaud, Wathier, and Lasalle's Brigades respectively. An engineer officer was to be attached to each of these generals to report specially on the country and roads. These three places on the River Saale are all twenty-five miles apart, and the foregoing instructions might have been thought sufficient when addressed to a Field Marshal. Napoleon, however, specifies what information he requires in the form of questions, as follows:

(i) "Is communication between Saalfeld possible and Saalburg?

(ii) Is communication possible between Saalburg and Hof?

(iii) Is communication possible between Lobenstein (10 miles in rear of Saalburg) and Grafentahl (10 miles in rear of Saalfeld?

(iv) Is communication possible between Lobenstein and Hof?

(v) What are these roads like?

(vi) Are they fit for Infantry, for Cavalry and Artillery?

(vii) What is the position of the enemy about Hof, about Saalburg, and above all on the main road to Leipzig?

(viii) What is its position about Grafenthal and Saalfeld, that is to say between Coburg and Naumburg?'

Could anything be more precise? Such questions indicate clearly on what points extra information is required, and enable the cavalry to direct its energies towards solving the answers, and not to waste energy in any indefinite service.

A further remark with reference to his reconnoitering detachments. These were generally strong parties from 100 to 200 sabers, specially selected for ability from volunteers, and largely composed of non-commissioned officers. Being all specialists and led by the best officers, they were able to achieve far more than the ordinary contact squadron. Moreover, these

detachments were usually supported at a short distance by the rest of the regiment and even by a brigade. The reconnaissance was, therefore, of a telescopic nature, such as was sometimes used by us with success in South Africa.

Napoleon himself originated this form of reconnaissance when he wrote to Lannes in 1805, "Marshal Lannes," he writes, "will remain tomorrow at Rastadt, extending if necessary to Baden, and will send cavalry reconnaissance as far as Wildbad. These will start before daylight. Two regiments will proceed six miles, the third another six miles, one squadron three miles further and a partol on the best horses the last three miles."

Later on when the superiority of his cavalry was established, such precautions were dispensed with, but in all his campaigns he was able to acquire accurate information of the enemy paigns he was able to acquire accurate information of the enemy's forces, while masking his own movements by means of impenetrable screens.

4. To resume the arguments against the cavalry exploration, some writers hold that however important it is to acquire information of the enemy, reconnaissance by force, unless successful will damage the *moral* as well as the effective personnel to such an extent that a defeat of the army cavalry may lead to a defeat of the army.

5. Even if successful, the loss in men and horses and the fatigue of the remainder must lower the fighting value. Long distances must be covered before the independent cavalry gains touch with the enemy's columns, a fight is certain to take place; for days the army cavalry will have no rest, and at night the services of protection will be very severe on men and horses.

As the armies approach, the cavalry will have to clear off to a flank, often at a considerable distance, and when wanted in the general battle or for pursuit, may be physically unfit for this work.

6. Aerial reconnaissance is a factor which must be considered, though no writer would wish to see cavalry reconnaissance abolished on this account. Aeroplanes cannot be entirely depended on yet for acquiring information, though recent developments tend to show that every year they are becoming

more reliable, and we may expect that the time will come when cavalry will be used more to verify information acquired by Air Scouts, than to procure this information primarily.

7. There is a tendency among several military writers to think that the duty of confirming reports of ærial reconnaissance might be entrusted to the protective cavalry, which is already responsible for close or tactical reconnaissance, and with little more fatigue could push their reconnoitering detachments further to the front. This would leave the army cavalry in the hands of the Commander-in-Chief for special missions, such as operations against communications, screening a maneuver, for co-operation in the general battle, for pursuit or to cover a retreat in case of a reverse.

8. In the case of the weaker cavalry, these arguments apply even more forcibly, and one writer describes in detail the possible effect of this last suggestion against the enemy's stronger army cavalry used in exploration.

He imagines the former army marching on a broad front with columns five to ten miles apart, covered by advanced guards of all arms, and the first line of security formed by the protective cavalry. This again is covered by a line of reconnaissance squadrons about fifteen miles apart with their patrols in front, each squadron supported by a company of cyclists.

From the head of the columns to the partols would certainly be twenty-five miles and might easily extend to fifty miles.

As the hostile independent cavalry advances in a concentrated formation, also marching on several roads, it would be reported by the patrols, and meet with some resistance on reaching the line of squadrons with their cyclist supports. More delay would occur at the line of protective cavalry which would normally fall back on the line of the advanced guards.

In the meantime those reconnoitering squadrons not held up by the independent cavalry would continue to push on to acquire information by stealth.

On reaching the infantry advanced guards, the independent cavalry would have to fight in order to break a rent in the protective screen, and this fight would necessarily be a serious

affair and on a comparatively wide front, necessitating an extensive dismounted action.

It is at this point that the Commander-in-Chief of the army attacked would have a favorable opportunity of using his reserve cavalry with signal success. While the hostile independent cavalry has been marching for days, on to outpost at night, and continually engaged for at least twenty-four hours, the other reserve cavalry has been kept in hand, and billeted in rear of the outpost line. Tactical reconnaissance would have placed at the disposal of the latter cavalry commander all details regarding the country, and about the hostile cavalry mass. Although the weaker cavalry, his would be stronger than the mounted reserve of the enemy, and if the latter were attacked with rapidity there would be no time for the latter to withdraw from the fight the units already dismounted.

Should the force which keeps its cavalry in reserve employ a general advanced guard, the risk to the hostile army cavalry would be even greater. It must either attack the general advanced guard or pass it by. In the latter case, it might find itself held up in front by local advanced guards, attacked on both flanks and even its retreat cut off by the reserve cavalry pushed out for that purpose, assisted by the general advanced guard.

9. The writers I have quoted fully admit that with the stronger cavalry, the German doctrine regarding its employment is perfectly logical, but do not approve of the weaker cavalry being sent out unsupported to meeet it, with every chance of being overwhelmed, and so being useless for the time it will most be required, during and after the battle.

There appears to be much worth considering in these arguments, which are founded on the importance of maintaining at its highest fighting value a large cavalry reserve for use during and after the battle.

COURSES OPEN TO THE WEAKER CAVALRY.

At the same time, these ideas do not solve the difficult problem, how to employ successfully the weaker cavalry against the stronger. If the weaker cavalry is never to risk defeat, it will rapidly lose its fighting value, and become useless in the

hands of the Commander-in-Chief. We have many historical examples of cavalry sheltered behind the infantry outposts until it was unfit to act alone.

From the first, therefore, cavalry must learn how to maintain its own security even when opposed by a stronger force of this arm.

There are several ways open to the weaker cavalry. The rifle in the hands of the cavalry gives it a defensive power never yet possessed, and a delaying power still hardly realized. It is true that in the open country, other things being equal, the numerically stronger cavalry will probaly win, and may even achieve a very decisive victory. The weaker cavalry will be wise, therefore to advance by a line more suited to the use of the rifle than the sword, pushing its own protective reconnoitering detachments sufficiently far to the front flanks to give the main body of the cavalry time to reach a suitable position where its numerical inferiority may be compensated by the advantage derived from the ground.

If the proportional strength of the two cavalry forces is very marked, the weaker must be supported by strong bodies of infantry, one or more divisions following as a *point d'appui* on which to fall back if hard pressed, or with which a forward movement may be carried out.

This combination partakes of the nature of a general advanced guard, a form of reconnaissance which was often used by Napoleon.

The action of a force of this nature has not received as much attention in this country as it deserves, and as far as I can discover we have no military literature of a recent date to assist us.

We have, nevertheless, an interesting and recent example of our own in which the whole of our independent cavalry was closely supported by a division of infantry. The example to which I refer, one closely studied by foreign critics, is that of the relief of Kimberly by General French's cavalry division.

We are inclined to look on this only as an incident of which we are proud. Foerign writers, however, regarding it from a military aspect, describe it as a brilliant feat of arms. To have turned a defence, and not altogether a successful defence, into

an offensive attitude is always a difficult feat in war, and on this occasion the way Field Marshal Lord Roberts massed his cavalry for a strategical purpose, supporting it with the Sixth Division, is looked upon as a masterly act which saved the nation from disgrace, and proved to the world that the national character of dogged tenacity of purpose still exists.

CAVALRY IN BATTLE.

There is also a wider difference of opinion among military writers regarding the employment of cavalry in co-operation with the remainder of the army in battle. Some think cavalry can be and should be used on the system that Napoleon adopted. Others believe that modern weapons will make this impossible, and think that the cavalry should assist their infantry in the firing line. Our own text book advocates the massing of the cavalry under the orders of the Commander-in-Chief for the moment when it can be slipped with a reasonable chance of success, and indicates a flank as a most suitable situation for it.

All great leaders have made the best use of their cavalry, and we canot do better than consider Napoleon's method for a moment. He had the utmost faith in cavalry during the battle but he bound himself by no doctrine. "Cavalry charges," he wrote, "are equally effective at the beginning, in the middle, and at the end of the battle."

At the same time his usual custom was to reserve the cavalry for the great culminating blow, or the "evenement" when the enemy was up to his last reserve.

Sometimes he massed his cavalry on a flank, sometimes in the centre, and sometimes it was even distributed along the line. At Austerlitz, he placed the whole, except that of the Imperial Guard, on the flank, under Murat. At Eylau it was concentrated in the centre; and at Friedland it was distributed in four groups, but that on the left flank was the strongest and consisted of two divisions.

His faith in the importance of a strong cavalry is evident. In 1806, his cavalry was 65,000 strong out of a force 325,000, or in the proportion of one to five. Later, on being dissatisfied with the strength of his cavalry, he raised it to nearly 100,000, both officers and men being carefully selected.

It is no exaggeration to say that his success during the years that the French Army was at its zenith were chiefly due to his excellent and numerous cavalry.

At Marengo, it was the charge of a few squadrons under Kellerman which converted a disaster into a decisive victory, and brought about the capitulation of the Austrians under Melas.

At the battle of Austerlitz, it was his cavalry under Murat which, by repeated charges, enabled Soult and Bernadotte to reach the plateau of Pratzen; and afterwards it was the famous charges of Rappe and Bessiers, with the cavalry of the Guard which broke the counter attack of the allies and completed the victory.

At Eylau, the eighty squadrons of Murat decided the issue of the day, piercing the center of the Russians when the French center was threatened by them.

At Essling, the repeated onslaught of the cavalry divisions under Lasalle, Espange and Nansouty enabled the two corps under Lannes and Massena, some 30,000 strong, to maintain a defence for a whole day against the Austrian Army of 80,000 men.

At Wagram, at Borodino, it was again the cavalry which decided the victory.

On the contrary, at Lutzen, Bautzen and Hanau, when the Imperial Army had been deprived of the bulk of its cavalry, the French certainly won the fights after considerable difficulty, but were powerless to make victory decisive, or to reap the advantage such victory should bring.

In spite of the fact that we have no historical examples of decisive victories without the assistance of cavalry during and after the battle, and many examples of the converse, the question as to whether the same thing will be possible in the future must remain unanswered until the next great war.

In my own mind, I am confident that a cavalry like the cavalry of Napoleon, comprising the most dashing officers of the army, and men, who, on numerous battlefields, showed the most supreme disregard of death, will still be able to achieve the same brilliant results.

POINTS IN FAVOR OF THE CAVALRY RESERVE.

1. When we read the account of the campaign in Manchuria, we find infantry on both sides, without ammunition, fighting hand to hand, and even using stones as missiles. So much ammunition is now used, and the difficulty of replenishing it is so great, that we may expect to find armies in the future, towards the end of the battle, facing each other, but unable to bring matters to a conclusion for want of it.

2. Another point in favor of the Cavalry Reserve is the fact of the youth and inexperience of modern armies. Veteran soldiers, with confidence in their officers and in their own steadfastness, may be trusted to remain firm in the face of a cavalry onslaught. It is very doubtful if continental armies of one and two year men, who have no experience of war, can be expected to behave as well, and the threat of a cavalry charge may produce a panic.

There is a point, however, which, like other countries, we are also inclined to overlook. Cavalry, to be successful, must be led by fearless commanders, and such commanders of cavalry should be young. The success of Napoleon's cavalry was, in a measure, due to the youth and personality of the leaders. Take, for example, the French Cavalry Corps, which, from 1807 to 1812, Napoleon used as his Cavalry Reserve. Murat was in command, Lasalle commanded a division, and after his death was replaced by Montbrun; Colbert was one of the brigadiers. Of these famous leaders, Montbrun was the eldest, and he was under forty years of age, and Lasalle was only thirty-five. Their personality, however, was more remarkable than their youth. Their disregard of danger or losses, provided they carried out their orders, permeated down to the junior ranks, and made their cavalry invincible, until the snows of Russia destroyed it.

Then consider their disregard of losses. The German cavalry in 1870–1871 lost 3,000 cavalry out of its total strength of 63,000. Napoleon at Eylau and Essling alone lost 2,000 cavalry in those famous charges. With well handled cavalry, losses in battle are no bad test of bravery.

3. Then again, we must consider the increased moral depression which takes place during a moder battle. It is a far greater strain to submit to hostile fire when unable to see or reach the enemy.

Most of us have seen something of this in our small wars; cases of men being utterly prostrated after lying in the open for twelve hours and being sent to hospital in a state of physical collapse. We have also witnessed cases of panic caused by the possibility of a charge of savages armed with spears. We read of similar cases of physical exhaustion and panic in 1870, during the American War, and in the small wars in Algeria. This will always occur in war, and the younger the troops the more easily will they give way to the strain, or to the instinctive fear of cavalry.

It is on such occasions a well led and intrepid cavalry may find a favorable opportunity for a great success.

4. The idea of using the Cavalry Reserve to strengthen any weak part of the firing line is no doubt very attractive, as its mobility enables it to move to any weak position in so short a time; but we must remember that once committed to the firing line, cavalry cannot be used for any other purpose. Even in case of a victory, to re-organize it for pursuit will take much time, and this loss may be fatal. Moreover, unless fresh, men and horses will succumb to the fatigue of pursuit, which is more exhausting than any of their other duties.

To discuss the question of raids, and the means which cavalry employs in mystifying the enemy, would take up too much of your time today, and curtail too much the discussion which I hope will follow my lecture.

I have discussed cavalry in reconnaissance, acting either independently or as part of a general advanced guard, and cavalry in co-operation with other arms during and after the battle.

These are the chief duties of cavalry, and the commander who possesses an arm proficient in these will find himself not only relieved from his chief anxiety, but will soon realize that the spirit of intrepid self-sacrifice of this arm will raise the *moral* of his army, and enable it to succeed against an enemy, numerically stronger.

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We who have faith in cavalry are confident that the next great war will confirm the truth of the famous remark of Frederick the Great, "*In war success depends on the superiority of one's cavalry.*"

INFANTRY OFFICERS AT SAUMUR.*

[*We have announced in "La France Militaire," of October 8th, that the Minister of War has decided to send to Saumur a certain number of infantry officers leaving the École de Guerre under the best conditions. These officers will pursue there during six months the course for lieutenants. In giving today, in extense, the ministerial circular relative to this dedision, we hope to see the test of a close union between two sister arms give the best results.*

At the moment where the revision of the cavalry regulations is ended, and that of the infantry is beginning, it is hoped that a close alliance will be brought about at Saumur between cavalrymen and some selected infantrymen, and that it will have a happy influence upon the interpretation and application of these regulations.]

In defining the use of combat and the use of the cavalry, the committee on the new regulations of this arm has affirmed, as a fundamental principle, that "the circular should always beiused in intimate connection with the other arms and in their interest."

More than in the past, the cavalrymen will co-operate henceforth in the infantry attacks, not on the border of the battle, but on the terrain itself, against the same adversary, with a will to aid the infantry, by all means, on horse or foot.

With a view of developing this camaraderie of combat and for guiding the cavalry in the difficult road of combat on foot pushed to the assault, it has semed advantageous to favor the admittance, in the staffs and the regiments of this arm, of particularly gifted infantry officers and riding a horse energetically.

The minister decides, therefore, that a certain number of infantry officers, good riders and selected from the best elements of the class leaving the war academy, shall be sent every year to Saumur to take up there the course of instruction for lieutenants for the period of six months.

*From "La France", October 12, 1911.

For this purpose, the lieutenant general as chief of the general staff proper, the president of the technical committee of the general staff, will forward to the minister, every year on October 5th, at the latest, a list of recommendarions in favor of infantry officers fulfilling the requirements for pursuing this course with benefit.

This statement of recommendations will contain a minimum of four officers; it must indicate for each officer, the standing obtained on leaving the war acaedmy, his aptitudes from the point of equitation and a preference number. The minister will definitely pass on these recommendations before October 10th.

The officers designated will be attached as *stagiaires* to the general staff of a cavalry division which they will select at the moment of their leaving the war academy, under present conditions, from which they will be detached during the term of their course of instruction at Saumur.

This course will commence on January 15th, that is when the officers take leave from the war academy. It will end on July 15th. For the officers of the tour it will be in the cavalry arm. For the probationary duty in the artillery it will be accomplished under existing conditions.

In the pursuit of their career, these officers of the infantry who have followed the course of instruction will be called to attend the course of superior officers at Saumur and complete a tour of one year in a cavalry regiment. The latter period will be served either as captain or as major, but only when the officer will have exercised the two years of command required in his arm.

During their term at Saumur, infantry officer will receive instruction in horsemanship corresponding to that of lieutenants of cavalry.

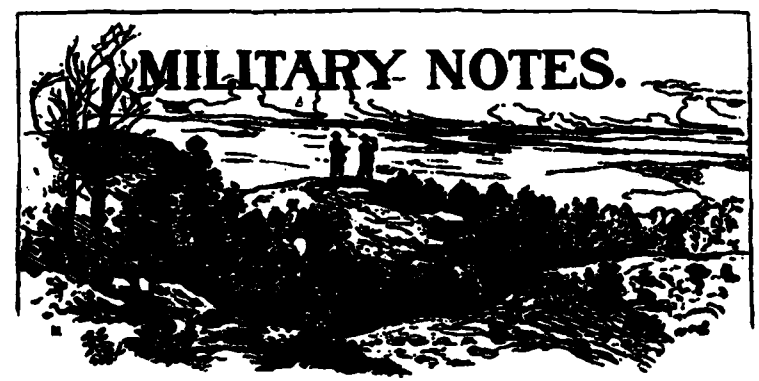
They will be taught all the detils of a general instruction, lectures, questions, written work. In the meantime, they will participate in the practical exercises in tactics and will perform, as concerns everything in the infantry, the functions incumbent

on the professors in charge of the course of this arm. They will take part in all practical exercises of military instruction of whatever nature they may be. They will be employed as instructors in all the drills that have relation to the use of cavalry in an engagement on foot. At the end of the course, infantry officers will not be the object of any graduation. They will be noted by the general commanding the school of application, who renders an account to the minister:

1. Under cover of the general staff of the army, section of personnel of the general staff, as to the proficiency obtained by each officer as far as it concerns his personnel instruction.

2. Under cover of the general staff of the army, bureau of military operations and of general instruction of the army, as to the results achieved from the standpoint of general cavalry instruction.

MESSING.



THE SERVICE COAT.

The Editor:

IN the May number of the JOURNAL you publish under the head of "Military Notes" an extract from the *Broad Arrow* on the subject of uniform that is so sensible and applies so well to our own uniform that it should commend itself to every officer who is compelled to wear the present uncomfortable and unsuitable uniform.

It seems that every time an officer goes to Europe he returns with some new idea on uniforms and if he has sufficient authority it is tried on the army. Some of these ideas are good and some bad, even ridiculous, as for example the side spring shoe, Wellington boots, box spurs and trousers strapped down, which were inflicted on us about 1903. Many of these ideas appear to have been adopted by us because they were English, or German, or French, without considering whether the articles are worn by those people because they are suitable or comfortable, or on account of tradition. Not being bound by tradition or other necessity, we should not adopt anything unless it is comfortable, suitable and healthful.

I have for a long time been convinced that our present service coat does not conform to the above conditions. This was particularly impressed upon me during the four months in camp at San Antonio last year. About three months ago I had a coat made according to my ideas and I enclose herewith photographs of same. This coat has been exhibited to the officers of the Ninth Cavalry, and they are practically unanimous in the opinion that it is a great improvement over the present coat, not only in comfort but also in appearance.

SIDE VIEW.
O. D. shirt and black tie.

SIDE VIEW.
White collar and tie.

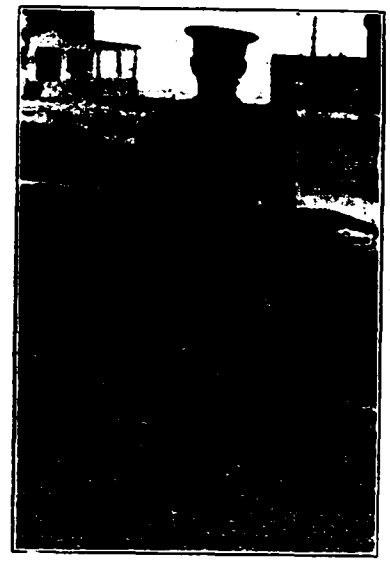
The following advantages are claimed for this coat:

1. Comfort. Our service uniform is our working uniform and comfort and suitability to the work should be the primary considerations.

Who ever heard of a working man binding up his neck in a high close fitting collar. No one who has not worn the uniform continuously in the field, in garrison and in the office can appre-

ciate the discomfort endured by the Army on account of the high collar. The Uniform Regulations prescribe that "except when in the field, at inspection in field equipment, drill, target practice, or on other duty involving physical exertion, officers will wear white cuffs and a plain white standing collar or white stock." The olive drab shirt is worn on the excepted occasions. In order to present a good appearance the present coat collar must fit the white collar closely, without falling away or

FRONT VIEW.
O. D. shirt and black tie.



BACK VIEW.

standing out from it, consequently the linen collar is held more or less rigidly by the coat collar and is not free to move as the wearer moves his head.

This causes a great deal of discomfort, particularly to an officer who is sitting at a desk the greater part of the day. This pressure of the collar against the neck is not only uncomfortable but is injurious to health. With the coat which I have designed the linen collar is not held rigidly by the coat collar, but

is held only by the soft shirt and is free to move as the wearer moves his head. A lower collar can be worn with this coat than with the present style thus adding to its comfort.

But the geat advantage of this coat is that any kind of shirt and any collar can be worn under it with comfort and still present a good appearance, while the straight linen collar is the only one that can be worn properly and present a good appearance with the present style of coat. With the present coat the olive drab shirt can be worn in one of three ways:

FRONT VIEW.
White collar and black tie.

(*a*) With the collar turned up. In this way the ends of the collar fall over at various angles, the part above the coat collar settles down in wrinkles and the general appearance is untidy and slovenly.

In warm weather the shirt collar worn closely about the neck is very uncomfortable and it is injurious to health at any season.

(*b*) The shirt collar may be turned up, then folded over so that the folded edge shows slightly above the coat collar. This presents a better appearance than the first style, but here we have several thicknesses of flannel around the neck under a coat collar that was built to accomodate only a linen collar. Consequently it is very uncomfortable on account of being too tight and also on account of the heat.

(*c*) The shirt may be unbuttoned at the top and the collar folded under so it does not come around the neck under the coat collar at all. This only transfers the thickness of flannel to another place and makes an uncomfortable fold at the base of the coat collar. It is necessary to wear something around the neck under the coat collar and whatever is worn is generally unsightly, or uncomfortable, or both. Contrast these methods of wearing the flannel shirt with the natural, normal, comfortable way as shown in the photographs. This combines not only the maximum of comfort, but also a neat appearance which cannot be obtained with the present style coat.

2. Suitability. The service uniform is our working uniform and no man can do any kind of work properly with his neck bound in several thicknesses of wool. This coat is suitable for all kinds of work on all occasions while the present style is not. This unsuitablility has been recognized by prescribing a sweater for wear in the field. The sweater is comfortable but that is its only recommendation and I have yet to see the officer who favors its use as an outer military garment.

3. Health. The high collar of our present uniform is decidedly injurious to health for it interfers with the proper circulation of the blood which in turn causes sunstroke in hot weather, headache, weakness of the eyes, deafness and falling of the hair. The undue thickness of material about the neck makes the throat tender and causes colds and other throat troubles.

4. Appearance. With a white shirt and collar and a black tie we have a great improvement in appearance over the present style of coat with only one fourth inch of white collar showing above the coat collar while with the olive drab shirt the improvement is easily apparent to one who has observed

the various uncomfortable, untidy and unsightly ways in which this shirt is worn with our present style of coat.

The objection has been made that this coat is not "military." If it is not, then is the flannel shirt worn without a coat military? Is the sweater military? What is meant by "military" and is a high, uncomfortable collar essentially "military?" The high collar is a relic of the days of armor. The reason for its use passed out of existence long ago and the high collar should have gone with it.

The standing collar is hard to fit to a coat and three-fourths of our misfits are due to the collar not being set on properly. The turn down collar is easier to fit and our present coat can easily be changed to this pattern.

There are several other changes that would be desirable. There is no reason why an officer who sits at a desk all day should be compelled to wear breeches and leggins, or boots and spurs. They certainly do not increase his efficiency. Why should an officer be compelled to wear spurs at any time except when attending mounted formations with troops.

The mess jacket is a garment which has no legitimate place in our service, but fortunately we are not compelled to wear it.

C. E. STODTER,
Captain and Adjutant Ninth Cavalry.

FIELD GLASSES.

The Editor:

When in Hong Kong recently, I was able to purchase a field glass which is so satisfactory that I have thought that others might wish to know of them.

It is called "*Silvaniar*" and is made by Carl Zeiss of Jena. It is a 6-power, prismatic binocular, weighs 23 2-5 ounces and has a field of view of 150 yards at 1,000 yards. It is mounted in a fair leather case of superior quality and workmanship.

The only objection to this glass is its weight which, for a mounted man, is more than compensated for by its other good qualities.

Although rated as a six power glass, the great amount of light entering makes the object so distinct that it is difficult to determine the difference in magnifying power between this and an eight power glass.

Its large field of view enables it to be used from such an unstable platform as a horse's back and enables one to quickly pick up swiftly moving objects. Also, the large amount of light entering the object lens allows it to be used in a dim light and makes it a good night glass.

It is an universal focussing glass, enabling it to be used instantly on being applied to the eye. The selling price abroad is 150 marks or about $37.50. Mine cost me $36.00, gold in Hong Kong. It sells for $5.00 more than the similar 8 power glass.

ALONZO GRAY
Major and Inspector General.

WATERING THE HEATED HORSE.

All good horsemen will fully agree with Veterinarian Hill, of the Field Artillery, who wrote under the above heading in the May number of the CAVALRY JOURNAL, that no harm will result from offering a heated horse all the water he may desire, provided the temperature of the water is not below 80° F.; but not one will approve of the methods he has observed of cooling heated artillery horses, viz: tying them on the picket line, or rubbing them down and standing them in the stable.

As the expenditure for the necessary apparatus to bring the drinking water at all stations and camps to the proper temperature for the use of heated horses, even during the summer season, is prohibitive, the suggested scheme for taking the chill off water intended for these animals is of doubtful value to our service. It is believed that the dictum of *never water a hot*

horse is a sound one, principally because it eliminates the use, and the abuse, of the dreaded cold water at a time when it undoubtedly is dangerous to the animal.

Our great grandfathers of the military service realized the danger of permitting the trooper to use his judgment in this important matter of wateriug heated horses; therefore they considered it preferable that a heated horse should suffer more or less from thirst for half an hour or so until *properly* cooled off, to allowing him to imbibe copiously of water of a questionable temperature and perhaps suffer in consequence of the rapid lowering of internal body temperature induced thereby.

For the average soldier man with a heated horse, the teachings of our great grandfathers in this particular case must continue to be, in the service, at least, "*gospel truth.*"

GERALD E. GRIFFIN,
Veterinarian, Third Field Artillery.

THOROUGHBRED AND TROTTING BLOOD.

The following extracts from letters that have appeared in the "*Stock Farm*" are written on a subject that should be of interest to every officer who is interested in blood lines. They not only show the origin of the trotting horse but also how much he is indebted to the thoroughbred. The writer, Mr. John E. Madden, of Hamberg Place, Lexington, Kentucky, is one of our best authorities on this subject and as the question of the best horse is now being agitated, it is thought opportune to give his views.

"I was one of the guests at the Sportsman's Dinner which was held at the Waldorf Astoria February 15th, when Mr. Belmont made his reference to the trotter, and I was surprised at his thorough knowledge of the subject—the present day trotters as well as those of the past—as I believed him to be entirley absorbed in the thoroughbred.

"I doubt if many will agree with you in your criticism of Mr. August Belmont's address. The infusion of 'thoroughbred blood,' as Mr. Belmont states, has accomplished wonders for the light harness horse of today, and I feel certain that you did not understand him. A number of our trotting horse friends think that a pedigree is built and a breed established in three or four generations. If this were true there would be no object in thoroughbred people trying to keep their strains pure.

"Because a short bred horse makes good is not an argument in favor of short pedigrees, but, on the other hand, it is an argument in favor of what a few crosses of blood will go for cold strains and there are too many of our present day champions that have thoroughbred blood in their veins for me to take the time and space to dwell upon it.

"I quote you: 'He retards rather than advances the speed of the trotter and has always done so.'

"I quote you again: 'For general utility purposes, the less thoroughbred blood the better.'

"And I quote you again: 'The speed of the American trotter, if it has been influenced in the least by heredity, and who can doubt it, must have come from trotting strains and from that alone.'

"I quote you again: 'It has been shown very clearly by the performances of the great trotters of recent years that the best results come from trotting crosses, and that the thoroughbred has never had the slightest thing to do with making speed.'

"Now, Hawley, what do you call the great trotters of recent years? Have you in mind the Hiatogas, the Morgans, the Pilots, the Blue Bulls, the Bashaws, the Clays and Royal Georges?

"Years ago they did form more or less of the warp and woof of the trotting world, but they are disappearing as fast as the Indian.

"When the test of reducing speed was applied from generation to generation, and the value of each representative was fixed by actual performance, all of them had representatives while speed rate was in the 2:20's, or a few seconds under that mark, but when it dropped into the teens and finally to 2:10 or faster, the superiority of the grandson of Imp. Messenger,

thoroughbred, (I refer to Hambletonian 10) became apparent, and after being crossed with mares of all other families or bred back of itself, the Hambletonian lines improved in quality and increased speed capacity with each remove from the parent stem until its firing line blazed with the names: Dexter, Goldsmith Maid, St. Julien, Jay-Eye-See, Maud S, Nancy Hanks, The Abbott, Cresceus, Lou Dillon, Hamburg Bell and Uhlan, all champions and all male line descendants of the old 'Hero of Chester,' the grandson of a thoroughbred.

"From your article one would be led to believe that the thoroughbred blood was a million miles away from the great trotters of today.

"Has it occurred to you that Hambletonian 10 is no further away than one remove from the live wire of today, Baron Wilkes? And only two removes is the other live wire of today, Bingen. Can you call Hambiltonian 10 anything less than nearly all thoroughbred?

* * * * * * *

"With all the thoroughbred blood in Hambletonian 10, and with all the Hambletonian crosses in the phenomenal two-year-old mare, Native Belle, record 2:07¾, and that wonderful three-year-old, Colorado E, record 2:04¾ which performances were during the year 1909 and 1910, respectively, to what blood will you give the credit of such phenomenal performances? If you will not credit the infusion of thoroughbred blood, as Mr. Belmont says, you surely cannot rob Imported Messenger of the part he played in these great youngsters.

"As the foundation of the present day great trotter was thoroughbred blood, with many additiional infusions, is it not preposterous to say that the thoroughbred could have had a deterrent effect on the speed of the trotter?

"It is impossible to say where the speed came from, but as there is more thoroughberd in the trotter than any other blood, the credit for sped giving qualities should be meeted out accordingly. For the most part the trotter of today is the result of horses nearly thoroughbred having been moulded to the trotting action.

"The thoroughbred Margrave blood did not retard speed apparently in the descendants of Edward Everett, or the Imp. Australian and Margrave blood Alma Mater's progeny, or the Endorser in Expressive, or the Enquirer in Whips, Sam Purdys' fastest son, Charlie C, 2:13½ was out of a thoroughbred mare.

"Californian Belmont, a thoroughbred horse, got the dam of the great Directum 2:05¼, and his blood is in fast trotters from that state.

"The third dam of Ethel's Pride 2:06¾, is Little Miss by Imp. Sovereign, and so on down to the Layton Barb mare, while the second dam of Fanella was by A. W. Richmond, and her third dam is also by a thoroughbred horse. A thoroughbred mare produced Palo Alto 2:08¾.

"These are few instances out of many.

"In breeding to Hambletonian you are practically inbreeding to thoroughbred blood.

"Why did not inbreeding to the Clays succeed? Or the Morgans and other old-time trotting families? The trotting line in them was longer and stronger than in Hambletonian.

"It is a significant fact that in breeding to the horse carrying the largest quantity of thoroughbred blood has given *us* the *fastest trotters.*

"Thoroughbred blood is not only the foundation of the trotter but of the Kentucky saddle horse.

"The saddle horse is largely the result of moulding thoroughbred blood to gaits suitable for riding purposes, as the same blood trained to harness action has given us the present say great trotter.

"Thoroughbred blood is adapted to more uses than any other blood, because it begets the many advantages from a long line of selected ancestry.

"Now, name the tap roots in the next issue of your paper of the live trotting strains of the present which you have in mind, and which do not 'stand pat' on thoroughbred lines in every cross that is not marked unknown.

"Now what do you attribute the speed or a trot of two mules in a coal cart in Lexington to which you refer? Do you

credit the jack that sired them, or do you give credit to the thoroughbred mares they are out of?

* * * *

"It must also be admitted that the rapid progress made in producing trotters has come about through the free use of thoroughbred blood as a foundation, as commented on by Mr. Belmont, as no horse can carry a high rate of speed over a distance of ground and repeat without a few crosses of thoroughbred blood to give the capacity to go on. For instance, if the quarter horse is a production of hot and cold blood, what is it that anchors him, is it the hot or the cold blood?

* * * * *

Ninety per cent. of the trotting horse people think that a breed is established in three or four crosses. We have with the assistance of the horseshoer and trainer, whose skill, patience and resourcefulness succeedeed in keeping a horse on the trot with even less than that, but if you will read Darwin carefully you will find that it will take more crosses to overcome the habits established by centuries of mating.

What I want to impress upon you is that the thoroughbred blood gives the capacity to go on. It is the motor and you will find it back of all great trotters. In many it is close up; in others remote, but it is there. There are no exceptions. It was also known that Imported Messenger and his sons were siring trotters long before the Register was established as is evidenced by a statement of that fact in a book published by Captain Thomas Brown, in Edinburgh, Scotland, in 1830.

* * * * * *

RIDING SCHOOL AT STROMSHOLM, SWEDEN.

By an Officer Abroad.

This school has for its object the furnishing of a more complete training in equitation for young cavalry officers and a limited number of engineers and field artillery officers. The official force consists of a commandant (Major of Cavalry) and four assistant instructors, cavalry officers of the rank of captain or lieutenant, one of whom acts as adjutant of the school.

The student officers number twenty-five (25) of the following arms of the service at this date:

Artillery	4
Cavalry	20
Engineers	1
Total	25

Every cavalry officer of the Swedish Army must take this course before he can be promoted from under lieutenant to lieutenant, so that every cavalry officer has the following training:

As cadet at Umea Cavalry School	1½ years*
Service as cadet at the military academy at Carlberg	1½ years
Service as officer at Stromsholm	10 months
Total	3 years, 10 months

Stromsholm was selected as a place for the riding school on account of the remount station in the vicinity and that one of the two government stud stations of Sweden has been located there since the time of Charles XI, which made a number of horses always available for exercising purposes. Also there was a Royal Castle that was not needed by the Royal Family, that could be utilized for housing the student officers.

*Includes service with the regiment, in which he shall become officer, as private or corporal during the summer months.

The buildings consist of four stables, two riding halls and one hall for coaching instruction.

The horses available and which are required to be ridden each day by the student officers are the following:

Government stallions	90
Government horses, 25 four year olds; 25 five year olds	50
Private horses—two for each officer	50
Total	190

Personnel for stables—fifteen soldiers not fit for active service and ten civilian grooms.

Each student officer has six horses that he must exercise daily except Sundays and holidays as follows:

Two stallions, school riding in the riding halls one hour each	2 hours
One government horse, four years old, to train in the rudiments of equitation	1 hour
One government horse, five years old, to train for cross country work and continue the training of the previous year	1½ hours
Two horses, private mounts, during the summer steeple chase work, during the winter training as a hunter	2 hours
Total	6½ hours

These six and one-half hours the student officer actually spends in the saddle.

His day is divided as follows:

Breakfast	6:45.
Riding	7 A. M. to 11 A. M.
Lunch	12 M.
Riding	1 P. M. to 3:30 P. M.

Lesson in one of the following subjects: Art of War, Hippology, Horse Shoeing, Use of Cavalry Arms and Gymnastics from 4 P. M. to 5 P. M.

The officers are required to pay one kronor (twenty-six cents) per horse for forage for their private mounts.

To encourage competition there is a yearly steeple chase of students officers where prizes of considerable value are offered chiefly from private donation, the government, however, allowing 400 kronor ($104) for this purpose.

The stallions mentioned in the foregoing belong to the remount station. Of the ninety, thirty are English and of the remainder about thirty German (from Hanover) and thirty Swedish.

These stallions are sent to different parts of the country early in April for breeding purposes (the other station is in the south of Sweden where the government owns about 200 stallions). The government charges ten kronor ($2.65) for foal from ordinary stallion and twenty-five kronor from a thoroughbred. These charges are very small and do not go far in paying the original cost and care of the stallions. In Sweden it is deemed as money well expended and the sole way to obtain good cavalry mounts and to improve the type of horse. That this method has proven of great advantage cannot be doubted. The government will pay at a maximum of 1,000 kronor ($265) for the colts, provided they fulfill the government requirements. These young horses are purchased at the age of two and one-half to three years; assembled at the remount stations, where they remain for about a year and they are then distributed to the various regiments.

These remount stations are under the supervision of a captain of cavalry, assisted by a veterinarian and the necessary number of men to feed and water them. No effort is made to train the horses at the remount stations. They are simply assembled there. They are purchased a year in advance of the distribution to assist the breeder. It is from these horses that twenty-five are sent each year to the Riding School for the young officers where they remain two years and are then sent to the regiments fully trained.

Horses in Sweden mature at a later age than in America on account of the severe climate, consequently they are not sent to the regiments until they have attained five years. A four year old in Sweden equals about a three year old in America as

to his growth and strength. The most hardy horses of Sweden come from the Island of Oland. This is due to chalky formation of the earth and that the horses have a larger grazing ground.

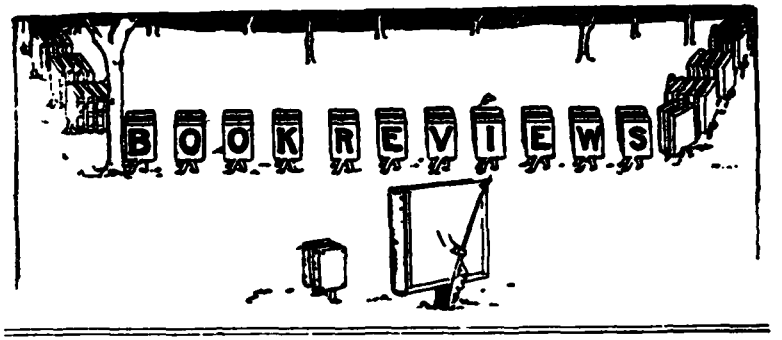
The discipline of the school is in the hands of the commandant who has rarely any occasion to resort to any disciplinary measures.

While visiting this school I had an opportunity to observe their annual prize competition in which some of the young officers raced for their first time, and the enthusiasm and interest proved clearly to my mind that this steeple chase work is good for the mounted service. Of the forty-one entries only one fall occurred. The obstacles were those decided upon for the Olympic games.

The program was as follows:

No. of event.			
1	Steeple Chase,	2,500 meters,	8 entries.
2	Steeple Chase,	3,000 meters,	8 entries.
3	Steeple Chase,	2,500 meters,	7 entries.
4	Steeple Chase,	3,500 meters,	5 entries.
5	Steeple Chase,	2,500 meters,	6 entries.
6	Steeple Chase,	3,500 meters,	7 entries.

The only thing that marred the day was to see the spurs of a young artillery officer quite covered with blood when he weighed in after one of the races.



Japanese in Manchuria *

This is the first volume of a critical study of the war in Manchuria.

In describing the battles and movements it does not go very much into detail but sufficiently so that the reader can gain a good idea of the subject.

It is an excellent critique dealing with both the strategy and tactics. The author is fair, showing no favor to either side. Reasons for failure and success are clearly pointed out and the real lessons of the war set forth.

Most of the book has a special value for American officers and still more for our law makers if they would study it.

The author clearly points out the necessity that a nation hold her ambition and policy to correspond with her army.

"In proportion as war becomes more scientific it comes less within the province of improvised soldiers."

The false training of the Russian troops in the Far East is pointed out. Scattered in detachments, each arm trained by itself, and little training other than close order and ceremony produced the inevitable result—an inability to work together.

* "THE JAPANESE IN MANCHURIA." Volume I. By Colonel Cordonnier Commanding 119th Regiment Infantry, French Army, formerly Professor at the École Supérieure de Guerre. Translated by Captain Atkinson, First London Regiment (Royal Fusileers). Hugh Rees, Ltd., London. 1912 Price, 7s, 6d, net.

The author dwells on the mistake of giving commands to officers who had been absent for a long time from service with troops.

The above statements as expounded by the author have a special value and interest for us. Our general officers have little opportunity to actually command troops, although an effort is being made to see that others get such opportunity. The prospects for correct training of the arms combined does not seem promising at present in the United States.

The author's tactical and strategical criticisms are sound, and very clearly and simply expressed.

The average officer cannot fail to gain a better understanding of many fundamental principles by a careful reading of this book.

The author brings out clearly the necessity of good cavalry under modern war conditions. Proper reconnaissance is absolutely essential. A good explanation is given for cavalry having accomplished nothing in Manchuria. As the author justly says that it accomplished nothing is no argument for those who favor abolishing cavalry. It is not cavalry that should be abolished, but officers of cavalry who do not know how to use it. And to those cavalry officers should be added all commanders of mixed forces who do not understand the proper use of cavalry.

Good cavalry in war is invaluable, poor cavalry poorly led like the Cossacks in Manchuria is of no value.

The work is much shorter and easier to read than the voluminous, detailed works now coming out. Yet, I believe the average busy officer will get more benefit from this.

To the officer who has the time and inclination to carefully study the official reports this work has a value as a guide map, and as an exposition of sound military principles well and clearly expressed. The author does not try to establish a doctrine on a single isolated case occurring under abnormal conditions.

The book, like most of the Hugh Rees' productions, is beautifully printed on good paper and large clear type. The maps are fairly good and numerous. Names have been changed to correspond to English publications, a great convenience to those

who read only English and are more or less familiar with the accounts of the war.

I recommend the careful reading of the book to American officers and hope soon to see the remaining volume available in English. J. F. M.

Staff Work.* One of the notable additions to our military books of the last year was a work entitled "Organization: How Armies are formed for War," by Colonel Hubert Foster of the British Army. A new work by the same author entitled "Staff Work, a Guide to Command and General Staff Duties with Small Forces of all Arms in the Field" has just appeared, and seems to be a fitting companion to the former valuable production. It is interesting to note that Colonel Foster dedicates this book "to my Canadian and Australian brother officers and to my comrades in the American Army." Truly blood is thicker than water and perhaps the Anlgo-Saxon alliance is something more than a dream.

The book deals with the leadership of mixed brigades of detachments of all arms and explains and supplements portions of the British Field Service Regulations relating to this subject. It deals with principles and avoids technicalities and is consequently quite as applicable to our service as to the British. It would serve admirably as an introduction to the study of Griepenkerl's "Letters on Applied Tactics," and should be of special interest to our officers at this time when we are anticipating being grouped in brigade posts and having more frequent field maneuvers with organizations composed of troops of all arms.

The work is conveniently arranged into three parts. Part I, entitled "Movements of Troops" contains chapters headed: Marches, Rate of Marching, Order of March, The Start, Measures for Security on the March, Night Quarters, Measures for Security at Rest and Tactical Reconnaissance. Part II, is entitled "The Combat" and its chapters are headed: The Offensive, Conduct

*"STAFF WORK, A Guide to Command and General Staff Duties with Small Forces of all Arms in the Field." By Colonel Hubert Foster of the British Army.

of the Attack, Specials Forms of Combat, The Defensive, The Defensive Battle, Technical Services in the Combat, Mountain and Bush Fighting, Resisting a Landing, Effecting a Landing, Defence of Localities and Operations on Lines of Communications. Part III is devoted to "Orders" and has two chapters, entitled Orders in General and Combined Operation Orders. The author refrains from giving any models for orders but his statement of the general principles relating to the composition of orders is quite complete.

The author's attitude in regard to the defensive is shown by the following extract: "To remain on the defensive while the enemy maneuvers can only result in disaster. Since the Manchurian War it is more clear than ever that an army which takes root in a *position* is doomed, and that its salvation lies in freedom to maneuver, for which the position was first taken up is merely a temporary screen."

The work is written in simple language and in a clear and interesting style. Officers who do not find Field Service Regulations attractive or always intelligible can find in Colonel Foster's book the substance of the Regulations so well written as to make enjoyable reading.

The Rasp.* This large book, 7½ in. by 10 in., of over 300 pages, is unique and one that will prove of intense interest to all cavalrymen and others that love the horse.

It is published by the "Class of 1912" of the Mounted Service School, U. S. Army, at Fort Riley, Kansas, and is dedicated as follows:

"As a mark of their appreciation of his active, generous, and patriotic interest in promoting the welfare, advancement and efficiency of the mounted service of the United States Army, this book is respectfully dedicated by the Class of 1912, Mounted Service School, to Mr. August Belmont."

*"THE RASP." Mounted Service School, U. S. Army, Fort Riley, Kan. Published by the Class of 1912, Mounted Service School, U. S. Army, Fort Riley, Kansas. Press of the Franklin Hudson Publishing Co., Kansas City, Missouri.

To those who expect to find this book to be along the lines of the ordinary school or college annual, it will prove a great but an agreeable surprise, as it is not only one that shows the usual report of the routine work of the school, with cuts of the instructors and students, but also is a work on equitation as well.

The following is a brief synopsis of the ground covered in this book which is well illustrated with over 250 cuts, nearly all of which are well executed half tones.

The introduction consists of a dissertation on the subject of equitation as taught at the mounted Service School during the several years of its existence, which is followed by the "Daily Diary of Equitation Work at the Mounted Service School" for the year 1911-12, as has appeared in the CAVALRY JOURNAL. After this comes a report on the work of the department of "Horseshoeing and Hippology," past and present.

Then, in order follows: Demolitions; Fox and Drag Hounds in the Army, by Caprain Guy Cushman, Eleventh Cavalry; The Formation of a Regimental Hunt Club, by the same; Polo in the Army, by Colonel Charles G. Treat, Third Field Artillery; The Army at the Hunt Meets, by Lieutenant Charles K. Rockwell; Summary of Military Races, April 11, 1908, up-to-date; The Army at the National and International Horese Shows; Breeding Army Horses, by Lieutenant Robrt M. Danford, Fifth Field Artillery; The Arabian Horse, by Homer Davenport; The Military Riding Institute at Hanover, by Lieutenant Edmund L. Grueber, Fifth Field Artillery; The Cavalry School of Application at Saumur, by Captain Guy V. Henry, Thirteenth Cavalry; Living at Saumur, A Few Facts and Figures, by Lieutenant Adna R. Chaffee, Jr.; A Visit to the British Cavalry School, by Lieutenent Gordon Johnston, Seventh Cavalry; The Cavalry Schools of Pignerol and Tor di Quinto; Training in Horsemanship of Austro-Hungarian Cavalry Officers and School for Military Riding Instructors at Vienna; The Central Cavalry School at St. Petersburg; The International Competition for Officers' Chargers, Rome, May, 1911, by Lieutenant Colonel T. Bentley Mott, Second Field Artillery; and last but possibly of particular interest to many of our readers, comes "The Roll of Honor." This roll is made up of those student officers who have been "*policed*" during the

school year, with the date, name of rider and the name of the horse that "*conferred upon him this distinction*," as a foot-note to the roll states. The roll shows that there were seventy-five different occasions, from October 9, 1911, to May 22, 1912, in which riders were so "policed," some of them having been so honored three or more times. Among these will be noticed several of our friends of the Special Field Officers' Class who were "*dumped*" during their short stay at the school recently.

As stated above, the book is well illustrated with many cuts showing the horses and riders in action at their work at the school as well at the foreign schools mentioned.

The cost of this book is not known, but every cavalryman in our service should have a copy. The cuts alone are well worth the price of any ordinary book of this size and style, to say nothing of the valuable reading matter it contains.

Field Service * This is a small book—5¼"x8"—of 166 pages which is a compendium of knowledge regarding that which pertains to service in the field. It contains a mass of information that the old soldier may know, although it is probable that even he will find many new pointers in this book.

The following is a partial synopsis of the contents of the fourteen chapters into which the book is divided:

I. Equipment and personal effects of officers: General rules and principles, articles carried on the person, articles carried in the bedding roll, articles carried in the clothing roll, articles carried separtaely, transportation of excess field allowance of baggage.

II. Equipment and personal effects of enlisted men: Clothing, arms, equipment, rations, intrenching tools.

*"FIELD SERVICE." By Captain James A. Moss, 24th U. S. Infantry. Second Edition, revised and enlarged. Geo. Banta Publishing Co., Menasha Wis. Price $1.25, postpaid.

III. A company taking the field: Personal equipment of enlisted men, tentage, rations, forage, ammunition, medicine, field desk, maps, officers' mess and mess chest.

IV. Loading wagons: General principles, location of various articles.

V. Transportation and caring for same: Wagon transportation, rail transportation, detraining, loading animals, etc., care of animals, etc.

VI. Marches: Troops on the march, advance, rear and flank guards, general rules for conducting a march.

VII. Camping: Form and dimensions of camps, pitching tents, construction of sinks, kitchen pits, incineration pits, wood, water, etc., policing camp.

VIII. Camp expedients: How to improvise lamps, candle-sticks, forks, spoons and cups. How to heat a tent without stoves, how to fry and broil without utensils.

IX. Individual cooking: How to cook with only the mess kit; receipts.

X. Field cooking: In permanent camps, in temporary camps, on the march, bill of fare for ten days, field cooking, expedients, fireless cooking, messing on railroad trains.

XI. Field baking and field bakery equipment. Field baking expedients, preparation and preservation of yeasts.

XII. Care of the health and first aid to the sick and injured.

XIII. Rifle trenches: Their construction and use, obstacles.

XIV. Miscellaneous: Weights of articles usually taken into the field, weights, dimensions and capacities of tents, weights of rations, capacities of wagons, dimensions and capacities of railroad cars, allowance of water, ration of forage.

Applied Minor Tactics.*

A book containing much information, clearly and concisely told, on the subjects of map reading, sketching, instructions for non-commissioned officers in applied tactics, partolling and the War Game.

While but little of the subject matter of this book is new, it possesses an advantage to the beginner in that there is condensed between its two covers a large amount of information pertaining to the study of applied tactics in small commands.

L. H.

Modern Riding and Horse Education.†

Modern Riding and Horse Education by Major Noel Birch contains much that is useful and interesting and is well worth reading by the beginner or the more experienced horseman. Some of the statements made, however, are far from convincing. He advocates the English seat which is not by any means the strongest or best one for cross country, school or military riding. His ideas on jumping are particularly good.

The first part of the book is devoted to the human portion of the combination, his seat, his balance, grip, use of leg and hand, and the best conditions for learning. The second is given up to the proper trainning of the horses themselves, the development of their mind.

The book is written in a broad-minded and liberal spirit and shows that horsemanship can be greatly improved by scientific knowledge, and that the man or woman who has become possessed of some of this knowledge is in a better position to learn, and is likely to become a far better rider than he or she who is wholly ignorant, or in some degree prejudiced.

*"APPLIED MINOR TACTICS." (Including Map Problems and the War Game.) "Map Reading and Map Sketching." By Captain James A. Moss, 24th U. S. Infantry. National Capital Press, Washington, D. C. Price $1.50, postpaid.

†"MODERN RIDING AND HORSE EDUCATION." By Major Noel Birch, Royal Horse Artillery of Great Britian. William R. Jenkins Co., New York. Price, $2.00, net.

Tin Soldiers.*

This work contains an interesting and well told description of the average National Guard. It is unique in that the work which a National Guard officer is "up against" is clearly given to the public for the first time and the needs and deficiencies of the militia are carefully and fearlessly gone into, and remedial action in most cases, suggested.

The latter part of the book contains a historical description of the operations of the militia when on strike duty, at joint camps of instruction and a discussion of the maneuver camp at San Antonio as seen by a militia officer.

For a thorough understanding of the organized militia, the work would well be read by regular officers as well as by others interested in this subject.

L. H.

*"TIN SOLDIERS." The Organized Militia and What it Really is. By Walter Merriam Pratt, with a foreword by Captain Geo. E. Thorne, 24th U. S. Infantry. Richard Badger, the Gorham Press, Boston, Mass. Price $1.50, net. Postage 12 cents.

Editor's Table.

ONE LIST FOR PROMOTION.

In the last number of this JOURNAL there was enunciated a principle which was set forth by the Executive Council of the U. S. Cavalry Association as their views on the vital question of harmonizing the conflicting interests of the several branches of the mobile army. As was clearly stated in the editorial, under the heading of "A Mobile Army," in that number, with this principle of equality of promotion once established the officers could go before Congress with clean hands and represent the army's needs as a whole and that Congress, being assured that there was no "*nigger in the wood pile*," would give the organization desired and needed. Also, it might have been added, that they could approach Congress with a clear conscience as many of the schemes advanced in the past for the increase of this or that arm or the organization of some corps has been almost entirely for the selfish purpose of gaining promotion.

Since the appearance of the editorial in question, many communications have been received from our Branch Asstions and members commending the stand taken in this matter and heartily endorsing the principle as stated therein. Furthermore, several officers of other arms have expressed themselves as being strongly in favor of this scheme of equalizing promotion in the army.

Many arguments for and against the "One List for Promotion" scheme as advanced some months ago by several officers of all arms have been set forth at large in the service papers, but, in so far as is known, none of the other Journals of the several

arms of the mobile army have taken up or discussed the question. This is too important a subject to be ignored and it is hoped that the other service Journals and the Associations that they represent will consider it and announce their stand on the proposition.

Considering the arguments, pro and con, that have been advanced, it appears to the writer that those favoring this scheme have given such clear and convincing proof of its fairness and practicability that the opposing arguments have but little weight. These latter arguments are generally on the ground that it would disturb the existing rank gained by certain officers over their comrades, or that it would necessitate officers being promoted into other branches than the one in which they had served and been trained and that, consequently, they were unfitted for the duties of their new grade in the new arm to which promoted. The first or selfish side of the question should be ignored as being too trivial and one that should not stand as against the best interests of the army. The other objection can be obviated in several ways that can easily and fairly be devised. One that has been suggested and that will undoubtedly work out in practice is to use the extra officers' list as reservoir to take care of officers who might otherwise be promoted into another arm than the one in which they had been serving. Another would be to make the one promoted an extra officer in his own arm, in case there was no vacancy in that arm for him and, to leave the vacancy unfilled in the other arm where it had occurred until it should come the turn of the senior officer of that arm to be promoted. Other, and possibly better schemes for obviating this objection can be worked out. At any rate, the writer is of the opinion that officers should not be promoted into other arms than their own, although even this objection is of minor importance as compared with the great and underlying principle of establishing harmony between the arms.

Harmony never will be established and maintained between the several branches and corps of the army so long as large differences of rank and pay exists between officers of nearly equal length of service. For the nearly forty years that the writer has been a commissioned officer, jealousies and bitterness of feeling on this account have existed in our army but

never to the extent as has been the case since the Spanish-American War. Many of us remember well how bitterly our friends in the old artillery arm cursed their fate when they were compelled to wait twenty-five to thirty years before reaching their captaincies, while youngsters in certain staff corps became captains by law in fourteen years and others attained that rank in even less time. So it was in other branches but in a lesser degree.

We have been told that the committee of the general staff that has been working in a reorganization scheme for the army was about to submit its report and that the same would soon be laid before Congress. Rumor has it that this long delay in submitting this report has been caused by a failure to reach an agreement as to how the resulting promotion that would follow the reorganization should be apportioned. If such is the case or in any case, the adoption of this principle of one list for promotion would have settled that question and have paved the way for a fair and free discussion of any reorganization scheme upon its own merits.

Finally, to quote from that excellent article on this subject by Captain Baltzell, of the Infantry, and which appeared in the *Army and Navy Journal* some months ago:

"By this principle is meant the separation of the question of promotion and organization. Organization should depend solely upon strategical, tactical and economical considerations; while promotion should be regulated on equitable grounds, and it should be entirely distinct from the really *important public* question—that of securing a flexible, efficient and economical system of providing for the purely military needs of the country. The solution should be based entirely on the grounds of national necessity, and without reference to the interests of the personnel of any component of the mobile army. The aim should be a properly proportioned, expansible and economical army, even if this should involve a large increase of one arm or the actual reductuion of another.

"In order to accomplish this properly, the military thought of the moblie army must be so disposed that it can view the matter from a thoroughly proper, unbiased and purely military standpoint, with an eye only to the question of the military

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efficiency of the whole. Certainly those who make the military profession their life work and interest are alone best fitted to judge as to what is demanded for its efficiency. But in order to possess a proper appreciation of those needs, the source from which that conviction flows must first be untainted by narrowness or personal and collective selfishness.

"How can such a condition of thought on the part of the mobile army be attained? Merely by removing the intrigues and jealousies which exist between the components of that force. The main cause for such partisan and narrow feeling can be traced to the matter of unequal and capricious promotion in the separate arms, where individuals of those several arms are adversely or unfavorably affected with respect to one another in the great struggle and desires for promotion. However, even if any particular order of promotion is merely unjust to *certain individuals* such condition within itself is not sufficient ground for changing it; but where it stands as an obstacle to any *public* interest, there is no reason in law, equity or common sense for retaining it.

"So in order to destroy this constant source of friction and lack of efficiency, there can be but one general solution. Place all officers of the mobile army on one list for promotion, and there will disappear the very root of the present discord. For when every one can partake equitably of the promotion which results from this combination, each individual can view with dispassion the military needs of the country. It is indeed a strange condition if continuous partisan strife, which is the destroyer of all efficiency, can be preferred to that harmony and unity of purpose which will produce the very efficiency that should be most earnestly sought. The particular solution for this combination into one list can certainly be worked out by any proper body of officers. This is a detail which is necessary to put into effect a principle that is today the most urgent need of the mobile army; and is a detail that is of great importance in bringing about a proper collective frame of mind on the part of the several arms, because the imperfections of human nature must be taken into consideration. Various solutions can be given to the problem, and to each separate solution various

modifications may be attached—thus causing a number of reasonable solutions. But the one to be selected is that which is most equitable, practical and feasible for those concerned; and this should not be an unduly difficult task. And when by such solution there is once established a solid foundation that will allow of military efficiency, that efficiency will most surely follow."

INEQUALITIES OF PROMOTION.

The July-August number of the *Journal of the Military Service Institution* contains, as its leading article, an interesting and valuable contribution from the pen of Major W. H. Hart, Subsistence Department, entitled "The Blight of Favoritism." The text of this article is contained in the following query: "Promotion by seniority from bottom to top during time of peace—Why not?"

In it the writer advocates promotion by seniority from second lieutenant to brigadier general, inclusive, in each arm of the service, the senior colonel of the arm which is entitled to the next promotion being advanced to the grade of brigadier general whenever a vacancy occurs in that grade.

He says: "To accomplish what is outlined above is a very simple matter. It only requires a few words of statute law. But that law sholud be stated so clearly as to leave no possible loophole for *exceptions* when the pressure becomes too great. It should prescribe a cast-iron rule of procedure. In substance it should declare that:

"Hereafter during time of peace, promotion to every grade in the army throughout each arm, corps or department of the service shall, subject to examination provided for, be made according to seniority in the next lower grade of that arm, corps or department; promotion to the grade of brigadier general in the line shall be made according to seniority in the arm, corps or department from which the appointment is to be made; promotion above the grade of brigadier general shall be made according to seniority in the next lower grade."

If by this it is meant that promotion shall be lineal in each arm, corps or department up to the grade of colonel and also to include the grade of brigadier general for the several staff corps and that vacancies in the grade of brigadier general in the line shall be filled by the appointment of the senior colonel of the line, or the senior colonel of that arm of the line from which the next promotion should be made, it is believed this principle would be accepted by the army as an improvement over the present system.

While the writer advances sound arguments for proposing this radical change in our laws for promotion and with a view of avoiding the heart burnings and bitterness engendered in our older colonels by being overslaughed, yet we feel they do not go far enough and cure the principal defects in our present system of promotion throughout all grades of all arms, corps and departments.

To be assured that the proper material for general officers may be found among the senior colonels, a system of elimination should be evolved to rid the service of those inefficients who may possibly reach the grade of colonel and therefore become eligible in time for promotion to the grade of brigadier general. Any colonel who is unfit, by reason of his habits physical condition, temperament or other disability, for promotion to the next higher grade is also unfit for the equally as important position, as far as the building up of the efficiency and morale of the army is concerned, of colonel of the line and should not have been allowed to reach that grade.

The most important grade in our army, or in any army for that matter, is that of captain, for upon them, in an ideal army, must depend largely if not almost entirely the discipline, efficiency and all that goes to make up a first class, efficient army. To them ultimately must the colonels and generals look for the proper training, discipline and contentment of the men in the ranks.

Therefore, in order to be assured of having good, active, energetic and efficient captains and thereafter good colonels and material for efficient generals, the weeding out process should

begin at the examinations for promotion to a captaincy. I should then be the law, an iron-clad law, backed up by rig rules, strictly enforced, that lieutenants are commissioned o probation only, and subject to a rigid examination for prom tion to the grade of captain. This exanimation should cov every possible point as regards their fitness to command a con pany.

The inefficients being thus practically weeded out, althoug subsequent examinations may discover other defects, physic or otherwise, which should disqualify them for still furth advancement, and weeded out at a time when they are st young enough to rustle for themselves in some occupation f which they are better fitted to follow, the way is clear to esta lish a just and equitable law that will insure equal justice t every officer in the army.

Then, why not go a step farther than is advocated by Maj Hart? Let all officers of the line be promoted according to th *one list for promotion scheme* and the problem of equal justi for all would be solved as far as the line is concerned. To solv the apparently more difficult one of adjusting the inequalitie of promotion now and heretofore existing between the line an the several staff corps, which is now one of the principal cause for the lack of harmony in our army, is still believed to be a compartively simple matter. To do this it is only necessary t prescribe that all officers of the army shall have rank, preced ance and pay according to their length of service in the army irrespective of their actual rank in their own arm or corps.

There is no doubt that all officers of the army of approxi mately the same length of service should attain the same rank and receive practically the same rate of pay, although this latter item is not as important a factor in promoting harmony throughout the army as is that of rank and presedence. We have all known many instances in our service where officers of less than ten years' service have taken precedence, as regards quarters, etc., over other officers of more than twenty years' service and other similar cases of injustice due to inequalities of rank. Officers of three, or less years service have in times past attained their captaincies while others were twenty years or more in reaching this grade. Again, some officers have reached

heir majorities in eight years or less while others, equally meritorious and efficient, have been thirty or more years in etting theirs.

It is a well know fact that the abnormal increases in certain aff corps since the Spanish-American War were not worked t on any well digested scheme for the reorganization of the rmy but was piece-meal legislation advanced by the members these respective corps and obtained through the personal fluence, more or less, of the officers of those corps. Therefore, undue promotion was given the officers of these several staff rps, with the consequent bitterness of feeling aroused in other anches of the army, especially where the officers so advanced me in contact officially with others that they had jumped, rticularly as regards the quarter question and precedence Boards, etc.

All this is wrong and is an answer to the frequently asked estion: "What is the matter with the army?"

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U. S. CAVALRY ASSOCIATION, Fort Leavenworth, Kansas.

VOL. XXIII. SEPTEMBER, 1912. No. 92.

JOURNAL

OF THE

United States Cavalry

ASSOCIATION.

PUBLISHED BI-MONTHLY
BY THE UNITED STATES CAVALRY ASSOCIATION,
FORT LEAVENWORTH, KANSAS.

$2.50 per Annum. 50 Cents a Copy.

Foreign Postage, 50c per year.

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EDITOR.

Entered as second-class matter, January 21, 1911, at the Post Office at Fort Leavenworth, Kansas, under the Act of March 3, 1879.

KETCHESON PRINTING COMPANY
LEAVENWORTH, KANSAS.

THE United States Cavalry Association.

ORGANIZED NOVEMBER 9, 1885.

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JOURNAL

OF THE

United States Cavalry Association.

VOL. XXIII. SEPTEMBER, 1912. No. 92.

THE TRUTH ABOUT CHICKAMAUGA.*

BY CAPTAIN EDWARD L. ANDERSON,† FIFTY-SECOND OHIO VOLUNTEER INFANTRY.

I HAVE had the honor of being invited to address you, this evening, upon a work of great significance; one which will give surprise to those who derive their ideas of the great Battle of Chickamauga from tradition and unsupported statements, but which will be recognized by those who were participants in the engagement as containing much of, if not the whole truth regarding the events of September 19th and 20th ,1863, when the Army of the Cumberland and the Confederates under Bragg measured swords in one of the fiercest contests of modern times.

The author of this work, a son of the late Brigadier General Gracie, Conferedate Army, assures us that he undertook the self-imposed task, without much knowledge of his subject and without prejudice, because in his visits to the battlefield, in

*A paper read before the Ohio Commandery of the Military Order of the Loyal Legion of the United States by Captain Anderson who served as Adjutant General of McCook's Brigade during this campaign. As will be seen, it is a review of a late book by Archibald Gracie which has recently appeared under this same title.

†Author of "Modern Horsemanship," "Curb, Snaffle and Spur," "Horses and Riding," etc., etc.

memory of his gallant father, he found so many contradictory statements from misinformed reporters, and such conflicting witnesses in the monuments, that he determined to see how near he could bring into harmony the differing credible representations, by seeking information on every point from both the Federal and Confederate side.

"The tribunal to whose decision the truth * * * is referred, after exhausted and impartial study, is the Official Reports, which constitute the Court of Last Resort, cited in the text herewith, and supplemented by reference to those authoritative sources in 'Notes' following thereafter, which will be found of special interest." (page viii.)

The greater part of the book is given up to discussing the four or five last hours of the engagement, so that in a review of the work in question, we must pass over the battles of the 19th of September and the early part of the 20th, with an account of these events in a brief manner, detailed enough only to make as clear as possible the movements and their results from noon of the second day.

In the hurly-burly of the series of fights which then took place, often by mere groups of our separated and divided commands, where there was much borrowing of squads, regiments and brigades as various points required support at moments of supreme importance, the author of "The Truth About Chicamauga" met with very great difficulties. Each officer naturally and loyally made the best possible record for his troops in the last stand before the withdrawal from the field, which reports Colonel Gracie assumes were generally intended to be fair and truthful, except in the instances where he pillories the offenders in his criticisms.

One, and not the least of these difficulties in reconciling the conflicting statements into some kind of accord, is the fact that upon nearly every important affair the given time differs, often, by hours.

"I have found another check upon the accuracy of my work. I have followed out the movements of each corps; then the movements of each division of each and every corps; and finally, the movements of every regiment, battalion, and battery of each brigade in every division; and, where the units of organization

have dovetailed perfectly, I have obtained, I think, a mathematical demonstration in many instances of the accuracy of the work. After one has accomplished the chimerical task which I have suggested, he may claim to know something about the truth of this most wonderful battle.

"In consequence of this work of mine, I claim respect for the accuracy of the premises on which my conclusions are based, for the truth of which the Official Reports are responsible, and with which these conclusions square." (page 35.)

To those who thoughtlessly ask; "Why should not the story of the battle, now more or less generally accepted, be permitted to rest, or the whole affair allowed to pass into oblivion?" it should be explained that to juggle with or to suppress historical facts is a crime that has a much wider influence for evil than is thought to prevail by such weaklings.

The first chapter of Gracie's book is given to the "Elimination of False History," and here the author undertakes to prove by the Official Reports that Chickamauga was not fought by Rosecrans for the possession or the holding of the City of Chattanooga, but for the destruction of Bragg's troops and the control of a large region occupied by the Confederates. Such objects were within the rights of an invading army; but as Chattanooga was peacefully taken ten days before September 19th, and was in a favorable position for defense, as was afterwards proved, it was absurd for Rosecrans to assert that the battle was fought for its permanent possession, a theory that came to his mind later when, after admitting defeat, he claimed that the object of his campaign was attained, and that Chickamauga was a great Federal Victory.

The fact is that Rosecrans by a series of masterly movements had forced the Confederates to withdraw from Chattanooga, and that after this was accomplished he lost his skill, and deceived by Bragg's clever stratagems believed that the Confederate forces were flying before him, a disorganized rabble seeking safety in flight.

Rosecrans' eyes were opened on September 12th, when he was confident that Bragg's army was concentrated about Lafayette, an easy march from the captured city. Then he hurriedly

brought his weary and scattered corps into the unknown recesses of a tangled forest to face a brave and prepared foe.

"I doubt if there can be found recorded anywhere in the history of a great battle, an instance where any army was more completely deceived than was the Federal army by the stratagems employed by General Bragg during the four days ending September 12th." (Gracie page 20.)

For four days the opportunity was given Bragg of attacking one of Rosecrans' corps with a much superior force, before it could receive aid from either of the others, and the neglect of doing so is one of those mysteries that envelope the story of Chickamauga; another, no less important in its bearing, is Longstreet calling a halt on the evening of Septemder 20th, when the retreating forces of Thomas, lying at his mercy, were permitted to withdraw undisturbed. Of course it will be said, in accord with Granger's afterthought, that Bragg's army had suffered great losses in the battle of two days; but no successful troops would have refused to march a few miles, no matter what losses had been sustained, if they saw a complete victory before them.

Upon the 18th of September Col. Dan McCook was ordered with his brigade and the 69th Ohio, to make a reconnaissance towards Reed's bridge, on the Chickamauge River, at the northeast corner of what afterwards proved to be the battlefield, and that he should destroy that structure should he be able to do so without bringing on a general engagement. Col. McCook's command arrived at dark within a mile of the bridge, when his skirmishers came upon the rear of McNair's brigade, of Bushrod Johnson's Division, which was passing along a road crossing his front. About twenty stragglers were picked up, without creating any disturbance, and after, a short time of quiet, the 69th Ohio was sent forward and succeeded in firing the bridge, which as it was afterwards proved was only scorched. At daylight on September 19th, the enemy opened with small arms and artillery upon McCooks men who had passed the night lying upon their arms, without fires, upon which Colonel McCook, following his previous orders, and, a peremptory order having been received before any great losses on his part, marched his command back toward Rossville. Upon reaching the point where the head of his command struck the Lafayette Road, General Brannan was

met (Croxton's brigade in advance), in column without advance guards. McCook called out to Brannan that he had a rebel brigade penned up in a bend of the river near Jay's sawmill, with the bridge in its rear destroyed. General Thomas reports that McCook gave him the same information at Baird's headquarters.

Immediately upon the receipt of Colonel McCook's report General Thomas sent Brannan, followed by Baird, eastwardly towards Reed's bridge and the neighboring sawmill with a view to capturing the brigade which was penned up in the bend of the Chickamauga River. This episode is described at some length on account of the very important events which followed it as a matter of course. The fact was that the enemy was in great force about the points mentioned and towards Alexander's Bridge. The divisions of Brannan and Baird were soon hotly engaged and the battle of the 19th of September was begun past recall. Besides the divisions of Brannan and Reynolds, General Thomas had those of Johnson, Palmer, Van Cleve and Davis, long before midday. Croxton of Brannan's division and VanDerveer of Baird's, after a number of short contests, had pushed their way to within a half a mile of Jay's sawmill. Baird and Brannan maintained the unequal fight for at least two hours when Johnson, Palmer and Reynolds came to their assistance. All day the battle raged with varying fortunes; sometimes in long lines, sometimes by small commands, until before night every division in the Army of the Cumberland was represented on the fighting front. At dark Johnson's division alone remained in advance at D. C. Reed's farm where it was fiercely attacked and for a time the line gave way, but rallied and held its ground after great losses, until the firing ceased; when it, with other divisions took positions in a line west of the ground fought over and the battle of September 19th ceased.

As has been stated, in a review of the book in question, we are not concerned about the battles of the 19th of September and the first half of the 20th, further than to give us an understandable perspective of the whole field for both days. Nor are there many points of importance in dispute before the arrival of Granger's Reserve Corps and the withdrawl of the whole of Thomas' command to Rossville.

From about noon of Saturday up to eleven o'clock on Sunday, Rosecrans' headquarters were at the Widow Glenn's house on the Crawfish Springs Road. Here late on the night of the 19th the Commander of the Army of the Cumberland had a consultation with his Corps Commanders regarding the arrangements of the lines for the next day. With some slight changes the plan was adhered to with the following result:

Sherdian's division (20 A. C.) was posted on the extreme right at Widow Glenn's. Davis (20 A. C.) was placed on Sheridan's left, his line extending to the south-east corner of Dyer's Field. Wood (21 A. C.)was on Davis' left, and Brannan's (14 A. C.) division on the left of Wood reached the Lafayette Road, north of the Poe house. Van Cleve's division was in rear of Wood and Brannan. There was a break in the line, as Reynold's right was in echelon four hundred yards in front of Brannan's left. Reynolds (14 A. C.) Palmer (21 A. C.) Johnson (20 A. C.) and Baird (14 A.C.) had their divisions in that order around and east of Kelly's field. The brigade of John Beatty was on Baird's left, Stanley's behind Baird, Sirwell's with the reserve artillery in rear of the left wing, these last named three being of Negley's division; this force being intended to guard the Lafayette Road from Bragg's formidable masses on his right. Granger, with Steedman's division and Dan McCook's brigade of the Reserve Corps, was posted at McAfee's Church, about four miles from Thomas' left to watch the road from Ringgold, and to give aid to, or to receive aid from the main army as occasion might demand.

The battle of September 20th opened by an attack upon our extreme left against John Beatty's thin line, which was driven back upon Baird's troops and this attack was repulsed. Stanley and the reserves of Johnson and Palmer drove back two Confederate brigades which had passed along the west side of the Lafayette Road in an effort to reach the Federal rear. Baird, Johnson, Palmer and Reynolds and Negley's two brigades repulsed many fierce assaults with steadiness and dertemination. The right wing of a Confederate brigade, its left held in check, slipped by to Kelly's field, when it was met and routed by Van Derveer and Willich, who always seemed to be on hand when wanted.

The greater part of Thomas' left wing was somewhat protected by a rude barricade of logs and rails, which aided the troops in resisting the terrible fire of the enemy. This slight but encouraging defence originated with Hazen, who throughout the whole day exhibited such skill, courage and perseverance as marked him as one of the most efficient officers in the army. Previously to the withdrawl of Wood from the main line Brannan was fiercely attacked in Poe's Field, but the enemy was driven from his front by an enfilading fire from the divisions of Reynolds and Palmer.

We now come to a very important phase of the battle, one that threatened the early defeat and destruction of the whole Army of the Cumberland.

About eleven o'clock Wood's division was withdrawing, under misunderstood orders, to assist Reynolds, who was on Brannan's left where there was the break in the line as described. Before Wood had wholly passed from his position two divisions of the enemy broke through the gap; one of these passing northwardly, crumpled up Brannan's division and all the troops in its rear; the other body of the enemy driving the troops of Davis, Sheridan and Wilder in a wild rout that bore with them from the field the Generals Rosecrans, McCook and Crittenden. The gallant Harker having escaped this attack returned with his brigade and for a time faced fearful odds, but very shortly these ready fighters with Brannan's men and those of Buell and Sam Beatty, a scattered mass, were pursued until a stand could be made by Brannan, Harker and fragments of other commands upon the heights south of the Snodgrass house.

General Thomas had nothing to do with posting the first line upon Horseshoe Ridge, as is proved by the official report and the statements of all concerned. When Brannan, Wood and the commands in their rear were driven north from the vicinity of the Poe house and Dyer's field, Brannan's troops reformed upon the westerly point of the Horseshoe Ridge, while Wood posted Harker's brigade upon the easterly hill, in continuation of that providentially discovered stronghold; while Stoughton found refuge between Harker and Brannan, and the 58th Indiana was placed between Connell's 82nd Indiana and Croxton. The 21st Ohio, a splendid regiment of Sirwell's brigade with 535 men

armed for the most part with Colt's repeating rifles, afterwards joined the right of Connell. When General Thomas arrived at the Horseshoe Ridge, from one to two o'clock, the line was as follows: 21st Ohio; 82nd Indiana; 17th Kentucky; 58th Indiana, Croxton, under Hays; 13th Ohio, Stoughton; 44th Indiana, Harker.

We now employ literally Colonel Gracie's words: "Our standard of truth, from which we quote, plainly indicates that Thomas was the grandest figure of the Federal Army; a monument of strength and inspiration to the courage of his soldiers, who had rallied in the woods and on heights to which they had fled, and where they had been posted under the orders of their commanders, Generals Wood, Brannan and John Beatty, and Colonels Harker, Stoughton, Hunter and Walker."

"Here, from one to one and a half hours, with a force of about 1500 fragments under Brannan and of at least 1200 (carefully estimated) of the Iron Brigade of Harker, including the 125th Ohio, 'Opdycke's Tigers,' and Smith's four guns and eighty-three men of the 4th United States Battery, whilom fugitives most of them whose courage was restored by the very presence of Thomas, the pursuit was checked and the heights maintained against that most formidable instrument of war, Kershaw's South Carolina Brigade, fresh from storming the heights of Gettysburg, and from victories on many hard fought fields, but none, according to their commander, more heavy than this. Kershaw's Brigade about 1200 in action, with Colonel Oates 15th Alabama Regiment, were the sole representatives that afternoon of 'Longstreet's Virginia Army,' in the assault on Chickamauga Heights; yet these men, on the strength of their reputation, inspired such terror that their numbers were more than quadrupled by the imagination of their opponents. About 2 o'clock P. M., to Kershaw's support on his left came Anderson's strong and brave Mississippi Brigade, of Hindman's Division; but still the heights were held, the 21st Ohio Regiment, the strongest in the Federal Army, performing yeoman service at this juncture with its efficient use of its five-chambered Colt's revolving rifles.

"Then followed the belated Bushrod Johnson, whose time

and energies had been wasted for hours waiting for orders to advance his much enduring, hard-fighting Tennesseeans.

"This is the crucial moment and the die is cast. The 21st Ohio's thin line at its middle has been thrown back like a gate on its hinges, in a vain attempt to finally resist the Confederate movement on Brannan's flank. But fifteen minutes more and this rally on the heights would have been of no use, and Thomas' superb courage, famed in story, might never have been a theme of grandeur. Grangers' Reserve Corps, without orders, marching *au canon, a la Desaix a Marengo*, had arrived on the field.

"After reporting to General Thomas, General Steedman, of this corps, was ordered to move his division into the three-quarter-mile gap between the two wings of the army. The Preparatory movement had been made, but before the final command of execution was given, the more immediate danger was seen in time. On the command 'right-face' Steedman marched west in rear of Brannan's line until the latters' right was reached, when first Whitaker's Brigade and then Mitchell's were moved by the left flank. The division then charged up the heights, General Steedman performing the most conspicuous act of personal courage recorded of any general officer on the Federal side, leading his men, most of them raw recruits, then for the first time in action, and, seizing the flag of the 115th Illinois, gained the crest and drove the Confederates down the southern slope of Missionary Ridge.

"About the time that Steedman's Division was thus put into action, another strong brigade of well-seasoned troops, under the command of a Mexican War Veteran, Colonal Van Derveer, reported to General Thomas at the Snodgrass House, and were immediately placed in the front in one line on the crest, relieving Brannan's troops (then almost exhausted), and posted next to the 21st Ohio's left, which still defended this flank on Horseshoe Ridge.

"By this acquisition of 4112 fresh troops under Steedman and about 1200 under Van Derveer, who had already rendered most creditable and opportune service on the Federal left wing and rear, Thomas was now strong in numbers and his whole command well supplied with ammunition; for another great service rendered by Steedman was the bringing up of ninety-five

thousand extra rounds of ammunition to be distributed among Brannan's and Harker's men, whose supply was nearly exhausted."

"The aspect of affairs on the heights was now completely changed, and the exultant Federals, who had been a few minutes before fighting in desperation, were reinforced with strength and courage like men who had won a victory. It was now that General Thomas resolved to hold his position and the army on the field until nightfall. He made his preparations for the purpose by general distribution of ammunition among both wings of his army. The Confederate division commanders on the left wing had received forcible knowledge of the material change in conditions by the arrival of reinforcements in support of the hitherto hard-pressed Federals on the heights. They now got together for the first time. Hindman and Johnson joined the brigades of their divisions with Kershaw's Brigade for two successive assaults in desperate efforts to gain the heights; for up to this time distinctly noticeable is the lack of unity of action on the part of these Confederate generals, due to the absence of any orders whatever form their wing commander, General Longstreet, and their inability to find him on this part of the field. Nay, more, questions of rank and precedence arose between them, which only General Longstreet's presence could have settled, and from 12 o'clock until now they had pulled in opposite directions.

"Nothing could exceed the intensity and desperation of the successive assaults which now followed, made by these seven Confederate brigades in line. Hindman mentions the fact that on his 'extreme left the bayonet was used, and men were also killed and wounded with clubbed muskets,' while Kershaw on the right effected a mometary lodgment near the crest, which drove the Federal from the sumimt; but the latter rallying all their available men, charged upon the South Carolinians whose colors were only saved by their bearer, who, after receiving a mortal wound, turned and threw the staff backwards over the works into the hands of his comrades.

"It was up to this time that Thomas, by virtue of his rank, used his discretion and held his men on the heights, by the example which he set them and the love which they bore towards

him. His antagonist, Longstreet, who for the most part of his time until now had stationed himself in the woods in the rear of his right division, Stewart's, at this juncture, first emerged therefrom in time to witness from Dyer's field the last desperate assault of Kersaw. Preston's division had at last been 'pulled away from its mooring on the river bank' and had been advanced, with his leading brigade in line facing north, bisected by the Lafayette Road, near the Poe house, with his other two brigades immediately in rear, also in line. Longstreet now got into the action in Dyer's field with his last division, Preston's, the strongest of all, which he had held in reserve. He still remained blind to the opportunity which had existed at noon and all afternoon, plainly evident to the Federal Generals, Wood, Thomas, Hazen and others. Why was it that he did not order the whole of Preston's Division directly forward along the Lafayette road, with Buckner's Reserve Artillery and the latter's other divisions, so as to fill the apparent gap of one-half to three-quarters of a mile between the Federal wings?

"There was in the same fringe of woods west of the Lafayette road, at this point, four other Confederate brigades, none of which had moved since noontime. Humphrey's Mississippi Brigade, formerly Barksdale's, which, under orders of the wing commander, was anchored at the 'Blachsmith Shop' and made no assault in the battle, the men begging in vain to join their comrades in the charge; then there were the Texas Brigade of General Robertson, Law's Alabama Brigade, under Colonel Sheffield, and the Georgia Brigade under General Benning, all three under the command of General Law, comprising a part of Hood's famous division, then located 'in line perpendicular to the road, to the left and slightly in advance of Preston and close to the burned house (Poe's).' Blind to his opportunity and ignorant of the weakest point in his adversary's line which appears to have been a continued source of anxiety to General Thomas that afternoon, General Longstreet ordered only two brigades of Preston's to Dyer's field, leaving the other third of the division, Trigg's brigade, at Brotherton's, for protection against the enemy's cavalry, supposed to be crossing the Chickamauga below Lee and Gordon's Mills, whom Trigg with two of his regiments 'was sent 1½ miles back to intercept,' on a

perfectly useless reconnaissance, wasting valuable time and energy only to discover that the alleged enemy was 'their own' Confederate General Wheeler's men. Gracie's and Kelly's brigades were then ordered forward to the relief of Kershaw and Anderson in a final and successful effort to gain the Heights of Chickamauga, and drive the enemy from his chosen stronghold which was made the 'keypoint' of the battle, first by the division commanders who followed the fugitives into the woods and mountains fastness and finally by the action of Longstreet himself.

"The assault of Gracie and Kelly had begun, preceded by 'a deadly fire on the right and right rear of the forces in front of Stewart.' The movement of this artillery, principally composed of the twenty-four guns of the Reserve Corps Artillery, and commanded by Major Samuel C. Williams, was in General Buckner's special charge under General Longstreet's orders, but it was not until Gracie had gained the heights that Longstreet ordered Buckner's advance northward, with a battery of twelve guns with Stewart's Division following, Longstreets object being not to drive this entering wedge between the two wings, so much as an effort to prevent the Federal left wing from reinforcing that part of their army which was posted on Horseshoe Ridge. Had Longstreet's orders to accomplish his object been given more promptly and more effectually executed, the reinforcement of Hazen's Brigade would not so opportunely have arrived in support of Harker and Brannan, nor General Hazen been rewarded with a major-generalship's commission for his act, which saved both Harker and Brannan from capture or annihilation. But it was long before this that General Thomas' watchful eye and attentive ear, of the trained soldier, forewarned him of the approaching storm and the danger to what he knew to be the weakest point in his army's position. It was also at this juncture, about 4:30 P. M., not later, that he received the withdrawal order from General Rosecrans.

"Heretofore, by reason of his being the ranking general on the field of battle, in the absence of any order from the commander-in-chief, Thomas had, in accordance with his resolve, used his power of discretion and maintained Harker's and Brannan's fugutive fragments at their position on the Horseshoe, assisted by the 21st Ohio, generously loaned Brannan on his urgent request to General Negley, and had saved these men on the heights and the whole army from immediate destruction, until Steedman's and Van Derveer's arrival.

"Another crises now ensues. At the actual and relative time of Gracie's advance in magnificent array, as recognized in the Official Reports of Federal officers on the Horseshoe and described with much admiration personally to the writer by some of them (General Boynton included among the number), General Thomas now received Rosecrans' first dispatch, directed to himself, ordering withdrawl, and as proven by thirty of our witnesses aganst the testimony of only one to the contrary, the evidence in fact being unanimous on the subject, General Thomas did not and could not delay one moment his obedience to the order, and forthwith dispatched his aid, Captain Barker, for Reynolds to make a beginning of the movement. Orders were also dispatched to the other left wing division commanders for their withdrawl successively. This was a wise move, to begin the withdrawl at this quarter, because of more precarious situation on his left wing, which at this juncture was within a few hundred yards of being completely enveloped by the Confederate lines.

"Thomas left the Snodgrass house before Gracie took possession of the heights, leaving General Granger the only corps commander on the battlefield, and by virtue of his rank, in command of the troops under Harker and Brannan, as well as his own men under Steedman; but Granger's personal departure seems to have been timed by the very first indications of Confederate success in driving Harker from the heights. Thus General Thomas 'quit when orderd and because he was ordered.' Meanwhile the withdrawl of Reynolds had already begun before Barker's arrival with the order. General Reynolds is quoted as saying, in his position at the breastworks that his only alternative was surrender. When his division reached the Lafayette road, General Thomas saw him. Putting himself at the head of Reynold's Division, General Thomas led his army in the movement of withdrawl.

"As before mentioned, the Confederates had nearly enveloped the Federal left wing; the front brigade of a division of

the right wing had reached the vicinity of the Kelly house, passing in rear of the Federal divisions of Baird and Johnson. Thomas himself ordered the charge and the division cut its way out. At the same time the way was made clear for the escape of the other divisions of the Federal left wing, most of whom were retired in great disorder,.

"Reynolds, misunderstanding Thomas' order, moved straight along the Lafayette road toward the Rossville Gap, not halting with his section of the division until checked at Cloud Church by Forrest's cavalry, while Thomas separating E. A. King's Brigade from the rest of the division, wheeled to the left near McDonald's house and reached a point of safety on the Ridge road at the head of McFarland's Gap. Here he halted and sent his orders for the withdrawal of the rest of the army, which he had left on Chickamauga Heights, and which had been driven therefrom before his order arrived. He thus obeyed to the letter General Rosecrans' orders to withdraw. The most direct route of withdrawal to Rossville was by way of the Lafayette road and Rossville Gap but, in accordance with the wording of Rosecrans' order, he moved toward McFarlands' Gap to 'join his army with Crittenden and McCook,' whose forces were then known to him to have been in that neighborhood. Finally, the full letter of obedience to Rosecrans' order was followed when he 'assumed a threatening attitude' by the formation of his line to resist pursuit and protect the withdrawal. This alignment extended from the head of McFarland's Gap to the Lafayette road and Cloud House, nearly to Rossville Gap. This alignment was completed about 5:30 P. M., and shortly thereafter General Rosecrans' second dispatch, sent through the medium of General Garfield, again ordered him to retire on Rossville, provided his troops were 'retiring in good order'. General Granger was present with Thomas, and here learned for the first time Rosecrans' command to retreat to Rossville." (Page 145, Gracie.)

Colonel Gracie adds, "It was also in the vicinity of the Cloud House that General Sheridan at 5:30 P. M. reported his arrival at Thomas' left, * * * He had received a terrible beating at noontime on the extreme right flank of the army, suffering a loss of over 30 per cent., yet he gathered and rallied

in the woods more than half the scattered remnants and brought them into line again at the extreme left flank of the army, ready before sun down to go into action again Sheridan's statement is that when he reported to General Thomas for action the latter replied that his lines were too disorganized and withdrawal was necessary." There is no shadow of doubt that Sheridan marched to Rossville after the debacle of the morning, and obeying an order sent by Rosecrans from Chattanooga at 5 P. M., he followed his original intention of moving out upon the Lafayette road, reaching a point three miles distant, where he halted on finding that it was too late to render assistance. Colonel Gracie states further that General Thomas, directed Sheridan, that; "instead of advancing further 'the 1500 gathered' should be reformed on the Lafayeette road at Cloud house and aid in covering the withdrawal to Rossville." (Page 110, Gracie.) General Davis joined Thomas' right by way of McFarland's Gap; too late, however, to take part in the engagement.

In no part of his history does Colonel Gracie neglect to defend those who he thinks have been unappreciated or unfairly criticised, nor does he permit those whom he believes to have been negligent of their responsibility to escape his reproof. He declares that Negley's withdrawal of the two small regiments left him, in charge of the artillery reserve, was timely and judicious, for the guns might be, and probably would have been employed by the enemy against our retreating columns; that whole regiments were lost or imperilled by officers who employed them to cover the retreat of their own commands; that many of those who were doing their whole duty in a courageous and faithful mannner were censured and maligned; and all this without fear or favor. His readers must judge from the authorities he quotes, how impartial he has been in discussing a vast number of vexed questions, which up to this time have not been solved.

About an hour after Granger had left McAfee's Church to aid General Thomas with Steedman's brigade, Colonel Dan McCook, who was during the two days under the direct command of Granger and Thomas, and whose every movement met with the commendation of both, was ordered to report to Granger via the Lafayette road. As the brigade was about to pass the

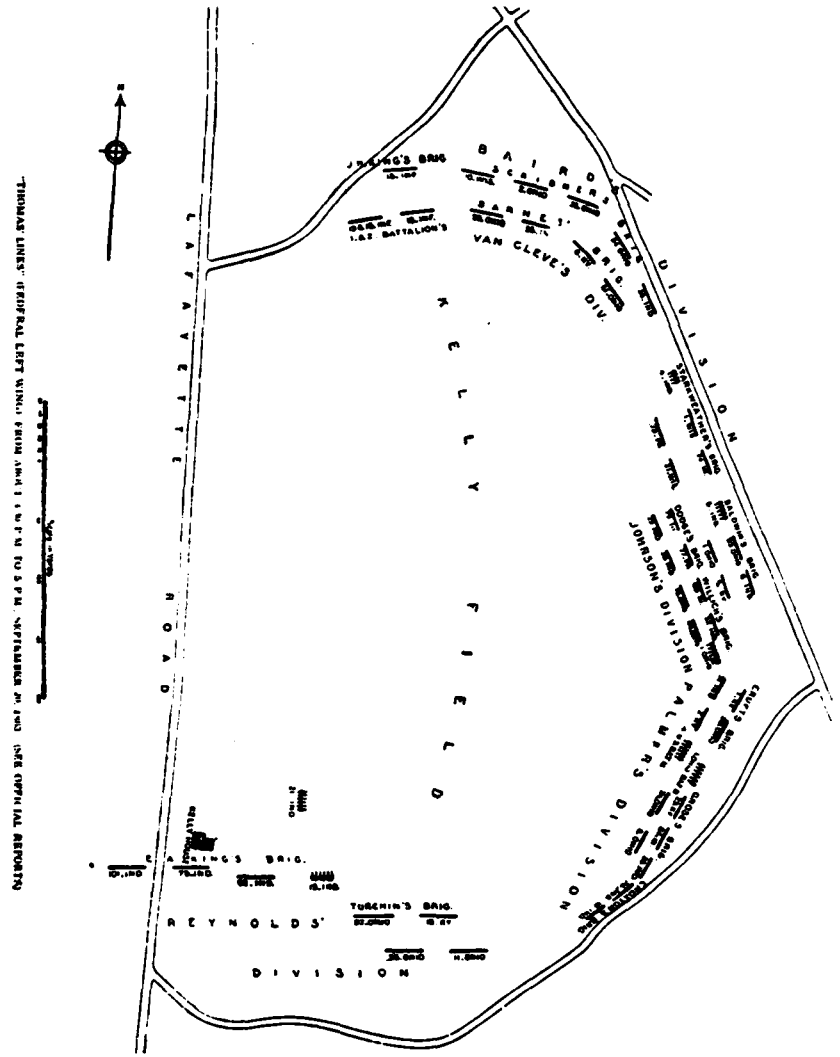
McDonald House, Colonel McCook ordered Captain Edward L. Anderson, his adjutant, to hasten forward to announce the approach of the command. Driven from the road by the fire of small arms and artillery Anderson turned to the right into the fields near McDonald's. Here he was met by Major Joseph Fullerton, of Granger's staff, waiting for McCook. At this moment the brigade, which had been marching by the right flank without an advance guard, was driven from the road by the artillery of the enemy to the heights behind the McDonald House. Fullerton waited to see where McCook would take position, while Anderson galloped forward and found General Thomas under a large tree near the Snodgrass house. General Thomas was perfectly calm, but Granger advancing from near by was weeping for the death of his Adjutant Russell, who had been killed but a few moments before in stationing Steedman's troops. This was about 2 P. M. Fullerton then arrived, and reported to Thomas that McCook's brigade, which he had noted from some distance, was posted on the crest of the ridge, apparently in perfect order. General Thomas remarked that "it was a happy chance, for McCook was just where he wanted him to protect our left flank and rear" and directed Captain Anderson to go to McCook with orders to remain where he was and hold the position. The wisdom of this decision was shown later in a remarkable manner, for it proved the rescue of the army, as will afterwards appear, and McCooks' brigade, by offering a threatening front in a commanding position and by use of its battery, performed greater service than it did even in the glorious Atlanta Campaign, when out of a brigade averaging about two thousand men it lost, at Kenesaw, Peachtree Creek, Jonesboro, and in many smaller engagements, three commanders and 1,089 good soldiers, killed or wounded. No officer, staff, or other, placed McCook upon the crest of Cloud Hill, as every member of the command well knew. His troops were simply driven from the road, and under the Colonel's hurried orders sought the crest of the hill which so timely and unexpectedly offered itself; the movement was unpremeditated, unforseen affair, that was as quickly begun as the report of the first gun sounded, and the men answered as readily, but in an orderly manner.

Rosecrans' dispatch directing Thomas to withdraw the army, and form a defensive line with Crittenden and McCook whom the Commander-in-Chief supposed to be somewhere in Thomas' rear, was sent from Chattanooga at 4:15 P. M., and was received before 5 o'clock as we knew from actual and constructive time. General Thomas immediately repaired to Kelly's field to hasten the movement. But a singular state of affairs had taken place in the left wing before Thomas' arrival. For some hours previously no word had been received from Thomas, and a consultation had taken place between the four division commanders and other officers of rank regarding the condition of their commands. This is not described in Gracie's book, but it is too important to pass over.

"There had been no intimation to the four commanders on the left—Baird, Johnson, Palmer and Reynolds—that everything had not gone well with the right. They could get no message from Thomas for two or three hours. At this juncture, fearing another assault by the Confederates, and supposing that Thomas had been cut off from them, Palmer, Johnson and Reynolds consulted with Baird and proposed that Palmer, as senior ranking officer, be placed in command of their four divisions and march them off the field. But Baird refused to join them, preventing this calamity." (Chattanooga Campaign, Col. M. H. Fitch, Bairds' Inspector General, Page 111.)

"About this time it was quiet on our front, and quite a number of general officers were congregated discussing the condition of the fight, among them two Major Generals, Reynolds and Palmer; and it was urged that we ought to have a general commander for our four divisions. Reynolds, the senior declined positively to assume it, remarking that it would be only assuming a disaster which was certainly impending." (A Military Narrative, by General W. H. Hazen, page 131.)

"The commander of one of the divisions near my own, approached me and said I was the ranking officer on the field, and that I ought to order a retreat of the divisions on the left to Chattanooga. At the moment the prospect did appear gloomy, and I was inclined to apprehend that matters were as bad as he supposed them to be. I told him, however, that if it was true that the rebels had defeated our right and center of the army,



and captured or killed Rosecrans, Thomas, McCook and Crittenden, so far as I was concerned they might have every man of the four divisions they could take; that we would cut our way to Chattanooga; that I would rather be killed, and be d——d, than to be d——d by the country for leaving a battlefield under such circumstances." Personal Recollections of General John M. Palmer, pages 183-184.

Shortly after this consultation Hazen was given permission to take his brigade to look for the right wing. About 5 o'clock he came upon Harker's "hard pressed brigade," on the open crest about the Snodgrass House, a few hundred yards in rear of his original position on the east hill of Horseshoe Ridge, whence he had been driven about 5 o'clock by General Archiblald Gracie who had gallantly taken possession of the long sought point of advantage. Hazen who had skirmished over from Kelly's field with a front of two regiments, together with Harker and a section of the 18th Ohio Battery checked the enemy's pursuit. Here Opdycke, "the bravest of the brave" was conspicuous in his gallantry and his regiment, the 125 Ohio and the section of the 18th Ohio Battery, formed the last fighting line. Steedman had fallen back from the main ridge, with Bushrod Johsnon between him and the Horseshoe. Brannan exposed on both flanks, was the last to leave the crest, retiring in rear of Snodgrass House; and by 6 o'clock the enemy had full possession of the stronghold so faithfully defended.

That is to say, the whole of Horseshoe Ridge was in possession of the brigades of Trigg, Kelly and Gracie, the only Federals remaining being the three captured regiments, 89th Ohio, 21st Ohio, and 22d Michigan, and a temporary stand of the 9th Indiana, which Gracie alleges had been sent to take possession of the middle hill, and that Brannan did this to distract the attention of the enemy, as was his abandoment of the captured regiments, to cover the "stealthy" withdrawal of his troops.

When about 4:30 P. M., General Thomas reached the southern edge of Kelly's field he found Reynlods already moving off in column of fours, while beyond him a compact body of the enemy was passing south towards the rear of Baird, Johnson and Palmer. General Thomas at once commanded Reynolds to form line, face to the rear, and charge on the advancing foe.

Turchin now made the charge which should live in history, as with wild cheers his brigade fell upon the Confederates and drove them more than a mile, uncovering the other three divisions. Barnett's Battery, of Dan McCook's brigade, aided Turchin in this attack and covered his retreat, when Reynolds and his troops found "shelter" behind McCook's brigade. Here were also the brigades of Robinson and Willich, and with these three commands General Thomas formed the nucleus of that front upon the line of hills that permitted the remainder of the army to withdraw by way of the 'Ridge Road,' to McFarland's Gap and Rossville.

Had McCook's brigade not been interrupted in its march to the front by an enemy which drove it to "the commanding position" south of the Cloud House; who can say what would have been the fate of the Army of the Cumberland? Had Turchin failed to return, the Confederates would have crushed the left wing in flank and poured masses in rear of the gallant men who had held the Horseshoe Ridge. Colonel Gracie remarks (page 114), "It can not be doubted that this position occupied by McCook's Brigade and Barnett's Battery was developed into one of the most important keys to the safety of the whole Federal Army, holding in check cavalry, infantry and artillery forces of the Confederate right. For on the Confederate right Forrest's Cavalry and troops of Breckenridge's and Liddell's Divisions overlaped the Federal left under Baird. Steedman's opportune arrival had pushed aside Forrest's dismounted cavalry, thus preventing the junction via McFarland's Gap and the two Confederate wings; and nothing but McCooks' Brigade and Barnett's Battery remained behind after Steedman to guard this threatened catastrophe—the surrounding of the Federal Army and blocking its withdrawal through the passes to Rossville." For these services the brigade was handsomely commended by General Thomas.

"They also serve who only stand and wait."

A few more words about the withdrawal of the troops from the field. It has been officially reported that no command except the brigade of Colonel Cruft had the good fortune to leave Kelly's field in perfect order. Johnson was fighting at the time the order came, but his right was exposed and he had to obey,

and reports that he owed the safety of his command to Willich's masterly movements; Baird's division which had borne much of the burden of the two days, owing to its exposed position on the extreme left of the line, again suffered severely in killed, wounded and prisoners; one of Grose's regimental officers on the left reported that his command had been crushed, so that Grose Palmer and Thomas were forced to recognize that Grose retired in "some confusion," when we know from the reports that the 36th Indiana and 6th Ohio withdrew in line of battle and turned to fight (as many of the men have told the writer); but Cruft goes down in history through his various superiors as having withdrawn in perfect order. It is evident from his report that Cruft, seeing Reynold's retreat, left the line before the last attack, which scattered Grose's left, and he therefore had a mere parade in reaching the shelter of the woods. (O. R. 50, page 733.) There was more or less confusion in all the other divisions after Reynolds withdrew.

After the troops from Kelly's field were on the road to McFarland's Gap, the heroes of the Horseshoe Ridge were safely withdrawn, except three regiments, (21st and 89th Ohio and 22nd Michigan) which were not notified to retreat and were captured, and the 9th Indiana narrowly escaped when it was ordered to make a vain endeavor to regain Hill No, 2. (the middle one); and the last shots fired at Chickamauga were between Lieutenant Colonel Henry V. N. Boynton's 35th Ohio and the 6th Florida. Henry V. N. Boynton was a gallant and efficient officer, a medal of honor man, one who distinguished himself on many fields.

Hazen followed the troops through McFarland's Gap as rear guard. Colonel Dan McCook's Brigade was the last command to leave the field of Chickamauga, sending two six-gun discharges from Barnett's Battery, in the spirit of defiance, by the personal orders of Granger, characteristic of that erratic officer, who appeared on foot about 6 P. M. An hour earlier General Baird suprised McCook by the information that the whole army was being withdrawn from the field. At 8'clock McCook's Brigade retired, unmolested to Rossville, reaching its bivouac about midnight, or later. (See H. J. Aten's admirable History of the 85th Illinois.)

In February, 1865, the author of this review, on his return from the Battle of Nashville, paid a visit to General Scott, in company with his uncle, Robert Anderson, a former aide-de-camp to the old Chieftan. General Scott was enthusiastic in his praise of Thomas, and turning to my uncle, said: "Robert, you have always known my opinion of George Thomas. Now I wish to say that, in my opinion, the Batlte of Nashville was the finest piece of grand tactics of the Civil War." Had Scott lived to know all the mysteries, now revealed, of the Great Battle of Chickamauga, such as the defence of Horseshoe Ridge, of the charge personally demanded of Reynold's Brigade, of the successful withdrawal of the troops in the face of a victorious enemy, of the quickly arranged stand at the head of McFarland's Gap, in what words could he have expressed his opinion of the strategy and tactics of his old favorite, who has proved himself one of the greatest captains of modern times.

Thomas' genius seemed to render him prescient for he was, always present at the critical moment, with a coolness that gave him instant, perfect control of his best judgment.

Truly, as Colonel Gracie remarks: "As the leader of the Federal Army, in its escape from complete annihilation, he received the crown of glory to which he was entitled."

While Colonel Gracie's book may not give the last word about the battle of Chickamauga, it exhibits a concientious and laborious effort to harmonize and reconcile the many statements regarding this great conflict into a fair and acceptable narrative, in which it must be admitted he has succeeded most creditably. He has gone to the Official Reports and to reputable witnesses for his facts, and whether or not we accept all his deductions, we have before us *The Truth About Chickamauga* as it is understood by an impartial observer.

NOTE.—The following named commands and fragments, some of which were mere squads, but which did honor to their regiments, fought on Horseshoe and connecting Main Ridge from about 2:30 P. M. to 4 P. M., September 20, 1863.

Beginning on the right (west); Steedman's Division, consisting of Colonel John G. Mitchell's and General Walter Whittaker's splendid Brigades, 22d Michigan, 21st Ohio, General Van Deveer's invincible troops, 87th Indiana, 58th Indiana, 17th Kentucky, 9th Kentucky, 19th Ohio, 79th Indiana, 14th Ohio, 4th Kentucky, 10th Kentucky, 13th Ohio, 19th Illinois, 18th Ohio, 11th Michigan, 44th Indiana, Harker's Brigade on the extreme left (east). Generals Steedman, Brannan, Wood and John Beatty were with their troops, and the divisions of Negley and Van Cleve were represented. The 18th Ohio battery, Lieutenant Frank G. Smith, U. S. Artillery, was on the line with the Snodgrass House.

CONFORMATION OF THE HORSE.*

BY GERALD E. GRIFFIN, VETERINARIAN THIRD FIELD ARTILLERY.

THE HEAD.

THE head of the horse, viewed in profile, should have an appearance of leanness and should exhibit a good depth of jaw, for the reason that leanness of the head is indicative of good bone and breeding, whilst depth of jaw in a lean head is evidence of good masticative power which is an aid to good digestion.

The muzzle should be velvety in texture with the lips firmly closed over the teeth and the nostrils large, and thin around their edges. A hanging or penduluos lip points to sluggish disposition, as a rule, whilst a small thick edged nostril is coarse in texture and has not sufficient expansion to admit the necessary amount of air to the lungs at the fast gaits; moreover, it may be observed that horses with small nostrils exhibit small caliber of windpipe and defective chest expansion.

The face should be straight and wide between the eyes, a conformation which leads to the assumption that the cavities of the head (sinuses) through which much of the inspired air passes are roomy.

The ears should be in proportion to the size of the head and when the animal is at attention they should be constantly on the alert; "*lop-ears*" are unsightly and usually bespeak lack of energy.

The head, considered as a whole, should not be out of proportion to the body, if too large it acts as an exhausting weight to the neck and shoulders, especially when the animal is fatigued and such a head is a fruitful cause of stumbling; if too small it will be found to be narrow between the eyes and ears—a sign of

*Extracts from lectures to the Line Class of the Army Service Schools, 1911-12.

restricted brain space—and possess small nostrils and shallow jaws. A head is said to have a "*Roman nose*" when the face is convex as it approaches the nostrils and is said to be "*dished*" when it presents a concave face line. A "*coffin-face*"—coffin shape—may be observed on a large, bony head when viewed from the front.

THE EYES.

To afford a wide field of vision the eyes should be set well to the outside of the head, but the eyeballs should be neither too prominent nor too deeply set in their sockets. "*Pop-eyed*" horses are usually shyers while "*sunken-eyed*" ones are usually dull and stubborn and do not see well to the side and rear without turning the head.

THE SPACE BETWEEN THE JAWS.

The space between the branches of the jaws, the jowl, should be large enough to admit the clinched hand so as to afford sufficient room for the top of the wind pipe (larynx) and to enable the animal to properly flex the head from the poll without bending the neck and thus getting "*behind the bit.*"

The glint of the eye, the set of the ears, the quiver of the nostrils, the texture of the muzzle and the distance between the eyes and ears are fair indications of the animal's breeding, disposition and energy when intelligently considered.

SET ON OF THE HEAD.

The set on of the head is an important matter in a cavalry horse when control is considered. An animal showing thickness around the throat and narrow between the jaws almost invariably pulls hard against the hand, while those having apparent thinness and looseness of the throat muscles which give an impression of lightness when viewed from the side, are usually light in hand after training, if this seeming looseness is combined with plenty of space between the jaws. Such a throat is not defective in muscles for when viewed from the saddle it will be seen to be strong and firm to the poll.

THE NECK.

An "*Ewe neck*" is one shaped like that seen on a shorn sheep. Such a neck is unsightly and horses possessing it poke the nose upward when bitted—"*star gazer.*" A "*cock*" or "*swan necked*" horse is one having the neck set on like that of a fowl, such an animal carries the head too high to be trusted in riding or driving at a fast gait over rough ground. A "*bull neck*" is a short, thick, strong and rigid one which is a conformation not desirable in a saddle horse, although not so objectionable in an artillery wheel horse, if the shoulders are sufficiently well developed for the collar. "*Bull necked*" horses generally lean hard on the bits at all gaits and get out of hand readily.

The line from the poll to the whithers, to which the mane is attached—"*the crest*"—is often over-developed and when it lops over to one side it shows that it gives additional weight for the fore-legs to carry, and as these same fore-legs are forced to support more than half the weight of the animals' body and usually three-fourths of the weight of the rider they should be favored as much as possible when the head and neck are taken into consideration.

Length and reasonable lightness of neck should be looked for in saddle horses intended for fast work, for the reason that the muscles which lift forward the shoulder lie along it and length of muscles, as a rule, means ease and quickmess of movement; for artillery horses a strong, fairly short, bulky neck is usually regarded as proper as it enables these animals to go vigorously into the collar without irritation. It should be remembered, however, that a heavy muscled neck gives an impression of shortness.

The necks of all horses should be sufficeintly strong and muscular to properly sustain the weight of the head and at the same time pull forward the foreleg. The muscularity of the neck is made evident when viewed from the saddle, a light looking neck will often be found to be exceedingly well muscled when viewed from this vantage point; whilst a weak neck looks thin and lacking in strength.

The crest should be firm and form a slight curve, with a slight dip just in front of the whithers. The lower part of the

neck surrounding the windpipe and gullet should be loose but firm to the feel.

In saddle horses the neck should slope nicely into the shoulder, as this conformation admits of easy play of the forehands; but in artillery horses this should be a well developed triangular surface extending from the whiters to the point of the shoulders and this surface should be heavily muscled to afford a seat for the bearing surface of the collar.

It is erroneous to suppose that because a horse is too big and sluggish for cavalry he will do for artillery. If such an animal was fitted for artillery in the first place the chances are that he would not have been assigned to cavalry, good artillery horses being very scarce and expensive. Heavy cavalry undesirables usually have shoulders unsuited for artillery.

The forelock and mane is straight and spare in well bred horses; a heavy curly mane and forelock is considered by horsemen to be indicative of coarse breeding.

THE BREAST.

The breast commences at the termination of the lower part of the neck and comprises the region included between the points of the shoulders and the beginning of the front of the forearms. In its central portion is located the breast bone which passes between the forearms and terminates on the under aspect of the chest on about a line with the points of the elbows.

The breast should be of medium width and should be well and smoothly muscled; if very narrow it points to a narrow flat chest which permits the forelegs to approach each other so closely that "*interfering*" or "*brushing*" of the ankles with the hoofs may take place at the trot.

When the breast is too wide it is usually indicative of too much arch and insufficiency of depth to the ribs.—"*barrel chested*"—and this conformation, which places the forelegs too far apart, causes the animal to "*paddle*"—throw the hoofs well outward—at the trot; such a conformation and such a peculiarity of action detracts from speed and nimbleness and renders the saddle motion uncomfortable. Breast and chest are separate regions.

THE WITHERS.

The withers begin to rise from the slight dip at the point where the top of the neck ends, attain their maximum height between the shoulder blade and then slope gradually into the back; this peculiarity of formation being due to the disposition of the spines of this region of the spinal column—backbone—which rapidly increase in length from the first to the third or fourth, retain an even length to about the sixth and then gradually diminishes as they slope into the back. At their extreme height they lie close to the skin and are easily injured by undue pressure.

The withers of a riding horse should be of medium height and should not be too narrow, too fine or too thick; if too fine and high they are usually narrow and the saddle with its tendency to work forward, due to the slight incline of the muscles of the back from loins to shoulders, is apt to cause contusions, if no worse, through the medium of the pommel arch of the saddle. High, narrow withers afford an excellent opportunity for the blanket to slip to the rear with the lay of the hair even though the saddle has a tendency to work forward.

Low, broad withers whilst less objectionable than high, narrow ones are apt to be pinched by the front of the side bars of the saddle which may also interfere with the play of the upper part of the shoulders and this interference with defective withers is a fertile source of leg weariness and even lameness in front when the full pack is carried on long marches.

THE BACK.

The back, which extends from the withers to the loins, consists—outwardly at any rate—of a thick pad of powerful muscles extending several inches on each side of the spine, and on this muscular pad, which has the upper portion of the ribs for a foundation, the whole weight of the saddle, pack and rider must rest, the withers and loins being unsuited for sustaining much weight.

The best back for military purposes is a short, strong well muscled one showing a level surface from behind the withers to the loins; a long back is, as a rule, weak and is generally associated with shallow "*floating*" ribs and weak loins whilst

short muscular, strong backs accompany powerful loins and well "*ribbed up*" bodies both of which are indicative of strength and "*bottom.*"

A back is termed "*swayed*" when it is unusually concaved; it is known as "*roached*" when it has a conformation resembling that of a hog's and is designated as "*razor*" when it exhibits a sharp edge along the back bone.

"*Swayed*" backs are poor weight carriers, are not well muscled and are easily galled; "*roached*" backs are strong but are difficult to saddle properly without tight cinching, whilst "*razor*" backs are generally the result of hard service on small rations which is responsible for the shrinking of the muscles of the back as well as the other regions.

THE LOINS.

The loins extend from about the place where the rear fold of the saddle blanket usually lies to a line drawn across the points of the hips.

The office of the loins is to place the weight of the body and load on the hind quarters to such an extent that the forehand may be enabled to move freely upward and forward. They should be broad, short and muscular as they assist materially in sustaining the weight of the head, neck and shoulders at the walk, trot and gallop.

Long, narrow loins are generally weak ones and are easily fatigued. When fatigued they are unable to function properly at the fast gaits while under pack conditions, and stumbling in front and "*disuniting*" behind are soon made manifest.

A horse "*slack*" in the loins is an uncertain and poor jumper who usually hestitates and flounders at his hurdles. Skeletons of long, weak loined horses frequently show one extra vertebra in this region of the spinal column.

THE BODY.

The body includes the flank, belly and chest and its shape is dependent on the spring and depth of the ribs and the length of the back and loins. Some horsemen refer to the girth around the flanks as "*the barrel.*"

THE RIBS.

The ribs should spring out well from the back bone and should show depth from the spine to the breast bone in order to afford plenty of room for the lungs and heart; they should extend well back to near the point of the hip, such a conformation being known as "*well ribbed up*" and "*short coupled.*"

At the termination of the breast bone, underneath the chest and about on a line with the point of the elbows—the "*cinch place*"—there should be a slight depression due to the upward and backward curve of the cartilage of this bone; such a "*cinch place*" affords a good seat for the cinch even with poor backs and eliminates the use of the split or corded cinches the strands of which are intended to bury themselves in the hair and skin and thus prevent slipping forward and backward.

Horses with poorly arched ribs are known as "*slab sided.*"

From the "*cinch place*" to the stifle the belly should have a very slight upward tendency and should be plump and full in outline, depending of course on the animals condition of flesh. When it runs up between the legs like a greyhounds it is known as "*washey*" or "*tucked up*"; if distended and pendulous it is termed "*pot belly*". A "*tucked up*" belly is often an evidence of weak digestion and poor "*bottom*" whilst a "*pot belly*" spreads the riders legs unnecessarily which is unpleasant at any gait.

The body for military purposes should be "*deep through the heart,*" should have deep "*floating ribs*" and should be "*well ribbed up.*" Shallow bodies lacking in depth and having bellies running up light behind are unable to stand the strain of hard field service, whilst "*slab sided*" bodies are usually narrow, are deficient in lung expansion, strong heart action and have the front legs so close together that "*interferring*" may be expected.

THE FORE LEG.

A good shoulder should start from withers of medium height and thickness and possess a long, fairly well sloped shoulder blade which should be well muscled and smooth in its entirety. When the shoulder blade is long and well sloped it will be found that the distance from the "*point of the shoulder*" to "*the point of the elbow*"—the arm—is quite short; the converse of this is true. Shortness of the arm is a desirable con-

formation indicating as it does that the shoulder blade is long and sloping.

The muscles which fill up the space behind the "*point of the shoulder*" should be large and powerful as their function is to draw backward and upward the leg from the elbow down.

"*Upright shoulders*" are those in which there is not sufficient slope; "*short shoulders*" are those lacking in length. The former while fairly well suited for draft purposes, if the collar bed is sufficient, lack the necessary spring and elasticity so essential in a saddle horse; the latter are deficient in the length of muscle so necessary for quick and graceful movement.

Good shoulders should be well set back on the ribs for if they are set forward on the neck, even if otherwise good, they permit the weight of the load to be thrown too far to the front thus overloading the forehand.

The forearm should be long and well muscled, and if the arm is short, the forearm will be long. When inspected from the side it should be broad at the elbow, a conformation that shows good attachment for the heavy muscles behind the shoulder blade, and its muscles should be well outlined and taper gradually to the knee.

Looked at from the front it should be narrow with bulging muscles on the outside and clean and hard on the inside where the bone is next the skin.

The knee should be large broad and flat in front, deep from front to rear and the knob of bone at the back should be large and prominent. A large knee offers plenty of room for the attachment of the strong extension and flexor muscles of the cannon.

When the line of knee deviates backward it is known as "*calf knee*" and when it is decidedly convex in front it is termed "*over at the knee*" or "*knee sprung.*" "*Tied in below the knee*" is a term used to indicate that the measurement across the cannon and tendons immediately below the knee is smaller than the same measurement taken lower down; such a knee does not stand hard usage especially over hurdles with a good weight up.

When the cannon shows good measurement, it is said to have "*plenty of bone,*" but this measurement includes the tendons so that the trem "*plenty of bone*" should mean that there is plenty of room for them and that they are well developed.

"*Filled*" or "*gummy legs*" are those that do not show the clean straight outline of the "*back tendons.*"

The pastern should be strong and of medium length and sloped short. Upright pasterns do not absorb the concussion and if the shoulder blade is upright also the animal is said to be a "*pounder*". Long sloping pasterns usually accompany a very long, sloping shoulder and while they possess plenty of elasticity and are pleasant riding at all gaits neverltheess they are not good weight carriers and quickly show fatigue.

THE FOOT.

The hoof should be of bright dense, healthy, horn without cracks or ridges and it should be in proportion to the size of the animal; it should be placed squarely on the ground and should not toe in, "*pigeon toed,*" neither should it toe out, "*soldier toed.*" Horses that toe in in front usually have a short mincing trot, while those that toe out in front throw their feet well outward at this gait and are known as "*winders;*" these "*winders*" are uneven in their stride and unsafe at the jumps, their take off being clumsy and uncertain.

In horses that toe out it may be observed that the elbows turn in toward the chest. Horses with narrow hoofs are said to be "*mule footed*" those with wide flat hoofs are often designated as "*splay footed;*" both forms are undesirable.

The sole—ground surface of the hoof—should be well concaved and the frog—horny sole pad—and bars well developed; such a ground surface is able to go safely for a long distance if a shoe is lost, whilst a sole with small thready frog, and weak bars inflection of hoof wall at heels is more subject to bruises and is unable to withstand the contact of the road for many miles without a shoe.

The heels should be well developed and should bulge slightly while the coronet should be smooth, clean and of an oily feel.

The condition of the hoof is a fair indication of the general health of the animal; a clean, healthy looking hoof indicating good health of its owner for at least a year previous—the time it

takes the average hoof to renew itself—whilst ridges suggest attacks of inflamation or disturbances of the digestive tract within the same period.

THR HIND LEG.

The quarters should be strong and heavily muscled running straight from the croup to the root of the tail, if possible, although a slightly "*drooping quarter*" is not objectionable and is charateristic of many excellent Irish hunters. When the droop is very prominent it is called "*goose rump*" and such quarters are not strongly enough muscled to propel the body and its loads forward without undue fatigue.

The thigh, from stifle to hock should be long and well muscled so that the leg may be placed promptly and securely beneath the body when in motion. The bunch of muscles found at the lower and outer part of the thigh is often alluded to as "*the gasking*" and the thick, strong tendon running from the muscles at the back part and which is attached to the point of the hock is known as the "*hamstring*" or "*tendon of Achilles.*" A horse lightly muscled between the thighs is known as "*split-up-behind.*"

The hock should be large and clean and the point should be prominent and well developed; from the point the back tendons should drop in a stright line to the fetlocks without bulging at the "curb place" which is about six inches below and in a line with the point. The inside aspect should be deep and clean, showing no enlargement over the "*spavin place,*" but it should exhibit a prominent knob of bone where the thigh bone ends. When the hocks lean toward each other they are termed "*cow hocks,*" and when they are bent under the body they are known as "*sickle hocks.*" When the thigh slopes well backward and the hocks placed well to the rear, the conformation is designated as "*cat hams.*" Large strong hocks afford good attachment for muscles and are better able to stand the strain and weight put on the quarters than light smooth ones. "*Cow hocks*" are generally weak and their action is defective at all gaits; "*sickle hocks*" generally reach too far under the belly and are consequently poor propellers, although if the back tendons are large and strong their owners are good at the fences, other

things being equal. "*Cat hams*" give a stilty motion to the gait at the trot and with this conformation the animal is very apt to become disunited at the leads.

Considered as a whole the hind legs skould be in proportion to the other regions of the frame, they should be well muscled, possess good length and depth of quarter with long straight dropped thighs and hocks and good, clean well defined tendons. When it is remembered that the hind legs are body propellers and that they are frequently called upon to endure severe strain in maneuvering, galloping, jumping and holding back in the wheel it will be realized that good strong hocks are essential to continued soundness behind.

From the hock to the hoof the conformation is essentially the same as in the foreleg, except that the hoof is usually smaller and narrower and the slope of the pastern greater.

DAILY DIARY OF EQUITATION WORK AT THE MOUNTED SERVICE SCHOOL.

FOR THE MONTH OF JUNE, 1912.

TRAINING CLASS.

Schedule June 1st to June 15th—about 1½ hours per day.

1. Outside 1 hour: Road work, canter, and ¾-mile gallop at 20 miles per hour.
3. Outside 1½ hours: Put on bit and bridcon, with curb chains very slack. Easy road work to accustom horses to the bitting. Light training work.
4. In hall 1½ hours: Testing colt individually through all the exercises.
5. In hall 1½ hours: Test of training and jumping. Jumps 3.ft. 8 in.
6. Outside 1 hour: Road work and gallop.
   In hall: Tests on training and jumping.
7. Same as 6th.
8. Lecture by Senior Instructor instead of usual ride.

10, 13th. Training for graduation ride, 1½ hours per day.

14. Graduation Ride. The ride of this class was intended to to show the steps in the training of a charger, taking it up from where the Breaking Class left off and continuing to where the schooled horses took it on. The following exercises were shown briefly but in a clear cut, definite manner; individual circles on forehand half turn in reverse, changes of gaits, the halt from each of the regulation gaits, and taking each gait from a halt, the drill by threes showing turns to right and left, about on forehand and on the haunches, haunches right and left, two tracks right and left oblique at school trot, the gallop in column with change of lead on changing hands; individually each rider executes a figure of eight at canter with two changes of leads at the canter; in column, the halt in line from a gallop, swinging from the track by the flank. For the jumping exhibition four jumps were set,

two small fences and two bar jumps 3ft. 10 in. The rider took the track on the left hand and after the second jump changed hands and changed leads and took the next two on the right hand. The two larger jumps were faced to the main gallery. The colts were required to maintain an even canter all the way.

SCHOOLED CLASS.

Schedule June 1st to 15th—about 1 hour per day.

3. In hall 1 hour: Executed the exercises with a good deal of collection demanded. Jumped one 3-foot hurdle several times.
4. In hall 1 hour: Review, same as 3d. Outside 1 hour: For walk and grazing.

5-13th. Practiced for the Graduating Ride. After forming track, on right hand at the trot, the movements were as follows: (*a*) large circle and spiral; (*b*) haunches in and shoulder in (at slow trot); (*c*) by left flank, backward, forward, slow trot and by right flank; (*d*) with right lead canter, by threes, by right flank, backward, forward, and with the left lead canter, track to the left; (*e*) on haunches, individual circles; (*f*) by threes by left flank, left oblique, change lead and take track to right; (*g*) counter gallop (canter); (*h*) slow trot, canter, change hand and change lead in center of hall; (*i*) by trooper on two tracks to center and change, change lead again at track; (*j*) all walk except leader of first platoon, individual change of lead; (*k*) canter with distances between threes extended, threes column left and form three circles, take track and slow trot at head; (*l*) canter, platoons column left and form circle and cross; (*m*) three concentric circles, the center and outer circles moving on right hand and the inner circle on left hand, last three of second platoon execute troopers left about at trot, all of first platoon execute on haunches troopers right about at trot then on haunches left about at canter, column of twos form, at trot, class pass out of hall and chang from double to simgle (snaffile) bridles.

After the previous execrises and after the hurdles had been placed in the hall, three in number, each 3 ft. 8 in. high, two of which were placed on the track (one on the right and one on the left) and one in the center of the hall on the diagonal, the riders returned one at a time at signal and rode once over the course.

14. Had Graduating Ride outlined above which reqiured about forty minutes, including the time necessary for handling the hurdles.

JUMPER CLASS.

Schedule June 1st to June 15th.

1. In hall: Twice over 4 ft. bars and 4 ft. stone wall, rapping bar used.
   Outside: Road work.
3. In hall: Twice over 4 ft. bars, rapping bar used.
4. Over Magazine Cañon course in pairs.
5. Led on road 1 hour.
6. Road work.
7. Try out over Liverpool jumps.
8. Lecture by Senior Instructor.
10. In hall: Try out over course for final ride.
11. Try out over the jumps on steeple chase course, one jump at a time.

12 and 13. Try out over the indoor course.

14. Graduating Ride, indoors, over the following course, bars 4ft., tripple bar 4 ft., railroad crossing 3 ft. 9 in. and stone wall 4 ft. 3 in. Also taking three fences 15 feet apart with arms folded and without reins.
15. Graduation Ride, out of doors: This ride was held at the race track over a series of four jumps such as are usually found on steeple-chase courses of this country, and built according to the specifications, consisting of a water jump, a board fence 4 ft. 3 in., a hedge and a Liverpool. The riders took the course one at a time and rode at a three minute pace or better. These two rides were intended to present such obstacles to the riders as they would be liable to encounter in mounted competitions, whether in the show ring, on the steeple-chase course or between the flags of a cross country run.

SECOND TRAINING CLASS.

Schedule June 1st to June 6th.

1. In open-air hall, 55 minutes: Work out at will for five minutes. Executed circles, abouts, half turns in reverse, haunches right and left, backing, flexions and gallop individually on both hands. Grazed five minutes.

3. In hall ½ hour: Worked at will at walk and trot for ten minutes. Executed flexions (lateral and direct), circles, spirals, serpentines, and changes of direction at will. Outside: Rode in woods and jumped logs and small rail hurdles; jumped ditches on Republican Flats.
4. In hall 1 hour and outside ½ hour: Review, same as 3d.
5. Attended exhibition ride given by the Olympic team on the race track grounds.
6. Turned out to pasture.

BREAKING CLASS.

Schedule June 1st to June 14th.

1. In hall: Longed, rode at walk, trot and canter. Drill at jog trot, canter, change of direction, serpentines. Outside for half hour at walk.
3. Same as 1st, and in addition dismounted flexion and training with whip.
4. Outside for road work.

5, 6 and 7. Same as 4th.

8–13. Preparation for final ride.

14. Graduation ride in hall: On the track, moving to the front, first at a walk then at a trot; large circles and spiral at trot then gallop on large circles, trot, serpentine, and take gallop on large circle on opposite hand; take track at gallop, trot, by flank, walk and halt; all work at will for a few minutes at walk and then at trot, executing change of direction, abouts and circles and riding on straight lines.

THE NEW ORGANIZATION OF THE SWISS ARMY.

BY AN OFFICER ABROAD.

"AN army is a living organism in constant process of development." These significant words appeared in the message to the Swiss Congress of 1906, recommending certain changes in the military organization, and they seem worth repeating at this time, when the improvements made by the law of 1907 are followed today by further changes of serious import.

The law passed in 1909 greatly increased the efficiency of the army: lengthened the time and made more intensive the the instruction of recruits; reduced the age limits of officers and resulted in a military force whose fighting value many experts from professional armies have publicly attested and which very few have ever decried. This law retained the former arrangement of the forces in four army corps—but from the first, a division of opinion on this subject declared itself in Switzerland. The agitation in favor of six strong divisions in preference to four army corps grew in the army and in parliament. In 1910 the chief of the General Staff, Sprecher von Sternberg, made a speech before a large assembly of officers of the army, in which he exposed the principes which governed his warm advocacy of the divisional organization.

One paragraph of his address seems worth quoting: "We should be more and more convinced that if some day the honor and the independence of our country demand it, it is not by remaining on the defensive that we would fulfill our duty, but by resolutely undertaking an offensive war. Therefore our military organization should be based upon the use which we propose to make of our army."

The federal message of June, 1910, contains arguments full of information, setting forth the reasons why the changes it proposes should be made, and above all why a divisional organization is more effective for Switzerland than the arrangement heretofore existing, viz: four army corps.

The following is a very brief analysis of this message, touching only upon those points which have special interest for us. The whole report in both its military and philosophical analysis is well worth reading.

Before proceeding with the consideration of the question of divisions versus army corps, the report touches upon the necessity of making the military districts accord with the latest census; the creation of mountain troops; the rejuvenation of the field army, many of whose elements were composed of the oldest men of the reserve; relieving the field army of certain duties which could readily be fulfilled by less active troops; reorganizing the train, and the introduction of mechanical transportation; the adding of machine guns to the infantry, and howitzers to the field artillery.

DIVISIONS AS AGAINST CORPS.

In adopting the organization in army corps, Switzerland which can only form a small number of these units, finds her strategical combinations limited by this small number, or else is obliged at the very beginning to break up an already constituted organization.

On the other hand, the organization into divisions presents the additional advantage of being a return to national traditions and of being better adapted to the territorial divisions of the country. Moreover, the adoption of the three brigade division brings with it all the benefits of a three unit organization, permitting the use of a reserve, without breaking up tactical units. In many cases the combination of the principal arms into a mixed brigade furnishes an excellent fighting unit and, in time of peace, furnishes a preparatory school for forming division commanders as well as for teaching the co-operation of the different arms. The practical teaching of strategy demands means which do not exist in Switzerland; therefore, officers who are already familiar with the tactics of a division would have to practice and form their strategical faculties by staff rides, the war game, and study of history. Moreover, the formation of four army corps staffs

in addition to the division staffs constitutes a considerable burden. With the divisional organization, on the other hand, division staffs are constituted and exercised necessarily in peace and maneuvers as well as in war. Two or three commanding generals and staffs, suitable for the command of an army composed of two or more divisions, are all, therefore, that remain to be formed in time of peace. The organization is less top heavy and lends itself to a greater number of combinations than would be possible in a rigid subdivision of the forces into four army corps.

These considerations lead to the adoption of the division organization,—six strong divisions being organized out of the existing army corps. Each division is composed of three brigades of infantry of two regiments each, the regiments being normally of three battalions; a bicycle company; a group of three comapnies of machine guns; a group of two squadrons of cavalry; a brigade of two regiments of artillery, each regiment of six batteries of four guns each; a battalion of two batteries of four mortars each; a division park of two groups, each group composed of an infantry park company and two artillery park companies; in addition to these, one park company for the howitzers; a battalion of engineers of four companies; one pontoon train; a telegraph company; six sanitary companies, and two subsistence companies.

The total active infantry is organized into 106 battalions. The average strength of the active infantry, in service from 1899 to 1907, was 113,638. We see, therfore, that each of the 106 battalions of active infantry would have over 1,000 men or about 270 per company.

Besides this, there are fifty-six battalions of landwehr, instructed and armed and available to re-inforce the divisions as additional brigades if necessary, serve as étape troops, or for the defence of positions prepared in advance, etc.; leaving the active army, composed of the youngest men, and the best instructed, untrammeled and undiminished for undertaking an offensive campaign.

In both the old and new organization there are twenty-four squadrons of élite cavalry. Two squadrons are assigned to each division and twelve constitute a brigade at the disposal

of the army commander. Besides these, there are twenty-four squadrons of landwehr cavalry.

The artillery consists of seventy-two batteries, twenty-four battalions, twelve regiments, six brigades of field artillery assigned to the six divisions. There are also four battalions of mountain artillery, one assigned to each brigade of mountain infantry; six battalions, each of two batteries, of howitzers.

The ammunition supply is assured by twelve park companies for infantry and twenty-four for artillery, each division having a park composed of two battalions. There are also four park companies for mountain troops, and six for howitzers.

There are nine ammunition trains for mountain troops and eight ration trains for the same.

The report insists that for a small army the division is not only a fighting unit, but a strategic unit; that its organization renders it independent, not only on the march and in battle, but permits its commanding officer to be given authority to communicate directly with the supply and road services as well as the recruiting and evacuation service.

All of the artillery, both field and mountain, is assigned to the divisions, in order to teach this arm its rôle in co-ordination with the others, and above all to maneuver along side the infantry.

The ammunition supply train is calculated so as to give 306 rounds per musket, 510 per gun, 304 per howitzer.

To handle a division of this strength requires a more numerous staff than for an ordinary division, especially one entering into the composition of an army corps.

Five automobiles are assigned to the headquarters of each division.

The report suggests the importance of a useful division of work according to personal aptitudes, and indicates that for the instruction of the staff officers of a division, staff rides and studies, map exercises, and similar work under the general or his chief of staff, are of more value than maneuvers with troops.

The eight bicycle companies constitute a novelty. One is assigned to the headquarters of each division, one to army headquarters, and one to the brigade of a cavalry.

Company commanders are now given a horse, for the first time, and certain other officers as regimental quartermasters, surgeons, supply officers, are mounted on bicycles.

The armed landwehr remains at the strength it has long had of 50,000 men, but it is to be reorganized into 212 companies of 170 men each. Those coming from mountain troops will man the mountain fortresses; the other sixteen regiments, forming six brigades, will be available for any use considered necessary.

There can be no doubt that this reorganization of the Swiss army into divisions, which at this monemt is being effected, is the result of profound study during long years by competent men, aided by the best advice which Europe could afford. It is especially interesting to us, since the Swiss army has a strength only slightly superior to the total of all our regular troops, wherever stationed, plus all the organized militia, or, say, 250,000 men. The organization decided upon is surprisingly similar to that presented in our Field Service Regulations for a division, viz: three brigades of infantry, two regiments of artillery, a battalion of engineers, and auxiliary troops of every sort. There seems no doubt that more strategical combinations can be made with six strong divisions than with four weak corps; that it is easier to select and instruct in time of peace six division commanders than it is to make efficient four corps and commanders and eight division commanders. These and many other considerations mentioned in the report of the Federal Council, should go a long way towards convincing us, if that were necessary, that in rejecting the army corps organization for our service the greatest wisdom was shown.

This new organization goes into effect April 1, 1912.

T. M. B.

CAVALRY RAIDS—THEIR VALUE AND HOW MADE.*

By Captain C. R. DAY, Fifth Cavalry.

THE raid owes its importance as a factor in modern warfare to its development in our Civill War. While it is true that raids had been made prior to that time yet "in strategical results, in skillful execution and far reaching effects, the American raids surpassed all previous operations of the kind and have as yet been unequaled."

Foreign military writers have apparently not placed any value on the lessons taught by our raiders, either ignoring them altogether or else treating them as possessing little or no merit, but instances are not lacking in which foreign armies might have made use of such operations and materially bettered their situation.

What influenced our unmilitary people to adopt this hitherto practically unknown manner of operating is an interesting question. Effort will be made to show that it did not suddenly spring into existence, but was a gradual and natural development due to the conditions of life and experiences of our ancestors.

The early history of our country is a record of struggles with Indian tribes and its pages are full of the exploits of small parties or bands traveling many miles through deep forests in order to fall upon the enemy unaware and wreak the vengence peculiar to that time. Our forefathers were not slow in recognizing the value of this stlye of fighting and quickly adopted it as their own and soon were able to beat the Indian at his own game. As the conflict between the whites and the Indians moved farther to the west, the regular troops began tc take a more active part in the contest but the same style of fighting continued.

*Thesis prepared at the Staff College, Army Service Schools, 1911–12.

In the Mexican War the American soldiers did not hesitate to put into practice the principles learned from the Indians. Small bodies cutting loose from all home communications and pushing boldly forward for many hundred miles into hostile territory, clearly demonstrated the spirit, boldness, self-reliance and stamina of the raider.

In this connection and showing that similar conditions in the lives of people produce similar results, it may be mentioned that the Cossacks are the raiders of Europe and the Boers of Africa.

Having seen how the spirit of the raider became broadcast in our land, let us next consider how it happened that he was so opportunely equipped for the work, for a man may have the heart and stamina of a raider and still lack some of the essential qualifications.

After the Indians had moved out, the white settlers busied themselves in cultivating the soil, establishing their social institutions and settling their private grievances and disputes and it is at this point of our development that the horse and pistol came into general use, the former being necessary for tilling the soil as well as for social and business relations, the latter useful for self preservation and in deciding many personal differences and points of honor peculiar to he times. Comfort and self interest demanded an expert use of both. But it is, of course, to be understood that all sections of our country were not equally blessed or cursed with the habits referred to above.

Coming now to the period of our Civil War, we find a population of natural horesmen, accustomed to the use of fire arms, especially the pistol, with a knowledge of warfare inherited from the old Indian fighters and a brief experience in the Mexican War. In fact we have the raider in person ready for the war which offered every favorable condition for his kind of warfare.

During the first years of the Civil War the authorities, although constantly demanding the advance of the Union Armies, were unwilling or unable to furnish men in sufficient numbers to meet the enemy at the front and at the same time properly guard the lines of communication and fortunate indeed were those commanders whose lines of supply were under the

protection of the gun boats. The Southern Raiders operated against these long railroad lines in a country thoroughly familiar to the men and filled with friendly inhabitants. It is to the credit of some of the Union commanders that they refused to advance under such adverse conditions although they thereby incurred the ill will of the administration and possible loss of their command.

The Northern raiders were favored by the fact that a large part of the population of the Southern states was friendly and that the Southern Confederacy was, as Grierson reported, a shell the outer rim of which once passed there was but little danger from any force in the interior. But this shell like condition did not hold for the Northern states, for when Morgan made his celebrated raid around Cincinnati approximately 100,000 home guards were called out to expel the invaders. The shell was not hollow but the inside was of a very non-resisting material. It was the regular troops that did the work.

Activity in raiding was, as a rule, confined to the side, which at the time, was superior in cavalry. Such superiority seems to be necessary before attempting this kind of operation and is the probable reason why the Japanese Cavalry failed to raid the long line of communications in rear of the retreating Russian Army in the recent war in Manchuria.

The great prominence given to the raids in the Civil War is not entirely due to the raiders. Their efforts have been ably seconded by our historians who have attached the term raid to a numerous and diverse class of operations among which may be mentioned Early's effort to capture Washington in 1864, Jackson's movement to the rear of Pope's army, Wilson's operations in Alabama in the spring of 1865.

The following quotation, bearing on this broad use of the word raid is from an article by Major Elliot on Sheridan's raid against Richmond. The Major was one of the participants in that raid. "There is considerable difference to be observed between expeditions of this character and the dashes by cavalry into the enemy's country constituting the raids proper." In the latter "a small body of horesmen would travel at great speed, avoiding any encounter with the enemy in force, deceiving and deluging him by feints and doing all the

damage possible to railroads and other property, then retreating as rapidly, dexteriously evading pursuit and scarcely permitting any rest for horses or men until they were safe behind the shelter of their (own) lines."

In Sheridan's raid the column of march was about thirteen miles long, the gait usually a walk, the distance traveled from fifteen to twenty-five miles per day and the object of the expedition was to draw the Confederate Cavalry in pursuit and as Major Elliott justly remarked there is considerable difference between such a movement and the one which he describes as a *raid proper*.

Differing from the two classes of raids just referred to, but to a certain extent resembling each, are some of the raids of the Confederate partisan cavalry which under such leaders as Morgan and Forrest more than once paralyzed the advance of the Union armies. The following condensed account of one of Morgan's raids will illustrate the difference. In July 1862 he made an expedition which has been designated "The First Raid into the Blue Grass Region of Kentucky." He reported the result as follows: "I left Knoxville on the 4th day of this month with about 900 men and returned to Livingston on the 28th with nearly 1,200, having been absent just twenty-four days, during which time I have traveled over 1,000 miles, captured seventeen towns, destroyed all the government supplies and arms stored in them, dispersed about 1,500 home guards and paroled nearly 1,200 regular troops. I lost in killed, wounded and missing of the number that I carried into Kentucky about 90."

As to the manner of operating in central Kentucky, General Duke stated as follows: "It was now deemed good policy to march more slowly, obtaining perfectly accurate information and increase the confusion already prevailing by threatening all points of importance. This policy was not a hazardous one, under the circumstances, for although forces surrounding the point where we now were, were each superior to our own, yet by getting between them and preventing their concentration and industriously creating the impression to which the people were at any rate disposed, that our force was 4,000 or 5,000 strong, Morgan had demoralized them and they were afarid to come out and meet him."

By means of such ruses he maintained his position in the midst of his enemies for two days meanwhile recruiting and supplying his command, 200 of whom started on this raid without arms.

The effect on the enemy is illustrated by the following telegrams: General Boyle to the President: "Send me troops or Kentucky is lost;" Lincoln to Halleck: "They are having a stampede in Kentucky, please look to it."

From what has just been said, it would seem that many of the raids of the Civil War resemble each other in name only and that they permit of division into distinct classes but a closer study will show that all such movements possessed certain elements in common and this enables us to arrive at the accepted military meaning of the word which is submitted to be the following: A raid is a strategical offensive movement of an independent command without lines of communication or supply.

As a matter of fact we know that the above definition is not the generally accepted view of the present day for it contains no limitations as to secrecy, fast marching or avoidance of general combat.

According to our Cavalry Drill Regulations: "Raids are isolated, independent cavalry operations, conducted with secrecy, by rapid marches, usually avoiding general engagements" and the objects of such expeditions are: "To harrass and weaken the enemy by drawing off in pursuit his cavalry or other troops, or by causing him to guard a great number of points; to threaten, interrupt or destroy his communications; to destroy his depots and source of supplies; to gain information; to cause alarm in the enemy's country, or create a sentiment unfavorable to the prosecution of the war; to interfere with the mobilization of the enemy's forces at the beginning of a campaign; to effect the release of prisoners."

The absolute value of any raid cannot be determined. It is an easy matter to figure up the total of supplies destroyed, men and animals captured and killed, but there are other elements whose value can only be guessed at, but these are equal

if not greater than those enumerated. The moral effect, the confidence which a successful raid inspires in the ability of their leaders, the depressing effect on the enemy, the worry caused the opposing commander, are some of the things that can only be estimated. But the value of a raid is not absolutely dependent upon its success. The two terms are not synonomous. The commander of a raiding force is responsible for its success, the commander of the army for its value.

On April 17, 1863, Grierson, with 1,700 cavalry, left La Grange, Tennessee and reached Baton Rouge on the 2d of the following month, having marched more than 500 miles in hostile territory, passing in rear of the Confederate Army, destroying the railroad at several points and burning considerable quantities of supplies. The great value of this raid was that it distracted the attention of the Confederate commander and caused him to scatter his forces in an attempt to intercept the invaders at a time when he should have given his whole attention to the operations of the Union Army.

Sheridan's Trevilian raid has generally been accounted a failure. "a useless expenditure of horse flesh," and while such might appear to be the case judging from what was actually accomplished still the movement was of great value to Grant in the secret transfer of his army to the South side of the James as it freed him from the observation of a large part of the Confederate cavalry.

Stuart's Chambersburg raid took place shortly after the battle of Antietam. The raiders captured the town and a few horses and got safely back but he, Stuart, "ought to have lost his whole command." In this operation the reward was out of all proportion to the risk run. It is hard to see what benefit, if any, was gained and it requires little imagination to picture the effect that the capture of the flower of Lee's cavalry would have had at that time.

In December, 1862, Grant was preparing a movement against Vicksburg. A single line of railroad connected his base, Columbus, Kentucky, more than 200 miles distant, a secondary base being at Holly Springs. Just as he was about to move, Forrest raided and interrupted his line of communication and Van Dorn raided and destroyed his base at Holly

Springs. Thus his advance was not only paralyzed but he was compelled to put his army on short rations and fall back to Memphis. Meanwhile, Sherman ignorant of what had happened proceeded to carry out his part of the plan and suffered a heavy repulse. This is one case in which the raid decided a campaign, a battle could have done no more.

During the same month, Bragg at Murfreesboro was putting his army into winter quarters and believing the fighting over until the following spring dispatched Morgan and Forrest on raiding expeditions, Morgan into Kentucky and Forrest as just stated above, when unfortunately for him Rosecrans decided to advance. The battle which followed was fiercely contested and for some time the result hung in the balance, in fact it might be said that victory was practically in the hands of the Confederates but they lacked the increment necessary to throw the scale. Is it too much to say that had Morgan been present with his command, which he claimed was the finest cavalry division in the South, the additional weight would have secured the victory? His raid was a great successs, he accomplished wonders, but his power was wasted on secondary objects and on his return Murfreesboro no longer belonged to the South.

On October the 2d, 1863, Wheeler raided and destroyed Rosecran's great wagon train of 500 wagons which were en route with supplies for the Union Army at Chattanooga.

The foregoing represents the results of a few of the raids of our Civil War. Such operations naturally favor a nation which is fighting on the defensive as they not only threaten the existence of the enemy's army but also compel him to make many detachments which cannot be used in the decisive battles at the front. They are one of the chief causes why "attacking armies melt away like fresh snow in the spring time."

The operations previously referred to were voluntarily made according to prearranged schemes or plans but the movements of cavalry and the fortunes of war frequently place mounted troops in positions where a dash for safety across the enemy's lines of communication is the only alternative to surrender. Such was the position of Davis' cavalry when it escaped from Harper's Ferry and captured Longstreet's ord-

nance train. Bazaine's 15,000 cavalry remained to be surrounded in Metz and neglected the excellent opportunity for raiding the German lines of communication. Stuart's cavalry being sent to make a forced reconnaissance in order to locate the right flank of McClellan's army penetrated so far in rear of the enemy's position, that its commander considered it safer to go on than to turn back.

Before attempting to describe how a raid should be made, one should first study the guiding principles of the great leaders of this class of operations and the following are given as some of those that were founded on experience and stood the test of war:

The leader must be a man of quick decision with nerve to back his judgment, able to promptly and accurately estimate the value of information as well as the advantages or disadvantages of the terrain. He must be a natural leader of men. The men should be especially selected, well disciplined and capable of withstanding great fatigue. The march should be on one road with only such detachments as are considered necessary. The rate of march should depend on the distance, the forage available for feeding and the horse supply of the country invaded. The fact that a raid is contemplated as well as its destination should be made known to no one except the commander, until the force is well on its way.

Information is of vital importance and on a long raid scouts and spies should be sent ahead to collect information and guide the column. According to Steele, "it may be laid down as a rule that a cavalry raid covering many miles of country * * * in order to achieve success must be made in a country whose inhabitants are friendly."

Every possible ruse should be employed to deceive the enemy as to the objective or mission of the raiding force and its numbers. Some artillery should accompany a raiding column, the number of guns being in proportion to the size of the command. On long raids the mental and physical strain frequently pases the limit of endurance, necessitating the most strenuous exertions to keep the men and even officers from leaving the column. In Grierson's raid one of his officers after safely performing a most dangerous detached operation for the

purpose of deceiving the enemy, became insane soon after rejoining, due to the great mental as well as the physical strain to which he was subjected. A command that is worn out physically is easily demoralized and for that reason alone a fight should always be avoided in the latter stages of a raid, not to mention the additional reason that the enemy is concentrating and endeavoring to cut off the invaders.

The command should, and usually does, live off the country and this necessitates dispersion. Men will not go hungry if there is a chance to get something to eat in the nearby houses and while looking for food it is only a step to look for whisky, which is universally recognized as the medicine par excellence for a tired out man.

But if a raid is hard on men it is simply death on horses and after every hard raid there must be a period of rest and reoutfitting, and any commander who orders such an expedition should bear this fact in mind.

A raiding force should always be liberal in granting paroles, and let the fact be known to the enemy. The opportunity of visiting home and mother offers peculiar inducements to many soldiers to surrender rather than fight.

The present theory of war comtenplates vigorous and continuous action. A campaign once begun is pushed to the decision. In such a case there can be little room for detached action and the place for cavalry will be the army. Raiding under such circumstances will be the exception. But this theory presupposes two armies in existence which unfortunately might not be the case with us if we were at war with one or more strong military nations. It may be a question then of having to surrender a certain amount of territory with the hope of recovering it later. If such should be the case then the raid might materially assist in delaying an advance into the interior. Modern improvements have put the raider at a disadvantage and if we may believe our aviation friends the raid may no longer be necessary for when the great birds of the air begin to circle over armies, cities and railroad bridges and drop at will tons of dynamite, it will be time for man to harken back to his ancestors and look for a cave. The wireless telegraph will make it difficult for the raider to out travel the infor-

mation of his advance. The automobile and motor cycle can now be used to carry infantry to guard fords and mountain passes in order to cut off raiding parties, but the raider has usually had to take desperate chances and he will have to do so in the future. Besides the elements may come to his assistance—it always rains when battles are being fought.

The large size of armies of the present day also hinders the raiding of their lines of communication for the reason that such armies usually cover a broad front and as the raid is generally started from a point well out on the flank it is evident that before reaching the main lines of supply the distance traveled will be considerable and the point at which it is intended to strike is necessarily well in rear. The broad front of the Japanese army made it almost impossible for the Russians to raid the short railroad line behind it, but had the Japanese advanced further north the Russian Cossacks would have had a much better chance to demonstrate their ability as raiders.

Let us suppose that a raid is contemplated under present conditions, what would be the ordinary method of procedure and the composition of the force.

The proposition is first carefully considered by the General commanding who particularly estimates the value to be gained as well the risk to be encountered; the effect that the absence of the cavalry will have on his command; the length of its absence and its condition on return. If he believes the reward justifies the risk, he will give instructions to the commander of the raiding force, giving him all the information available and designating what it is desired to accomplish, being careful to designate one or more minor objects in case it is found to be impossible to carry out the main mission. This in order that the movement may not have the appearance of being a total failure. It is hardly necessary to say that secrecy at this stage is imperative.

The size of the force must be in proportion to the expected resistance. The larger the force the stronger its offensive power and the quicker and more effectively can it carry out the work assigned, but a large force cannot move as rapidly or as secretly as a small one. The number must therefore be a

compromise and should never be more than absolutely necessary.

Artillery as a rule accompanies such an expedition, the number of guns being in proportion to the size of the command, and would probably vary between a battalion and a battery. All carriages should be double teamed. Mountain artillery might in some cases be preferable to horse artillery.

The best organizations are selected and the men are examined by the doctors and the animals by the veterinarians and only the physically fit are taken.

Ammunition and rations are carried on the saddle, if the country is barren of supplies a pack train is taken.

A certain amount of high explosives should constitute part of the equipment of every raiding force.

The command would also be accompanied by a small sanitary personnel, one or two expert telegraphers and probably a wireless section.

The route followed should be the one that offers best concealment, consistent with a rapid advance. These two requirements naturally conflict and as a rule the first few marches should be made for concealment even at the expense of distance.

The march should be in one column with only such detachments as are necessary to gain information and deceive the enemy.

Night marches should be the rule and when danger is most imminent the command should be in the saddle before day break.

The knowledge of the country will necessarily depend on the conditions but in any case it should be made as thorough as circumstances will permit and no effort should be spared to obtain trusted guides and to find out the location and strength of the enemy.

The rate of march will depend on the distance, the roads and chiefly on the horse supply of the country invaded.

Combat should in general be avoided, the commander must always bear in mind that success depends on secrecy and rapidity of movement and should he delay to pick up scattered detachemnts of the enemy he will find the road blocked to his main objective.

Every possible ruse should be employed to draw the enemys attention from the point of attack and cause him to disperse his forces.

If practicable a different route is taken for the return.

Finally, it may be said, that each particular raid will present a distinct problem, that the course which appears to be most dangerous will as often as not prove to be safest. Success depends upon the good judgment, nerve and luck of the leader.

THE RELATION OF PROMOTION TO ORGANIZATION.

BY CAPTAIN GEO. VAN HORN MOSLEY, GENERAL STAFF.

PLEASE permit me to correct the impression conveyed on page 172 of the July, 1912, issue of the CAVALRY JOURNAL where you state that:

> We have been told that the committee of the general staff that has been working on a reorganization scheme for the army was about to submit its report and that the same would soon be laid before Congress. Rumor has it that this long delay in submitting this report has been caused by a failure to reach an agreement as to how the resulting promotion that would follow the reorganization should be apportioned. If such is the case or in any case, the adoption of this principle of one list for promotion would have settled that question and have paved the way for a fair and free discussion of any reorganization scheme upon its own merit.

The committee of the General Staff which was directed to draw up the reorganization plan realized at the very outset that little could be accomplished until the questions of promotion involved were separated from the questions of organization.

Over a year ago a committee of the General Staff was ordered to investigate the advisability of putting all line officers of mobile troops on one list for promotion. The members of this committee were generally in full accord with the idea, but the practical application of the straight one list principle was found to present difficulties impossible to overcome with justice to all concerned. The reorganization committee, therefore, sought a modification of the straight one list plan which could be applied practically.

Inclosed is a copy of that part of the committee's report which deals with the relation of promotion to organization. It was accepted very soon after the committee began its labors. At no time during the work of the committee has the question of promotion affected in the slightest degree, the recommendations made or the decisions arrived at.

During one of the recent hearings which the Secretary of War held on this report, this question of promotion was thoroughly discussed and the proposition submitted by the committee was not seriously questioned.

The statement made by a member of the committee at this hearing is important as bearing directly on this subject. I therefore quote it in part:

The proposed policy outlined in Chapter No. 7 is recommended in order to separate questions of promotion from questions of oragnization. In fact, the committee believe that there is little hope of arriving at a sound solution of the many questions of organization which now confront us, without separating the question of promotion from the question of organization.

In this report the committee has attempted to do the best it could with the organzations now in the military establishment, indicating where deficiencies exist, so that when Congress might be ready to legislate for the army it could make its legislation fit into a definite plan. Thus, it will be seen when we have completed our review of this report, that we have outlined a building policy covering a term of years.

It is unfortunate that conflicting interests between the different arms have in the past, brought conflicting evidence before Congress as to the merits of proposed legislation for an increase of parts of the army. Even some General Staff officers find it almost impossible to view questions in their broadest sense if the arm to which they belong is in any way affected. If the policy recommended in this report should be incorporated into law, the officers of the Infantry, Cavalry and Field Artillery would have their interests united, for any legislation aiding one of these arms would aid the others in proportion.

Some reorganization schemes that have been proposed in the past have granted a slice of promotion to every arm and corps. While a few officers in the army might favor such plans, they are generally unsound tactically and it is believed they would receive very little serious consideration in the hands of the military committees.

There are a number of indirect advantages in the promotion plan here proposed.

It partially solves the question of relative promotion in the three arms.

It will give the Government an opportunity to educate officers in the three arms which have to fight side by side.

After such a policy has been in force some time, we would have officers who have had actual service in two or more arms. Eventually, General Officers can be selected from field officers who understand the tactical handling of each of the three arms, and the three arms combined.

Foreign governments realize the necessity of training officers in the tactical employment of each of the three arms, and they assign selected officers to other arms than their own in order that they may receive this training.

It has been stated that this policy would not work practically for an increase in the regular army at the outbreak of war. Deficiencies in the military establishment at such a time should be made good by the organization of volunteer units, under such a bill as the Dupont bill. It must be remembered also that after this policy had been in effect several years we would have a number of officers who would have had actual service in at least two arms, so that new organizations of any arm could be organized in the regular army and the more important positions of command be filled by officers who had had actual service in the particular arm being increased. Such a new organization would not be available for service at the front in less than four to six months, in which time the commissioned personnel would have adjusted themselves to their duties.

There is no use of talking about drafting reorganization bills until all minds are agreed upon some of the broad fundamental principles of organization. Much good will eventually come from the discussions which have taken place during the winter in Congress and in the Military Committees, for the military needs of the country are now more clearly and more generally understood. All concerned are working for efficiency, but unfortunately there has been conflicting views as to just what is necessary to secure it, and just what should be done to put our whole military establishment, both regulars and citizen soldiery, on a proper line of development so that both forces may be able to meet the many national duties which they may be called upon to perform. Many of these questions have been cleared up, and a better understanding of the subjects involved now exists, and there is every hope for the future. But professional officers must remember that sacrifices may be required in peace as well as on the battlefield, and all concerned must stand ready to yield when the interests of the whole army are at stake. Only in this way can Congress be informed of exact conditions and needs in the army, and thus be able to act intelligently on matters of military legislation.

PARTIAL REPORT OF COMMITTEE.

The orgainzation of the army should be determined by strategical, political, and economic considerations, with the sole view of serving the public interest. In the past, however, questions of relative promotion have largely influenced the result. Proper promotion of the officers is essential in any military system, and parity of promotion under similar conditions is necessary if we are to have an effective force. Human nature is such that all officers desire their share of promotion. The result has been, however, that these questious of relative

promotion have affected the proper consideration of all questions of organization. If an effort is made to secure an increase deemed necessary in any one arm, officers of the other arms are liable to oppose it unless by other increases, perhaps necessary and perhaps not, a parity of promotion is received. While, therefore, the question of promotion and rank is one that all officers are rightly interested in, it has interfered, and will continue to interfere, with any scientific and economical reorganization plans. It is therefore, considered an absolutely necessary preliminary to any reorganization of the mobile army to place promotion on an equitable basis independent of organization.

In order to accomplish this result in the simplest and most equitable manner, and with a minimum disturbance of existing conditions, it is suggested that the following rules governing rank and promotion should be incorporated in the military law of the United States.

1. Rank and command in any grade of the army below that of brigadier general shall be determined by length of continuous commissioned service as an officer of the Regular Army. The date of commencement of continuous service shall be known as the "date of precedence." In all grades below that of brigadier general all officers of the Regular Army shall be arranged in the order of their dates of precedence, and those appointed on the same date in the order of their appointments: *Provided*, That the Secretary of War shall assign constructive dates of precedence to all officers of the following classes who occupy anomalous positions on the lineal lists of their several arms.

(*a*) Those officers of Cavalry, Field Artillery, Coast Artillery and Infantry who were appointed under the act of February 2, 1901, and who had served as commissioned officers in the Regular Army or Volunteers prior to such appointment.

(*b*) Those officers who have lost rank by reason of the sentence of court-martial or as the result of examination for promotion.

(*c*) Those officers who have voluntarily transferred from one arm of the line to another or from a staff department to an arm of the line.

Each officer of class (*a*) above excepted shall be assigned a constructive date of precedence which will place him in the same position relative to officers of his own arm or corps as he now occupies on the lineal list of his arm or corps, and with reference to officers of other arms or corps whose dates of precedence may lie between that of the officer next above him and the officer next below him in his own arm or corps, he shall take precedence in accordance with total length of commissioned service in the Regular Army and Volunteers, and his constructive date of precedence shall be fixed accordingly.

Each officer of class (*b*) and (*c*) above excepted shall be assigned a constructive date of precedence which will place his position for rank and command next below the officer who immediately precedes him on the lineal list of his own arm or corps on the date of the passage of the act.

2. The order of promotion in each arm, department or corps shall remain as now provided by law, subject to the exception described in paragraph 3, below, which applies to original vacancies in the Cavalry, Field Artillery and Infantry.

3. Whenever any part of the Infantry, Cavalry or Field Artillery is increased or the number of officers in any of these arms is increased the original vacancies above the grade of second lieutenant due to the inrcease shall be filled from the next lower grade in the three arms, the number of officers promoted from each arm to be proportional to the number of officers of that grade in the three arms; *Provided*, That the the order of promotion in any arm shall be in the order of the lineal list of that arm, as now provided by law; *Provided further*, That, so far as practicable, officers shall be promoted in their own arm; *Provided further*, That when an officer is nominated for promotion into an arm other than his own he may waive such promotion, and in this case the vacancy shall pass consecutively to the officers next below him in the lineal list of his own arm; *And provided also*, That whenever an officer is promoted to another arm under the provisions of this rule his position for subsequent promotion in that arm shall be fixed by his position on the list for rank and command as determined by the date of precedence defined in paragraph 1 above.

4. Whenever any part of the Infantry, Cavalry or Field Artillery is reduced or the total number of officers in one or

more of the three arms is reduced the surplus officers should not be absorbed in the arm or arms in which the reduction occurs, but should be prorated for absorption throughout the three arms; *Provided*, That whenever any officer is transferred to another arm under the provisions of this rule his lineal position for promotion in that arm shall be fixed by his position on the list for rank and command as determined by the date of precedence defined in paragraph 1 above.

COMMENTS ON THE PROPOSED RULES FOR RELATIVE RANK AND PROMOTION.

Rule 1.—This rule does not affect promotion in any way, but provides that all officers shall take precedence in their respective grades in the order of their actual seniority, and not according to the date of last commission. On July 23, last, Captain W——. of the Cavalry, was promoted to the grade of major after twenty-three years, one month and twelve days of commissioned service. Major W——. is junior in rank to Major R——. of the Medical Corps, who, on the date of Major W——'s promotion, had served nine years, eight months and twenty-three days. Major R——'s seniority is based on the fact that his commission as major antedates that of Maj. W.—— by nine days, and this notwithstanding the fact that Major W——. had served as a commissioned officer more than twice as long as Major R——. The proposed rule would not expedite Major W——'s promotion, nor would it retard that of Major R——. It would simply provide that after arriving at the same grade their precedence should depend upon actual seniority. Major R——'s rapid promotion has been due to special provisions of law, under which medical officers enter the Army with the rank of first lieutenant and are promoted to the grade of captain in five years after first commission. (The period is now three years.) These provisions are designed to compensate for the fact that such officers must acquire a special professional education before they can enter the Army. The proposed rule for relative rank would not interfere with such special rules of promotion, but would simply provide that after arriving in the same grade officers should take precedence in the order of actual seniority.

Among Major W——'s seniors under the present rule of precedence is Major C——, of the Coast Artillery, whose seniority is based on the fact that he was promoted to the grade of major sixteen days befor Major W——'s promotion, notwithstanding the fact that he was actually Major W——'s junior as a commissioned officer by nine years.

The difference in length of service in this case is due to the fact that under present conditions promotion in the cavalry is relatively slow, while promotion in the Coast Artillery is relatively rapid. The proposed rule of seniority would not affect promotion in either arm, but would simply tend to adjust relative rank on an equitable basis when officers arrive in the same grade. Relative rank determines the right to command the right to choice of quarters, and precedence on boards and other duty, where officers of the different arms are required to serve together. Among officers in the same grade seniority for the purposes above indicated should be determined by actual seniority.

Rule 3.—This rule applies only to Cavalry, Infantry and Field Artillery. These are the combatant arms of the mobile army, and the rule is proposed in order to eliminate all questions of individual promotion from the problem of reorganization of the mobile army. With this rule in effect it is expected that questions of legislation affecting the mobile army can be considered purely on their merits from the standpoint of the public interest.

NOTES ON THE NEW RUSSIAN CAVALRY DRILL REGULATIONS.

By Captain N. K. AVERILL, U. S. Cavalry, Military Attaché.

EARLY in 1912 appeared the new Cavalry Drill Regulations for the Russian cavalry, a work involving several years of preparation, based on their experiences in the Russo-Japanese War, and having many new features.

As this new Russian Cavalry Drill represents the latest thought and opinion of the largest cavalry in the world on purely cavalry work, some notes on the same, indicating the main points of differences between their work and ours may be of interest. Such a review will have to be covered by sections, and for this paper I have taken the preliminary introduction and the subject of command.

FOREWORD.

"The Cavalry Drill Regulations, while giving instructions for the field service of the cavalry and indicating the proper formations and movements to be used in different cases, demand, nevertheless, that cavalry commanders pay special attention to the bequest of our great Emperor Peter I—'Not to hold to the letter of the regulations, like a blind man to a wall.'"

These general instructions are further emphasized in the introduction which states—"Therefore, each cavalry commander is *bound* to conform his actions to the actual conditions, even departing, in necesary cases from the letter of the regulations. Everything not foreseen by the reuglations is left to *the initiative of those who execute the action*, therefore the interference of a chief is needed only when the actions of his subordinates are clearly erroneous."

COMMANDS.

The commands are given by voice, personal example, signals, trumpets, whistle, orders and by optical signals.

The use of a trumpet is limited to the chief of a section acting alone.

Important cavalry units are generally governed by orders (not commands). In battle commands can usually be used only in small subdivisions. A commander of a regiment will frequently be obliged to have recourse to orders.

A junior officer commands only his own party, calling it by name or number, and even in these cases signals take the place of commands whenever possible. Commanders of platoons when the squadron is in close order command solely by means of signals.

As can be seen from the above extracts, the first great point of difference in the Russian cavalry work and our own is the silence of the same. Compared with the frequent bellowing of some officers,the trumpet calls repeated at times, the repetition of the command by the junior officers and the general noise of our regimental drill, the first thing that strikes one, seeing a squadron or regimental drill here, is the air of peaceful quiet which prevails, the absence of practically all noise except the horses' hoofs. This is of course due to the use of signals by all, from the colonel down.

SIGNALS.

The following signals are especially noteworthy:

1. The saber held aloft, vertically is a sign of attention.

2. All changes of gaits or direction, halts and abouts are indicated by the personal example of the leader.

4. A pretence of sheathing the saber means for the squadron formation in platoon column; for the regiment, formation in line of columns.

5. Taking off the cap and rapidly lowering it to the right stirrup means dismount.

6. The lowering of the uplifted saber is the signal for execution.

The lack of noise and the use of signals are necessarily correlated, one being the complement of the other. As the Russian signals may be made by personal example, by the saber, by the cap, or in time of campaign, by the arm, it can be seen that all commands are covered by the use of signals either singly or in combination. It is a very pretty sight to see the regiment at work here at a full gallop and never a command.

TRUMPET.

The use of the trumpet must be limited to those cases where other means of issuing commands may be insufficient.

The calls—"Form on Front Echelon," "The Rally," "The Assembly," "The Retreat," are repeated by all the trumpeters in the ranks.

The use of the trumpet being limited to the chief of a section acting alone, and then only when it is impracticable to use other means of command, one rarely hears the trumpet in the drill. The idea seems to be that the trumpet, when used in action, is to indicate some sudden emergency, when all the trumpeters repeat the call.

THE WHISTLE.

The whistle may be used to attract the attention of the men in small commands acting alone. When dismounted the whislte means "cease firing."

ORDERS.

An order must be brief and clear. Orders have to be largely used in battle, when commanding a regiment or larger unit.

The man to whom the order is given (orderly), on receiving the same, must immediately repeat it and after having transmitted it will, on returning to their commander, again repeat the same reporting: "I have transmitted to so-and-so, such-and-such an order."

OPTICAL SIGNALS.

These are given by means of flags, optical instruments or other means and are used when the cavalry is in large

masses, deployed over a large extent of ground, and they may be used especially in dismounted action.

CONCLUSIONS.

The above are the salient points of the introduction and and system of giving commands in the new Rsusian Cavalry Drill, and they are of interest in so far as they differ from our own.

When the time comes, as I believe it surely will, when we adopt a double line formation for mounted work, it will be necessary to change our drill and the ideas in this, the latest of foreign cavalry work by the largest cavalry in the world, will at least be worthy of careful consideration by all our cavalrymen, and especially by the cavalry board entrusted with the drawing up of our new drill regulations.

I would, therefore, in conclusion, invite particular attention to the following: First, the maxim of Peter the Great and the idea emphasized in the introduction: "Not to hold to the letter of the regulations like a blind man to a wall;" second, the silence of the cavalry drill here and the universal use of signals; third, the large use of orders in battle order for a regiment or larger units, and the adoption of a particular manner of sending them verbally.

SECOND PAPER.

THE GAITS.

The gaits of the Russian cavalry are five, the walk, trot, gallop, field gallop and full speed. The ordinaly rate of march is five and one-third miles per hour, by alternate walk and trot, each of one verst (one verst equal two-third mile.)

Of the gaits above mentioned two, the walk and the trot, are the same as ours, the gallop is ten and one-half miles per hour, the field gallop is sixteen miles per hour, and the full speed is the limit of the horse.

The main point of difference is, therefore, the division of the gallop into three classes. Of these the first, the ordinary

gallop, is much slower than our own, being really little more than a canter of ten and one-half miles an hour; the second the field gallop, is a full gallop of sixteen miles an hour; the third, is the charging gait.

While the ordinary gallop may seem very slow, and impossible to maintain I have yet to see the first horse here out of gait. While this statement may seem almost incredible, in all the drills at which I have been present, I have not seen a single horse trot when he should be galloping or vice-versa; and this in itself is the best commentary on the Russian system of training horses.

CHANGES OF FORMATION.

The following general rules for changing formation are of interest. "All changes of formation and all movements must be executed in the simplest way so as to secure the quickest possible execution.

"When a unit moves in close order, the chief leads it personally, indicating the direction and the gait by his personal example. He is followed by the leading section to which the others conform their movements.

"When forming line from column and in all changes of formation of the rear units, if the gait be not indicated the formation is executed at an increased gait when marching, and at a trot if at a halt. When forming column from line, if the gait be not indicated, the leading unit, if moving, continues at the same gait, or at a walk from the halt."

These general principles would seem worthy of notice as tending to simplify all questions of gait, and for all ordinary purposes they make any command for the gait unnecessary.

DRESSING.

"A platoon in line acting alone dresses *always* on the center rider who must keep in rear of his commander.

"A squadroon acting alone, in line or in line of columns, dresses on the center; if necessary to dress on a flank this must be indicated in the command; in column of platoons the platoons always dress on the center.

"A regiment acting alone, in line, in mass, or in line of

columns, dresses on the center squadron; if necessary to dress on any other squadron, this is indicated by the command.

"Larger combinations (brigade and above) at a halt dress in place; when moving they follow one of the regiments or brigades indicated by the commanding general.

"The commander of the leading or base unit leads the same in the trace of the senior commander, at the appointed distance or in the direction indicated by him."

MOVEMENT AND HALT.

"The commander of the leading or base unit is answerable for the maintenance of the direction and of a regular and even gait.

"The command of execution '*March*' is given when the gait is to be increased, but is omitted when the gait is to be decreased." For example at a walk to increase the gait the command is "*Trot*"—"*March;*" but when at a trot to decrease the gait the command is simply "*Walk.*"

To halt the command is: "*Squadron (Regiment, Brigade)*" "*Halt*"—"*Dress.*" The command halt is given, according to gait at which moving, at from five to fifty paces from the line where the unit is to halt. From these distances the formation must gradually decrease the gait to a walk and then halt; the offices come up to the line, halt and quickly dress; the formation halts in rear of the line of officers, and at the command "*Dress*" approaches quietly at a walk to its proper distance in rear of the officers and dresses on the center.

The question of alignment is thus seen to be very simple. The dress is always center, unless for some special reason one of the flanks be designated. With the platoon, the platoon commander is always the guide; with a squadron the captain is the guide; with a regiment, the colonel; and the subordinate chiefs keep their proper distances in rear. For an illustration, take a regiment at drill: the colonel leads, at the appointed distance in his rear approximately seventy-five yards come the line of captains, the guides for their squadrons (troops); in rear of the captains come the line of platoon commanders, one of whom leads the base platoon and in his rear comes the center trooper on whom the others dress. In

other words, a command for dressing is almost never heard, the officers are the real guides and not a soldier, the maintenance of direction and gait rest on the officer leading the base unit. The same principle is carried out in halting a command, the officers establishing the line, and but one command is heard for the alignment—"*Dress*," which is of course made on the center.

CONCLUSIONS.

In the above review the following are of particular interest: first, the use of two gallops a slow and a fast one; second, the general rule that all movements are to be executed in the simplest possible way; third, the general rule that in forming line the gait is always at a trot; if from the halt. or at an increased gait when moving; fourth, the officers are always the guides and the dress center. The simplicity of this fourth point would be especially worthy of adoption in our new Cavalry Drill.

THE NEW CAVALRY EQUIPMENT.

By Captain EDWARD DAVIS, Thirteenth Cavalry.

THE extracts from the final report of the Cavalry Equipment Board which have thus far appeared in print have been rather fragmentary, have not dwelt suffi iently upon some of the more important articles and have failed somewhat in accuracy. Having been called upon frequently to answer questions about the new equipment, it has occurred to me that the publication of a few photographs with certain accurate comments would be of interest to officers of the mounted service.

It is the hope of many officers that the War Department may yet follow the example of General Sherman who, while Commanding General of the Army, published in General Orders No. 76, 1879, a brief digest of all the recommendations of the Equipment Board of 1878 together with the comment of the Chief of Ordnance, the Quartermaster General, the Commanding General, and the final action of the Secretary of War. Thus the responsibility in each instance was known to the entire service and the atmosphere delightfully cleared. Those who desired to criticise were able to do so not only with vigor but with accuracy.

It is intended in the following pages to present only a general description of some of the more important articles, with brief references to the uses they are intended to serve. It is not desired here to enter into a long statement of reasons or arguments in support of the Board's recommendations, as all of these were presented by the Board to the War Department where, it is assumed, decision will be made with due allowance for the fact that the recommendations of the Board were made after two years of constant work upon this one subject of equipment.

The Board had before it some three or four thousand documents representing the opinions and recommendations of

hundreds of officers of the mounted service. It had also, for inspection, the horse equipment of the following nations: Great Britain, Germany, France, Russia, Austria, Italy, Spain, Holland, Denmark, Norway, Sweden, Belgium, Switzeralnd, Japan and Mexico. Supplementing the Board's advantage in actually inspecting these equipments, were the reports on foreign cavalry equipment, including photographs, drawings, compilations of statistics, etc., provided by the American military attachés at London, Berlin, Paris, St. Petersburg, Vienna, Tokyo, Peking, Buenos Ayres, Chili, and Peru. Further evidence was found in the proceedings of earlier boards on cavalry equipment, notably those of 1884, 1878, 1874, 1872, 1859, 1857 and 1847. These documents constitute the main portion of the recorded history of American cavalry equipment. Consultation was also had with experienced and successful business firms and manufacturing institutions engaged in the production and sale of first-class saddlery and kindred articles. These men of commerce, were as a rule quite eager to meet the governments representatives more than half way and gave many very valuable suggestions. In its actual work of design and development of equipment, the Board had at its disposal the resources of the personnel and plant of the Rock Island Arsenal and the active and generous support of the Chief of Ordnance.

THE SADDLE.

As was anticipated, this article with the possible exception of the rifle carrier, proved to be the most difficult problem before the Board. Without doubt the most interesting feature of this saddle is its adjustability, which is attained by joining the side bars to the bases of the pommel and cantle arches by hinges instead of by the usual rigid joints. In a later paragraph this feature will be discussed with regard to the mechanical side of the question.

The idea of an adjustable saddle is not original with the Board, in fact it is not of recent origin, one having been patented in the United States by W. E. Jones, (sometime Lieutenant U. S. Army) as early as 1856. This Jones saddle failed through the mechanical insufficiencies of the period and the impractical feature of hinges at the top of the pommel and

cantle arches as well as the base. For some years there has been a Netherland and Austrian and a Russian adjustable saddle, while Great Britain has a 1911 model of this type. Cap-

CUT No. 1.—SERVICE SADDLE.

tain H. A. Sievert Ninth Cavalry, U. S. A., a'so has developed a saddle with hinged bars. It is evident that there is now a general movement among the various nations towards the use

of a military saddle tree with lateral adjustability obtained by hinged side bars.

The Seat and General Features—Cut 1.

One sees in the photograph a composite of several excellent saddles. The pommel is possibly more like the German saddle, the cantle resembles the French officer's military saddle, while the dip or curve of the seat is very much like that of the British service saddle. This dip, however, was so shaped and the stirrup loops so located as to enable the rider to most easily assume the seat which is now being taught at the Mounted Service School, Fort Riley. The cantle hinge is rather noticable in the photograph. Doubtless some officers fear that the hinge feature of this tree will result in the seat being unduly raised above the horse's back. On the contrary, the seat of this saddle at its lowest point is, by actual measurement of new saddles, one-half inch nearer the horse than that of the French officer's saddle ordinarily seen at the Mounted Service School. Under the seat, shown in the photograph, is a ground seat of sole leather and under this two strips of the best English straining web, all being supported by a steel frame which is shown in a later photograph—Cut No. 3. The side bars are seen to project well to the rear. This gives an ample support for the cantle pack and the bars are turned up sufficiently on the end to prevent their boring into the horse's back. There is a metal cantle pack support, not shown in the photograph because it is folded back under the saddle. For field purposes it would be extended and for ordinary use folded back out of sight and kept up off the horse's back by its strap.

The skirt is made rather wide from front to rear so as to afford ample protection, and its length is gauged so as to avoid undesirable contact of upper edge of legging or boot with lower edge of the skirt. The stirrup strap is one and three-eighths inches wide and the leather reduced in thickness as far as considered wise. The buckle is as small as practicable and is assembled to the strap so that the latter hangs with the flesh side out, a measure which adds to the life of the leather.

The stirrup is that now used by the field artillery, being of nickel steel with the sanded oxidized dark finish. Polishing

this stirrup should be prohibited. To clean, merely wipe with an oiled rag. The steel stirrup permits better horsemanship and more comfortable riding, lasts longer, has less bulk, weighs less, costs less, and looks better than the present issue stirrup or any other similar type of hooded stirrup.

The Board realized that the elimination of the hooded stirrup would cause much adverse criticism on the part of a considerable number of excellent officers who are tenacious in their support of this article. These officers desire a hood as a protection against thorny brush and extremes of heat, cold and rain, and they are correct in asserting that the hood does protect against such conditions. The desired protection, however, is more appropriately and just as fully gained by suitable wearing apparel, while the stirrup ought to serve a fixed and independent purpose, *i. e.*, as an aid to horsemanship. Such use is not properly attained by the present service stirrup.

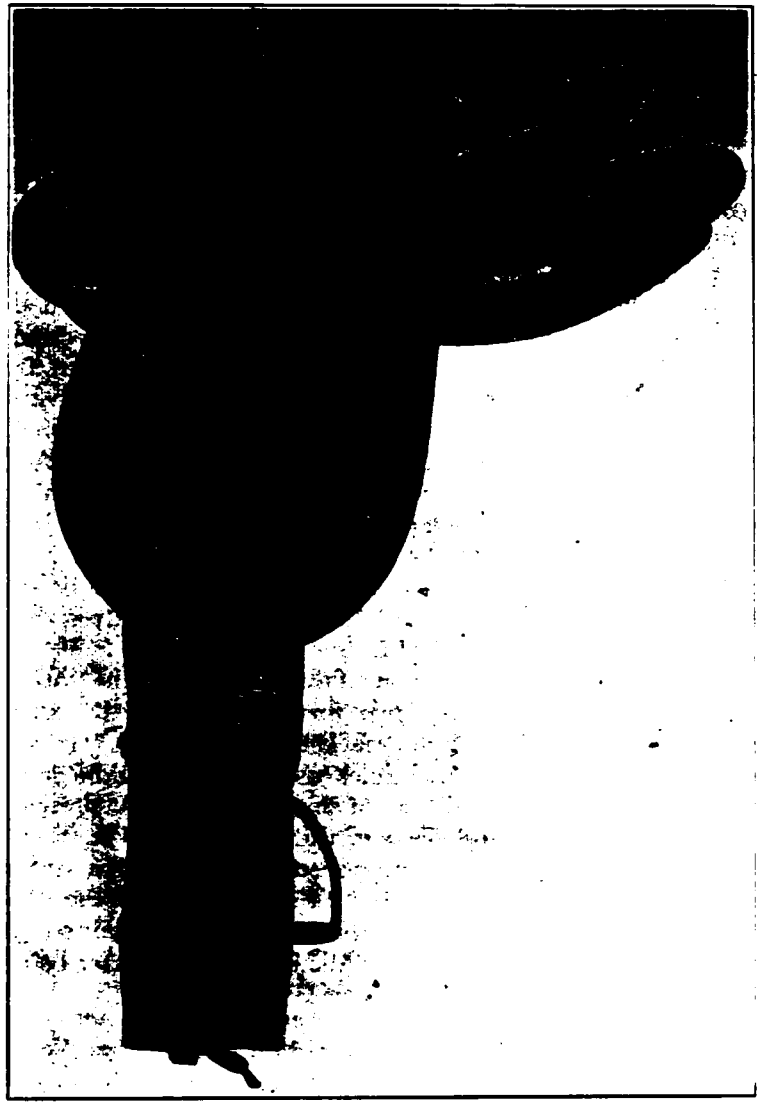
The Board is convinced that the new stirrup will win its own way and need not be supported by words when once it is put into general use. As the effort to remove the hood from the stirrup dates as far back as 1868 and was favorably endorsed by the Equipment Board 1878, it will be admitted that there is nothing new or radical in this idea.

The foot staple which is seen on the pommel and the leather loop which appears on the upper forward corner of the skirt are used to secure the pommel pockets to the saddle. It will be observed that the foot staples used on this saddle have smooth sounded corners instead of sharp corners as at present.

The seat, jockey and skirts of this saddle are to be of imitation pigskin. Including stirrups, stirrup straps, coat straps and girth, this saddle weighs 2 lbs. 14 oz. more than the McClellan. This excess will be about neutralized if the hair pad is adopted in place of the present saddle blanket, the latter being about 2 lbs. heavier than the former.

Felt Pads, Stirrup Loops, Girth, Girth Attachments. Cut No. 2.

Under each side bar and attached thereto by leather pockets, the board has placed a felt pad one-half inch in thickness. These felt pads serve the following purposes: 1. Create friction to help keep the saddle in place without tight cinching.



CUT No. 2.—SERVICE SADDLE.
(Showing girth, girth attachment, girth adjuster and stirrup strap loop.)

2. By cushion effect, assist in relieving the horse from the jolts and jars of the weight of the rider and equipment. 3. Can be cut away at some point or points and built up at others by inserting any appropriate and convenient material between the pad and the bar, thus facilitating a cure for cuts, wounds or sores while on the march. The pad is sufficiently inexpensive to warrant this. 4. Gives the saddle a certain degree of longitudinal adjustability by equalizing small irregularities and by reason of the possibility of cutting away and filling in when extremes of longitudinal conformation are encountered.

These felt pads are not experimental. The cavalry of several nations use them and they have been urgently recommended by officers of our army. Felt is preferable to the leather or cloth covered padding sometimes used, because it is less expensive and easier to keep in good condition and correct form.

In this connection it is instructive to note that the saddle from which General McClellan almost certainly patterned his model, was fitted with cork strips under the side bars so that a certain degree of lateral adjustability or a variety of fits was possible. With regard to the use of these strips of cork, General McClellan remarked "The most important feature of this saddle is the manner of arranging it so that a single size may be used for all horses, or for the same horse when their condition changes." The reason for the apparent omission of these pads in the original design of the McClellan saddle and the neglect of the principle thereafter is not of record.

The photograph shows a stirrup bar of the safety loop pattern. The stirrup loop is placed so that the stirrup will hang in the position which is recommended by our leading instructors in equitation, viz.: Well under the rider.

The convenience of this safety loop as a means of removing the stirrup from the saddle for ordinary purposes is probably a more useful feature than is the provision for safety itself. A special feature is the ring on the end of the safety gate. A thong may be tied into this ring to facilitate opening the gate.

The girth consists of thirty-five strands of cotton, braided, sash cord, olive drab in color, and finished at the ends with two buckles so designed that they carry the cord direct without any

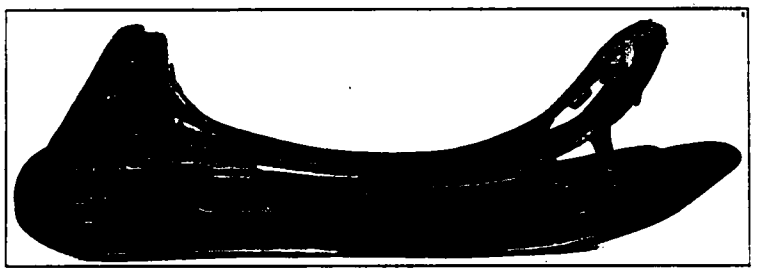
reinforcement or chapes of leather. A swivel buckle in the center of the girth, on the under side, permits the attachment of a strap, by means of which the devices for carrying the rifle and saber are steadied. Three sizes of girths, *i. e.*, 28 in., 32in. and 36 in., were recommended. This girth holds well, is cool and soft to the horse, and will cost less than the present issue. Experienced dealers and manufacturers state that the trade demand is proof to them that cotton cord is preferable to linen cord.

The girth straps are also shown in Cut No. 2; the front strap attached to the loop on the front hinge, the rear strap attached to the frame itself. The two straps pass through the loops of a leather flap, or girth, adjuster which bears small metal studs by means of which the straps may be fixed at certain points. This permits the girth being adjusted to horses with different shapes of barrel and will also allow the saddle to be moved forward or back as may be necessary. In other words the girth can be carried to the front or rear as desired. This principle was tried out on a number of saddles on a march of 500 miles and gave excellent results. This device appears in a less satisfactory form on the latest model of British army saddle with adjustable bars.

The present quarter strap method of attaching the saddle to the horse unnecessarily constricts his body. The backbone is an elastic column and in proportion as this elasticity is interferred with so is there interference with the horse's balance as he carries his load, and a decrease in the freedom and strength of his strides and leaps as he takes the increased gaits. The quarter strap as attached to the McClellan saddle conveys the grip of the girth to points which are too widely separated and thus encases the horse in a straight jacket which seriously counteracts the elasticity of the backbone by interfering with the horizontal and vertical movements of the elements thereof. To remedy this the Board decided to materially lessen the distance between the points of attachment of the girth straps. This feature is apparent in the photograph.

The Tree.—Cut No. 3.

To carry the seat of this saddle, the Board designed a flanged steel frame, formed by dies to insure economy in manufacture; with a cross section throughout the frame that gives the maximum of strength with a minimum of metal. This metal frame is attached to the wood side bars and is supported by four metal hinges, the two in rear having projecting loops for the sustaining straps of the rifle and saber carriers while the two in front have similar loops for the front girth straps. The hinges are a simplified and strengthened pattern of a type which the Board tried out very thoroughly without developing any structural weakness. The shape of the frame and the height of the hinge are designed to give the necessary clearance



CUT NO. 3.—SERVICE SADDLE TREE.
(Frame of steel with wooden side bars attached by hinges.

above the horse's back without raising the rider further from the horse than is advocated by the best instructors in equitation. The pommel arch, while lower exteriorly than that of the McClellan saddle, is noticeably higher interiorly. It is also of good width thus allowing ample space for the accommodation of the horse's withers.

The metals used in the frame are as follows: The frame proper, flanged steel, copper plated bronze finished; the hinges and their loops, cast bronze, copper plated and bronze finished; the cantle roll support, (see photograph No. 13) sheet brass and steel; girth strap loops, cast bronze, copper plated and bronze finished; stirrup loops drop forged steel, bronze finished; all foot staples cast bronze, bronze finished.

The side bars are to be of clear straight grained, thoroughly seasoned bass-wood. In finishing, the side bars are dipped in raw linseed oil and then given one coat each of orange shellac varnish and spar varnish.

The shape of the side bar was decided upon after a study of plaster casts taken from the backs of live horses, together with an examination of the best features of certain foreign side bars. The length of these side bars is sufficiently great to utilize all the available bearing surface of the horse's back longitudinally. The width of the side bars is such as to best utilize the lateral supporting surface of the back, without approaching too close to the backbone and without interfering with the rider's seat. The interval between the side bars is sufficiently wide to avoid a pressure that would restrict the free movement of the horse's vertebræ at any point.

Adjustability.

Each side bar turns freely on the axis formed by its hinge centers, being checked in its rotation by contact with the steel frame. Thus if the stripped tree is placed on the ground the side bars will rotate to a horizontal plane. So also if the stripped tree is raised and pressure applied on the outside of the bar, it will turn inwardly very close to the vertical, *i. e.*, until it comes in contact with the frame. Thus when the saddle is placed upon the horse's back, the side bars take the same slope as that of the horse's back. There are no pins or screws to hold the side bars at any given angle. All the weight in the seat of the saddle is transmitted to the bars through the hinges. The pull of the girth, of the stirrups, and of the rifle and saber as well as the bearing of the skirts is likewise transmitted either through the hinges or along a line coincident with the axis thereof. This arrangement permits the bars to conform freely to the horse's back.

The lateral adjustability of this tree, as developed along the lines above discussed, has three great advantages, *i. e.:* 1. It will fit any saddle horse, in so far as his lateral proportions are concerned, unless his back be positively deformed. It will be capable, therefore, of almost universal use, though issued in but one size, whereas rigid saddles obtainable in several sizes still fail to fit many horses. 2. It will continue to fit the back of any one horse when he changes in flesh, as he will with variation in degree of work and condition of nourishment. 3. When, in saddling, the girth is drawn into place the side bars of this saddle move automatically on their hinges, into a position corresponding to the lateral slope of the horse's back. This keeps the saddle perfectly in position and at the same time a degree of motion is permitted the side bars which makes the saddle an elastic burden for the horse, instead of a rigid box or a straight jacket. While this degree of motion is imperceptible to the rider in so far as any movement of his body is concerned, it is a comforting accommodation to the bony and muscular structure of the horse.

The Board is not aware of any well founded disadvantages pertaining to this tree. Structurally it is as strong as necessary, including the hinges and all other parts. Some have claimed that a horse under adverse conditions will lose flesh at the withers in greater proportion than he will along the back where the cantle ends of the side bars rest, and that this will interfere with the fit of the bars, probably producing serious results. The answer is that this has not happened during the Board's very considerable course of experimentation, nor has it happened apparently during the British government's successful tests of 400 trees identical in principle with this one. Furthermore, the premises as to disproportionate loss of flesh, above alleged, are in the nature of suppositions and would, in any event, convey more serious results in the case of the ordinary rigid saddle than they would with an adjustable tree.

After the British test of 400 saddles, almost identical with this one mechanically, it was authoritatively stated that "this saddle was the best ever issued, in every respect, in the British Army."

Coat Straps.

These are broader and stronger than those now issued and are of the double buckle pattern on the pommel and the single buckle on the cantle. The double buckle strap permits the separate carriage of two distinct packages in one roll. This feature is noticeable in the photograph of the pack saddle. (Cut No. 13.)

Cost of the Saddle.

The McClellan saddle, complete for cavalry, *i. e.*, one tree, sheep skin lined and leather covered, with stirrups, stir-

CUT No. 4.—OFFICER'S SADDLE.

rup straps, cincha and coat straps, is listed in the Ordnance Price List, Revised March 1, 1910, at $22.40.

The proposed saddle, with the same components as listed above will cost approximately $21.00, a small saving as compared with the McClellan saddle. The price of the proposed saddle, above stated, is based upon an estimate which was made after careful consideration of the material determined upon and the method of manufacture contemplated

OFFICER'S SADDLE.

Cut No. 4.

This saddle is identical in principle with the service saddle heretofore described and differs from the latter only in the shape of the seat, which is flatter and longer, the shape of the pommel which is slightly cut back, the finish and design of certain minor metal parts and in the use of pigskin in the seat of the saddle. The skirt and jockies are to be imitation pig skin. The stirrups are the same as those on the service saddle, but they are of the bright finish instead of the sanded oxidized dark finish.

The shape of the seat and the hang of the stirrups were determined upon after consultation with Captain W. C. Short, Captain Guy V. Henry, and other instructors in the Mounted Service School. In addition to the features of the seat which were deemed correct by the members of the Board and by the officers consulted, certain advantages pertaining to several foreign saddles of the flatter type, were incorporated.

The estimated cost of this saddle, including stirrups, stirrup straps, coat straps and girth is about $25.00.

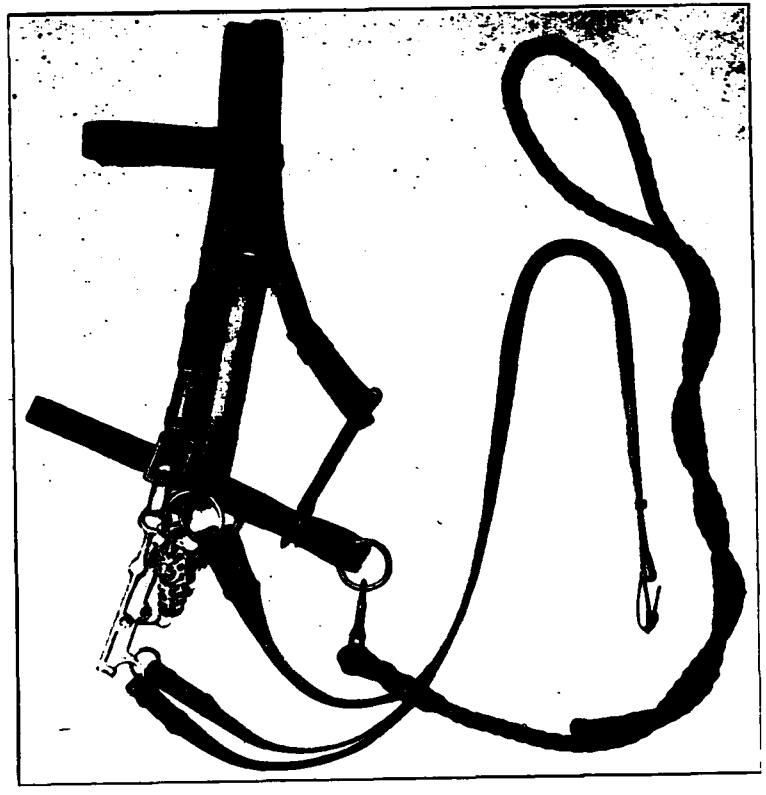
THE BRIDLE.

Cut No. 5.

The proposed bridle is of the combination halter-bridle type and is intended to supplant the present bridle, halter and watering bridle. It weighs complete, five pounds and four ounces, while the articles which it is intedned to supplant weigh eight pounds and eleven ounces. The bit and bridoon make this bridle suitable for the refinements of horse training and horse control, while at the same time the arrangement and attachment of the bits are such that it can be used with the curb bit only or with the snaffle only when so desired. The

bits are readily removed when unbridling, or for watering and grazing purposes, and are as readily replaced.

Other features of this bridle may be summarized as follows: 1. Headstall permitting ready adjustment to secure good fit for heads of different sizes. 2. Noseband transferring pull on



CUT NO. 5.—THE HALTER BRIDLE.

halter rope to horse's nose with consequent pinching effect. 3. Bit and bridoon straps permitting adjustment of bits to correct position for different sizes of head and allowing bit and bridoon to be readily attached and detached. 4. Reins lighter and more pliable than at present, with buckle on bridoon rein and sliding loop on bit rein. Bridoon rein heavier and larger

than bit rein and having end expanded to keep it in the buckle loop more securely. 5. Bit and bridoon of non-corrosive metal and the same in all respects as models of 1909, except that the branches of the bit are increased slightly in thickness at the mouthpiece, tapering from this point to the ends of the upper and lower branches so as to preserve present form. This additional strength is deemed necessary. 6. Curb chain increased in strength to approximately 1,500 pounds pull and made in single mesh instead of double as at present. Chain permanently attached to bit on the off side. Hook on near side only. This will prevent the numerous losses of chains now observed in the service. 7. All buckles have rounded corners and are as small as practicable. Studs substituted for buckles in attaching reins and bridoon straps to bits. 8. Halter tie of black rope and attached to halter by snap hook. Length over all 100 inches. A paraffin treatment gives pliability and water proof quality.

The black rope halter tie is more serviceable, possesses greater strength and presents a better appearance than a leather tie. The length of 100 inches is advantageous and, furthermore, is necessary in order that the free end may be fastened around the horse's neck and secured near the breast with a roll and stop instead of being tied to the saddle, a method rendered impracticable by the position of the pommel pockets on the new saddle. It is not feasible to provide leather halter staps of this length without splicing. Halter ropes can be reblacked, when necessary by troops.

The link is omitted because it is unnecessary. When troops dismount to fight on foot, horses should be linked by passing bridoon rein through the halter ring of the adjacent horse and securing it by slip knot as now authorized by Cavalry Drill Regulations.

Small detachments of two to ten men, and larger bodies at times, can secure their horses advantageously by "coupling" them, as this eliminates the necessity of horse holders. (Photograph No. 16). The horses can only circle around when their heads are thus tied by the reins, using a slip knot and securing to far side of cantel of the other troopers saddle.

While this bridle is intended to be used as a halter in the field, it is not to be so used in the stable and corrals in garrison, but should be kept by the trooper, to whom issued, with the rest of his equipment. A web stable-halter has been provided for stable and corral use in garrison. The halter-bridle can thus be kept very presentable and one of the objections to the present halter eliminated.

All the various objections which are urged, by some, against the bit and bridoon, the double rein, and the halter bridle combination were investigated and very carefully weighed by the Board before arriving at a decision to adopt the halter-bridle here presented.

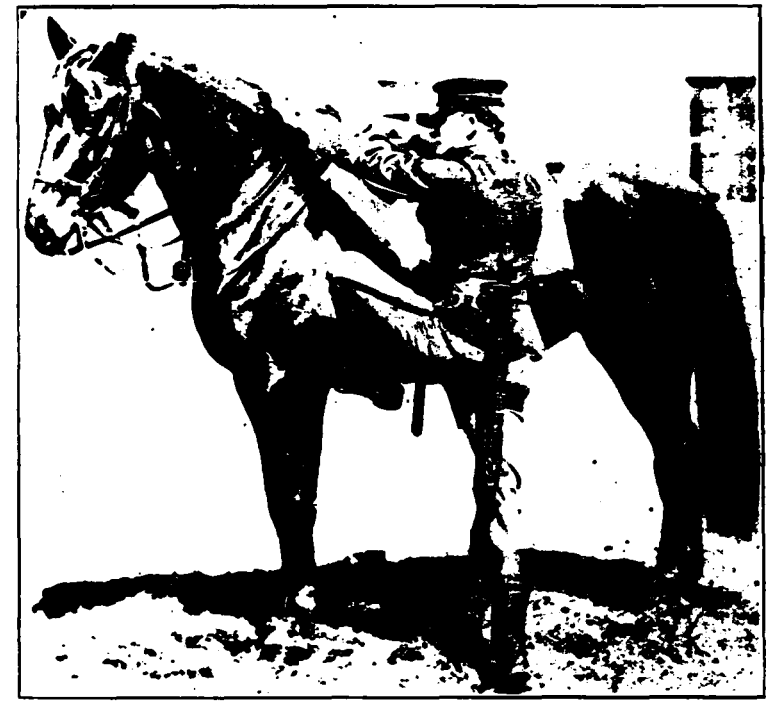
THE RIFLE CARRIER.

Cuts No. 6 and 12.

It will be observed that when the trooper is mounted, Cut No. 12, the butt of his rifle rests in a boot on the rear side; this boot being of leather and attached to the saddle by a strap which passes through a metal loop which is a part of the near cantle hinge. The weight of the rifle is supported by this boot, not by the soldier. A thick felt pad in the bottom of the boot helps to dissipate the jar of the rifle and two flat side-springs grasp the stock sufficiently to keep it from jumping up and down in the boot. The boot can be raised or lowered when necessary to obtain the proper adjustment for men and horses of different size and conformation. The boot is kept from shifting and flopping by a strap device which buckles into the girth. The breech mechanism of the rifle is kept from rubbing the corona or pad by the standing part of the carrier.

From the trooper's belt—Cut 6, projects a leather lined steel ring through which the muzzle of the rifle passes, the latter being thus checked in its lateral motion or wobbling at this point. The ring is collapsible and can be folded down flat against the trooper's body when not in use. The leather lining of the ring protects the hand guard of the rifle from injury, being aided in its function by a leather stock cover which also causes the rifle to play smoothly up and down through the ring. This stock cover does not interfere with aiming nor has it any other disadvantages. It is readily removed if so desired.

From the lower edge of the cartridge belt, under the ring, a leather strap passes downward, terminating in a snap which engaged the trigger guard. This strap supports the rifle when the trooper is dismounted; the ring, above mentioned, keeping the piece nearly vertical. (Photograph 6.) By this method of carrying the rifle mounted, the piece is so secure and undisturbed in its position that one at first has the sensation that his rifle has disappeared, and turns to assure himself that it is still there. In mounting and dismounting the trooper practically disregards his rifle. It follows his movements.



CUT NO. 6.—PREPARE TO MOUNT.

As shown in Cut No. 6, at "Prepare to Mount," the trooper with the new rifle carrier simply steps back and assumes the position now prescribed, paying no attention to his rifle. At

"Mount," the trooper rises to his saddle and the rifle follows him. As he settles himself in the saddle, he grasps his rifle with the left hand just above the bolt and inserts the butt into the boot, possibly carrying back the left foot at times to steady the boot. At "Prepare to Dismount," the trooper, with his left hand, grasps the rifle just above the bolt and with a sharp pull lifts the rifle out of the boot. He then dismounts, as now prescribed except that, after his right leg clears the horse, he places his right foot against his left foot standing momentarily with his left foot still in the stirrup. After hesitating slightly in this position, it will be found that the rifle has steadied itself by the trooper's side and does not flop or bang about, as the trooper descends to the ground.

This method involves no loss of time as compared with the present system of pulling the rifle out of the boot after dismounting and reversing this process before mounting, while it is decidedly superior in that the trooper has his rifle with him at all times, no matter how suddenly or unexpectedly he may be separated from his horse. It also removes the rifle from under the trooper's leg where the large bunch makes good riding very difficult. Furthermore, it is believed that the proposed method will considerably reduce the number of sore backs which are now attributed, by many, to the wobbling and jumping of the rifle as now carried. Under the most favorable circumstances the present rifle scabbard permits the rifle to sway and bang about most objectionably. There is nothing about the new carrier which will injure either the front or rear sight or the sight cover.

Experience with the proposed method has shown that the soldier can walk about and do various sorts of work while still carrying the rifle attached to his person. By this it is not meant that he will march any distance with the rifle thus attached, but he can saddle and unsaddle, move about the horse, carry water or forage short distances, etc.

With this method of carrying the rifle, the position of "advance rifle" can not readily be taken. This position is not deemed important as our troopers are not instructed to fire from the saddle.

This rifle carrier includes a safety device which will operate in case the trooper falls off in a limp condition to the near side; for instance, when wounded or stunned. It has been found in

CUT NO. 7.—TROOPER MOUNTED.
(Showing saber and saber carrier.)

practice and is apparent from the photograph that when the trooper falls from his horse in any other direction or under other circmstances, as when a horse is bucking, the upward course of the trooper's body will pull the rifle out of the boot.

THE SABER.

Cuts No. 7 and 8.

The saber designed by the Board is a cut and thrust weapon, being about thirty-eight inches long, over all, and weighing two pounds. While the opinions of experts in dismounted fencing were considered it was borne in mind that a cavalryman's saber was desired. In endeavoring to produce a saber well adapted to both cutting and thrusting, the Board combined the best qualities found in sabers especially designed for cutting and other sabers especially designed for thrusting. The point of the blade is on the median element thereof, thus favoring accuracy in thrusting, and the blade for some distance back from the

CUT NO. 8.—SABER AND SCABBARD.

point is double edged in order to facilitate penetration. It was recommended that this saber be issued sharp and kept in that condition. The steel guard is dark finished, presents and unbroken surface to cuts and thrusts and gives ample protection. The grip is of wood, shaped to the closed hand and covered with shark skin wired down.

This saber is a service weapon and it was recommended that paragraph 1544 A. R., 1910, be amended so that this saber and its scabbard can be drawn by officers from stores as is now the case with the rifle, revolver, etc. It was also recommended that the present officer's saber and scabbard be retained for use in garrison.

Recently, items have appeared in service periodicals mentioning a new saber developed by the Ordnance Department. Inasmuch as the Board's model of saber was worked on by the Ordnance Department for almost two years, it is supposed that the saber recently mentioned in service periodicals is the one recommended by the Board or a slight modification thereof as it is not thought that the Ordnance Department has designed and produced an entirely new saber within the comparatively few weeks which have elapsed since the Board's model was produced.

The Saber Scabbard.—Cuts No. 7 and 8.

The saber scabbard is of wood treated with oil and covered first with raw hide and then with waterproofed olive drab canvas, this canvas covering being woven after the manner of hosepipe covering, the seam being thereby eliminated with consequent gain in wearing quality and appearance. The mouth of the saber scabbard is a dark finished, bell shaped, metal funnel, the opening being two and one-half inches by one and three-eighth inches inside measurement. The opening in the mouth of the present service saber scabbard is one and one-fourth by one-half inches. The increased area in the mouth of the scabbard facilitates returning the saber, and the change in shape combined with the dark finish of the metal gives an acceptable appearance. The dark finished metal tip of the scabbard is drawn down and reduced so that it forms a point which fits into the grommets of the shelter half, the intention being to dispense with the shelter half pole and to use the saber in its scabbard, guard down, as a substitute for the pole.

The Saber Carrier.—Cut No 7.

With a view to removing the saber from its present objectionable position under the trooper's leg in order also to partially counterbalance the weight of the rifle, the Board arranged to suspend the saber carrier from a loop on the offside cantle hinge corresponding to the point of suspension of the rifle carrier on the near side. The saber hangs in two leather loops which are swivel attached to the base-piece of the carrier and permit motion forward and backward in a vertical plane with-

out lateral sway or wobbling. This device permits the saber to swing back easily should its lower tip strike, for instance when a horse takes a jump, and likewise the saber will swing to the front should it be struck by a passing trooper or horse coming from the rear. A stop on the swivel prevents the saber from turning so far that it will fall out of the scabbard.

This saber carrier can be raised or lowered on the horse's side and in this way made adjustable to horses of different height and conformation of girth. At its lower end it buckels into the carrier strap which connects with the rifle carrier on the near side and by its attachment to the girth steadies both rifle and saber carriers. When the rifle carrier is not worn the saber carrier buckles directly to the girth.

Photograph No. 7 shows the saber carrier used in combination with the intrenching tool carrier which is the shovel-shaped pouch seen under the saber scabbard. The picket pin is also shown in this photograph strapped to the outside of the saber scabbard.

By suspending the saber from the cantle on the offside it is nearer the trooper's right hand and can be more readily drawn. It can also be more effectively drawn, with practice, because there need be no disturbance of the bridle hand as is now inevitably the case when the saber is drawn.

SWORDSMANSHIP.

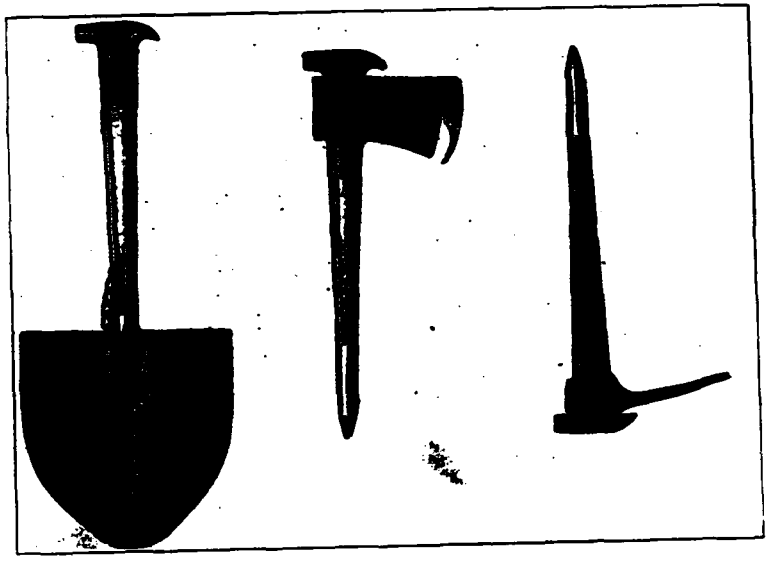
While the Board viewed the proposed saber as a most effective weapon, it also expressed the opinion that an improved saber will be of no great value to our cavalry unless the present condition of instruction in swordsmanship is radically improved. It recomended a scheme by means of which competent instructors can be produced, and suggested that a system of rewards for swordsmanship be established by creating competitions similar to those which now stimulate rifle and pistol practice.

INTRENCHING TOOLS.

Cut No. 9.

After careful consideration of the methods by which American cavalry has gained its greatest successes in the past, and a study of the conditions which will most likely be met in

the future, together with an investigation as to the trend of opinion among other leading nations, the Board took what is deemed by some a radical step, *i. e.*, the recommendation of an individual intrenching tool for cavalry. Photograph No. 9 shows the picket pin assembled as a handle to the shovel, the hatchet and the pick. The shovel weighs one pound, the pick nine ounces, and the hatchet one pound four ounces; an average weight of tool corresponding to the weight of one extra horse-



CUT NO. 9.—INTRENCHING TOOLS ASSEMBLED.
(With picket pin for handle.)

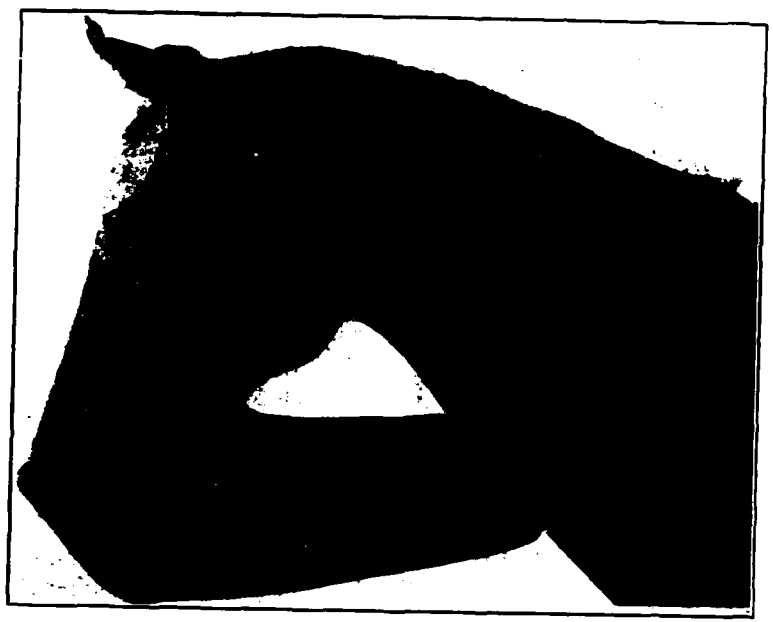
shoe; the Board's recommendation being to carry one extra horseshoe instead of two as at present. This weight is carried on the offside at such a point that it aids in counterbalancing the weight of the rifle. The proposed distribution of the tools is one hatchet to each duty sergeant and three shovels to one pick proportionately throughout the remainder of the troop.

To intrench will be nothing new in the history of the American cavalry; many such instances occurred during the Civil War and later on the plains. In Europe, where a few years

ago even dismounted action by cavalry was held in little favor, rifle fire and individual intrenching tools are now receiving serious consideration.

Intrenching Tool Carrier.—Cut No 7.

This carrier is a stiff, shovel-shaped leather pouch which hangs from the offside of the saddle, being attached to and fitting snugly under the saber carrier. It is detachable and need not be carried should occasion dictate its omission. A pocket in the outer half accommodates the shovel, the pick or the hatchet.



CUT NO. 10.—FEED BAG.

A pocket on the horse side of the pouch accommodates the extra horseshoe and also contains a small leather case carrying ten non-corrosive horseshoe nails. The pouch is securely closed by a flap.

THE FEED BAG.

Cut No. 10.

The old issue nose bag is an expensive article because it permits the horse to waste considerable grain and it wears out

quickly. The waste of grain is also objectionable because the horse is deprived of just that much nourishment and frequently worries and frets and tosses his head in an effort to get at the grain. Insufficient ventilation is another objection to the old nose bag.

The feed bag recommended by the Board, is a canvas cylinder open at one end, but arranged on the horse with its long axis nearly horizontal instead of nearly vertical as is the old nose bag. This spreads the grain over a greater area in the bag and permits the horse's nostrils to have free access to the air. By a strap fastened over the head, the front end is suspended just under the horse's mouth, while a strap passing over the horse's neck brings the rear end of the bag against the neck higher than the front end. The horse simply stands still and eats, the grain gradually shifting to the lowest point. The horse soon realizes that his grain is accessible and becomes comfortable.

When occasion demands, eight to ten pounds of oats can be carried in the feed bag in the shape of a roll on the pommel, but for greater security and convenience an insert sack, called the grain sack, has been made. Photographs 11, 12 and 13 show the feed bag, with its insert grain sack, used as a grain roll on the pommel. The insert grain sack is an elongated cylinder to be made of light unbleached sheeting or of burlap and of dimensions permitting its insertion, full of grain, into the feed bag. Its open end can be securely closed by a cord which is conveniently attached and it is fitted with another cord by means of which the grain can be divided into two parts. It will contain eight pounds ordinarily, but its capacity can be stretched to ten or twelve pounds, depending upon the bulk of the grain. While it is intended as an insert to the feed bag, this latter article can be arranged as heretofore mentioned so that it will carry grain without the insert sack. It will then be possible, if necessity demands, to carry both these sacks filled with grain, one on the cantle and one on the pommel, thus doubling the supply.

The proposed feed bag makes a good water bucket when such an article is required: thus the trooper even when alone is never without facility for watering his horse as long as the

trooper himself can get down to the water hole or other point inaccessible to the horse.

THE NORMAL EQUIPMENT.

Cuts 11 and 12.

This is the equipment recommended for troops when they are accompanied by field trains, viz.; on ordinary practice

CUT NO. 11.—NORMAL EQUIPMENT.
(Showing rifle carrier on near side—saber projecting below on off side—grain on pommel and rain coat on the cantle.)

marches in time of peace and for certain service in time of war. Its weight is seventeen pounds less than the full equipment which is now prescribed for the occasions above mentioned: to be exact, the total weight of all the articles of the Normal Equipment—calculating the weight of the trooper, stripped. at 150 pounds, is 245 pounds and 7 ounces.

CUT NO. 12.—PACKED SADDLE WITH NORMAL EQUIPMENT.

The photograph shows the feed bag, carrying three pounds of grain—noon feeding—on the pommel just above the pommel pockets. These pommel pockets contain the canteen, cup, wire cutters, meat can, knife, fork, spoon, (these articles of the mess kit are enclosed in a canvas pouch which can be removed and washed) horse brush, curry comb, grooming cloth, four ounce can of leather oil, 2 oz. tin of saddle soap, and in winter time ice

calks and extractor; a separate pouch in the pommel pocket also holds a cooling strap which is a substitute for the surcingle. Another compartment will hold the trooper's pipe, tobacco, etc. On the cantle we see the rain coat and lariat. The following articles will be carried in the field train: rations, bed blanket and shelter tent, including the toilet and other articles prescribed for the cantle roll.

FULL EQUIPMENT.

Cut No. 13.

This equipment is intended for use when the troops are on active service and are separated entirely from the field

CUT No. 13.—SADDLE PACKED WITH FULL EQUIPMENT.
(Viewed from above.)

train. It includes all articles prescribed by the Field Service Regulations for all situations.

The photograph shows the full equipment viewed from above. The rain coat is seen strapped in front of and tight up against the grain roll and the pommel pockets. The shelter half is carried on the cantle together with the lariat. Here may be seen in the photograph the cantle roll support previously mentioned. The bed blanket is under the saddle and on top of the saddle pad. Considerable experience has shown that the bed blanket may be caried here without becoming soiled or otherwise rendered objectionable to the trooper.

While the present cavalry pack has served its purpose fairly well, a desire for improvement has long been in evidence, and various rearrangements have been tried out from time to time. However, no combination of the articles of equipment now issued has satisfactorily overcome all the defects of the present pack which are chiefly: 1. Lack of compact and tight assemblage, resulting in flopping, rattling and looseness of parts. 2. Lack o proper weight balance along lateral, longitudinal and vertical lines: the lateral misbalance, probably contributing to sores at the pommel and cantle end of the saddle while the longitudinal and vertical misbalances interfere with the horse's stability in leaping and running. 3. Too heavy, not only as to certain artic es themselves but too many articles carried on the horse's back on many occasions when they ought for economy and efficiency be carried in the wagon train. 4. No proper provision for carrying an ample reserve of grain—well balanced on the saddle. 5. No proper provision for carrying rations, mess kit, etc., dismounted when the trooper is required to leave his horse for an appreciable period. 6. Unnecessarily crude in appearance, a man of experience has remarked, with reason, "a trooper with the present full packed saddle looks like a prospector in the early days."

The articles of the proposed equipment have been developed with a view to packing properly on the saddle, as well as serving their separate purposes. It will be seen from an examination of the photographs that there are no loose parts of the proposed pack, Normal or Full, to flop or rattle. Pommel and cantle packs are tightly strapped Canteen and cup are

stowed away in pommel pockets. The lariat and picket pin are secured out of the way.

The proposed pack as contrasted with the present, brings the center of the pack weight nearer the center of gravity and the center of motion, by reducing the weight proportionately on both pommel and cantle, and increasing the seat load. In addition to this longitudinal correction of balance, a lateral concentration of weight has been effected by placing more weight proportionately along the center line and reducing it along the sides.

The center of gravity has been lowered and weight and bulk effectively distributed by taking the bed blanket out of the cantle roll and placing it under the saddle. It is protected from the sweat of the horse and of the rider's legs by the corona or saddle pad and the saddle skirts respectively. Enlisted men who have tried it state with few exceptions, that they prefer the blanket under the saddle rather than in the cantle roll.

The weight of all the articles of the trooper's equipment as proposed by this Board in the Full Equipment, (262 pounds, 3 ounces, allowing 150 pounds for the trooper stripped) is but eight ounces less than the weight of all the articles of the trooper's equipment as now authorized, but the new equipment includes the following separate additional essentials with their added efficiency: *i. e.*, intrenching tool 1 pound, 1 ounce; picket pin case, 4 ounces; wire cutter, 12 ounces; oil for leather, 5 ounces; saddle soap 2 ounces; grain sack, 3 ounces; bandoleer, 1 pound, 5 ounces (the issued bandloeer is not serviceable for cavalry); bayonet, 14 ounces; (total 4 pounds, 14 ounces.)

Bearing in mind the great importance of the above mentioned articles to the cavalry service, their total weight, 4 pounds, 14 ounces, seems entirely justified. In designing the various articles of the equipment an earnerst effort was made to reduce the weight but it was the Board's experience that weight cannot be sacrificed if serviceability is to be expected.

It is not practicable to further reduce the weight of the articles which form the trooper's full pack, if efficiency and durability are to be maintained. It is practicable, however,

to place a part of the pack in the wagon on many occasions. There is sufficient room in the wagon if it is properly loaded. Every effort should be made to preserve the trooper's horse as a charger instead of wasting him as a freighter.

FULL EQUIPMENT, DISMOUNTED.

Cut No. 14.

This equipment is contemplated only for occasions when the trooper dismounts with the expectation of going into action

CUT NO. 14.—DISMOUNTED TROOPER WITH FULL EQUIPMENT.

for a period of several days or when he is actually serving as infantry. It is intended for only such unusual service. The ration bags are taken off the saddle and assembled into a knapsack, the meat can, knife, fork and spoon being placed in the rear compartment thereof. The canteen is transferred from the pommel pocket to the belt, hanging therefrom at the right rear just behind the pistol. The intrenching tool, having

been taken from its carrier and assembled to the picket pin handle, is carried suspended from the belt at the left side. The blanket, with or without shelter tent and other contents of the cantle roll as occasion may dictate, is rolled and placed contiguous to the top and sides of the knapsack with its ends drawn against the same. The bandoleer is worn under the knapsack. This full equipment, dismounted, weighs, including the clothing on the trooper's person, fifty-six pounds nine ounces. Before going into action, however, the cavalryman, serving as infantry, would further reduce this equipment to a fighting equipment which weighs forty-six pounds, two ounces.

ARMAMENT.

The convening order excepted the rifle and pistol from the Board's consideration, hence no action was taken with regard to the design or style of these weapons. Upon the Board's being asked to express its opinion as to the desirability of discarding the pistol, the majority of the embers expressed themselves as being decidedly in favor of retaining that weapon.

The design of the new saber has already been discussed. As to the question of retaining or discarding the saber, the Board assumed the ground that this weapon is the arm "par excellence" when large bodies of cavalry meet large bodies of cavalry in shock action. While many assert that such encounters will be rare it is foolish to say that they never will occur again. We must, therefore, be equipped properly for the inevitable fight of cavalry against cavalry.

The recommendation of a bayonet for cavalry arouses stout opposition in some quarters and cordial approval in others. A considerable proportion of the opposition is undoubtedly due to the fact that the proposal came several years before people were prepared for it, and at a time when an enthusiasm for mobility, pure and simple, had attained a most commendable momentum. This interest and pride in a maximum mobility is one of the best things that has ever happened to our cavalry and it will be found that those who advocate the bayonet are among the most sincere and persistent champions of the renewed interest in the horse. The two ideas are deemed consistent, not antagonistic. Despite theory, the experience of

the Russo-Japanese War proved that artillery and rifle fire alone will often fail to drive troops from trenches. Only the bayonet will oust them. Our cavalry, by its mobility, in the future as in the past, will find prizes within its grasp but possession can no longer be obtained by fire alone. The bayonet will be necessary.

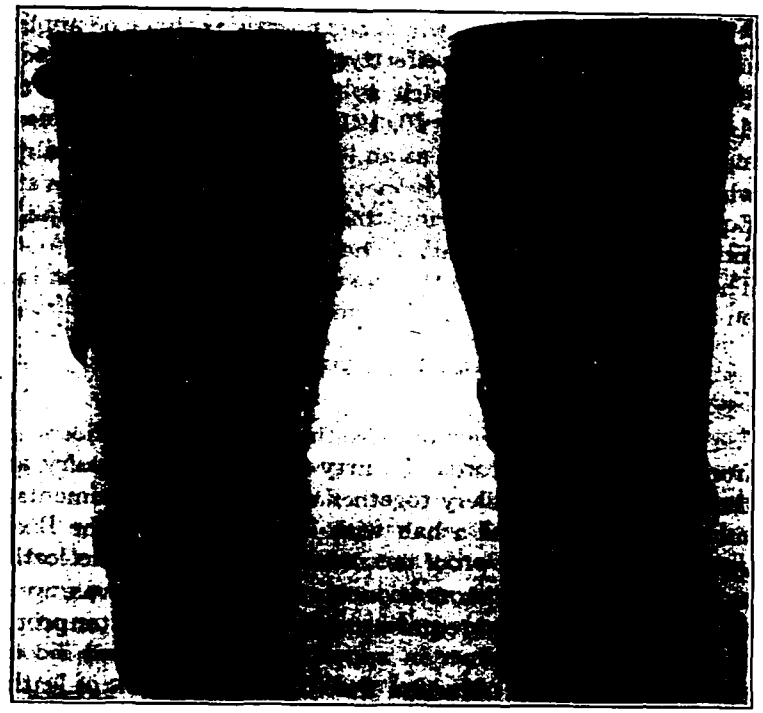
This is a question to which the negative cannot be applied unthinkingly, nor can it be effectively combatted by anonymous and twisted quotations, such as that which appeared in the *Army-Navy Journal*, July 20, 1912. The author of the communication was referred to as an "indignant officer of cavalry" who was opposed to the bayonet and who quoted the Cavalry Equipment Board as saying that "the greatest accomplishments of the American Cavalry have been in scouting on foot." The Board made no such statement. The gentleman was long on indignation and short on information.

LEATHER LEGGINGS.

Cut No. 15.

From the statements of more than 400 cavalry officers and from the clothing records of thirty-five troops of cavalry and three batteries of artillery together with its own experiments of more than a year and a half with leather leggings, the Board gained proof—actual proof not mere opinion—that the leather leggings is decidedly more economical than the canvas, wears longer, less frequently requires replacing, affords better protection and is far handsomer in appearance. The Board did not accept as valid, the objection that the deterioration of leather will render impracticable the storage of a reserve of leather leggings. If a reserve of leather leggings is an absolute essential we should also have a reserve of shoes, saddles, bridles and other articles made chiefly of leather. Such a reserve has not been found impracticable. The leather in the leggings will not deteriorate more rapidly than in the other articles. As a matter of fact the mounted service would be delighted to get this leather legging even though but a few troops and batteries could be outfitted per year. The canvas legging has been well weighed in the balance and found wanting, particularly those issued in years just recently past.

Several reliable firms agreed to make the leather legging at a maximum of $2.00 per pair and of these offers some were as low as $1.55 per pair. The material estimated on is collar-leather and the design permits machine stitching virtually throughout.



CUT NO. 15.—LEATHER CAVALRY LEGGINGS.

OFFICER'S SABER CARRIER.

Cut No. 17.

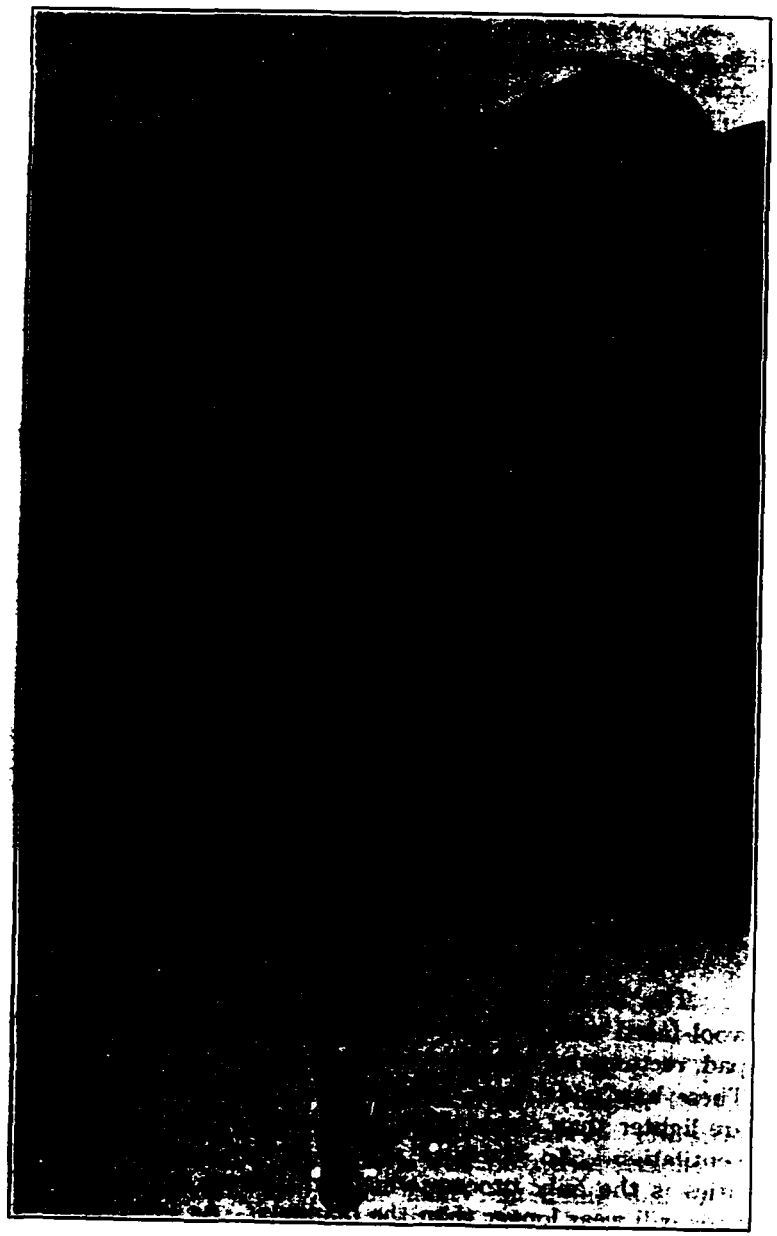
This device resembles the proposed saber carrier for the trooper. Two leather strap loops hold the saber. The strap loops are mounted on a metal frame which is swivel attached to the broad depending strap, the latter extending diagonally from cantle hinge to girth center. A saber of the officer's present type is seen in the carrier, but the strap loops are capable of adjustment to receive the service saber which would be carried in exactly the same manner.

In the photograph—No. 17, there is also seen the officer's hair pad, so shaped that it follows closely the general outline of the bearing surface of the saddle and skirts. The material is horse hair and much is promised in efficiency, durability and appearance.

CUT NO. 16.—HORSES COUPLED.

SERVICE SADDLE PAD.

The Board developed a corona, composed of layers of wool faced with cotton sheeting next the horse; a horse hair pad, rectangular in plan, and a goats hair pad of similar shape. These hair pads have thus far given excellent results. They are lighter than the blanket, cost less and afford much better ventilation. An extended service test of considerable quantities is the only process which will prove whether the hair pads will wear longer than the blankets. As to superior dura-



CUT No. 17.—OFFICER'S SADDLE WITH SABER CARRIER.

bility, however, with the information now available, a professional gambler would probably bet on the hair pads.

GUIDON.

A yellow guidon with black insignia was recommended and the spear head of the staff was changed in design so as to gain strength.

REMARKS.

The abve discussion covers only a portion of the Board's recommendations and it is greatly regretted that time will not permit a description of other interesting and important articles. Some of the equipment recommended has already been adopted but, in the interest of business precaution, in view of the large sum of money involved, the Board recommend that the saddle and its more important appurtenances be given a regular service test for six months or a year before undertaking general issue. If all goes well this test will begin in October, as it is understood that the necessary sets of equipment will be completed by that time.

Reprints and Translations.

CAVALRY IN WAR.*

By Major NICKOLAUS RIEDL, Ninth Austrian Hussar Regiment.

ANY one who has studied the military literature of the past decade will have learned that the general concensus of opinion seems to be that at the present day cavalry may be unable to play a decisive role in battle, considering the improved modern fire-arms and that many renowned writers have expressed the view that cavalry, in consideration of the enormous progress made in fire-arms and aviation, has entirely played out its rôle. Critics are found who even advocate the total abolishment of that branch of the service.

Cavalry officers, on the whole, have shown little inclination in the past to carry on a paper war. Still, in more recent times many efforts have been put forth by cavalry officers to combat these erroneous ideas; and thus what is discussed in the following will hardly be new or original, but rather a compilation of the views of prominent cavalry officers, illustrated by military historical examples.

The first and most important principle in every war is "*to conquer the enemy.*" This principle is as old as the hills, though its application has not always been the same. There were times when war was carried on for one individual's particular object—that ceased in the era of giant armies; and thus the will to conquer received the modification "*conquer quickly.*"

*Translated from *Kavalleristische Monatshefte* by Harry Bell, M. S. E., U. S. Army.

Strategical and tactical measures have to conform to that modification and will have to be employed always in conformity with the principle *viribus unitis* in such manner that all the means at the disposal of the nation, especially all forces of the army, are utilized in strictest conjunction to attain the final success.

EMPLOYMENT OF CAVALRY PRIOR TO BATTLE.

Reconnaissance.

Two armies, engaged in mobilization, are close to each other on the frontier. Concentration is in full swing. Our cavalry closes the frontier and prevents hostile patrols from crossing, which have been sent by their army to reconnoiter our conditions; it endeavors, by similar means, to gain and furnish information concerning the enemy's distribution of forces, progress of his concentration, etc. Balloons and aeroplanes, provided wind and weather conditions are favorable, assist and supplement these endeavors of the cavalry. They will furnish us at least some information concerning the location of the hostile cavalry, the defeat of which must be our first objective in order to gain a free road for our patrols and detachments, for reconnaissance and battle operations of our cavalry.

Thus, large cavalry engagements are to be expected in first line, in which our endeavor must be, by rapid concentration of large forces, to destroy, first, parts and later the entire cavalry of the enemy. This undoubtedly will frequently lead to engagements with fresh, and probably well intrenched hostile infantry and artillery; and to break their resistance it may become necessary sometimes, probably oftener than we may expect, to resort to the dismounted fight in conjunction with our horse artillery and machine guns. Our rapid and far reaching movements will allow us to attack the infantry from all sides and defeat it. These introductory engagements will have a great moral influence, and frequently a tactical influence, in the subsequent battles.

On April 24, 1877, four Cossack regiments, carrying the declaration of war, crossed the Russian frontier and rode via Bolgrad across the Barbon bridge some eighty kilometers to Galatz, captured that city and occupied

the Sereth bridge—so important for the army; they held this position for four days against the attacks of the Turks, until arrival of their own infantry.

On July 5th of the same year General Gurko rode with forty-three and a half squadrons and a few auxiliary detachments from the Danube toward Tirnowa, attacking and capturing that political and strategical place by dismounted Cossacks on July 7th.

In the first day of February, 1900, Lord Roberts sent the newly formed cavalry, division, French, from his zone of concentration (between the Modder and Orange Rivers) for the purpose of relieving Kimberley. On February 15th French encountered the Boer position at Klip Drift; that position was four kilometers in extent and garrisoned by 900 Boers with three guns; he charged and pierced it without difficulty. The road to Kimberly was thus opened.

ATTACK ON THE HOSTILE MAIN BODY.

The introductory actions of the cavalry, for the purpose of defeating the hostile cavalry, of successful reconnaissance and of other strategical import, are followed by the attack on the hostile main body from all sides. The main purposes of reconnaissance which in most cases can be accomplished only through battle, is to ascertain the location and route of approach of the hostile front and flanks in general; to establish and retain connection with our own detached groups, or, in short, to surround the opponent with a circle of smaller or larger reconnaissance detachments, which circle will at the same time serve as a screen for our measures, provided we have first succeeded in gaining the upper hand over the hostile cavalry.

An excellent example of this is furnished by the operations of the Fifth and Sixth Cavalry Divisions, later also by the Guard Cavalry Division of the Prussian Second Army at the commencement of concentration in the Palatinate up to the day of the battle at Vionville and Rézonville.

COMMENCEMENT OF THE BATTLE.

If the cavalry has thus prepared the expected battle, it will have paid well for itself, by having unburdened the infantry from the onerous duties of security and reconnaissance during the march and during rests and having furnished the highest leader material with which to arrive at a clear decision. Thus the infantry can save its powers while marching, can rest tranquilly and can in fresh shape enter the battle which now-a-days may be expected to last for days.

The strategic reconnaissance of the larger cavalry bodies changes automatically into the near reconnaissance, and later on into the battle reconnaissance; cavalry, in the start in front, has now no longer sufficient room and, *pursuant to orders of the commander-in-chief*, takes station at points from where it is to participate in the decision. Errors committed in this regard can never, or at least only with great diffculty, be rectified. The gravest error in this regard is to insert the main body of the cavalry between the infantry.

For its operations cavalry requires freedom of movement. Consequently its proper location is on the wings, or if our advance is made in several columns or groups, at those points from where it can observe the commencing battle from covered position and from where it can effectively interfere according to necessity.

Napoleon always concentrated his cavalry at the point where he sought the decision. Then he utilized it according to need, either to prepare the success (Wagram, 1809), or to participate in the decision (Borodino, 1812), or to prevent reverses or catastrophes (Aspern, 1809), or to gather the fruits of the victory after decision had fallen (Jena, 1806).

Holding to the maxim that cavalry should always be in front, opportunities will very frequently arise in the introductory battles, at the commencement of a large battle, for cavalry surprises, which may become of decisive import in the further course of the battle.

At Somosierra, November 30, 1808, the main column of the French army, two infantry and almost three cavalry division (10,000 troopers) under personal command of Napoleon, engaged eighteen Spanish battalions which held the steep heights on both sides of the Somosierra Pass, while sixteen Spanish guns were posted across the road in four batteries in such manner that they completely commanded with their case shot the defile.

Naploeon personally reconnoitered with field glasses the hostile position, convinced himself of the fact that the road led through an absolute defile, and then issued orders to the commander of the advance guard cavalry (General Montbrun) to have the Polish Chevauxleger squadron (150 troopers) attack the hostile battery in sight. The intrepid General Montbrun took the liberty of declaring that the charge would be impossible. Napoleon repeated his orders. Lieutenant Colonel Kozietulski started the attack, and after seven or eight minutes (the charge covering more than 2,500 meters) the defile and four batteries were taken by *one* squadron. The losses were nominal considering the success. The French infantry ascended the heights

without encountering any material resistance and lost but 100 men, while the squadron under Kozietulski lost 6 officers, 80 men and 35 horses killed or wounded; but it captured 15 guns, 1 color and 200 prisoners.

This valorous achievement of the Polish cavalry is duplicated by the well known charge of the fifteen squadrons under Colonel Pulz at Custozza, June 24, 1866, on the east wing of the battle about to commence. With a loss of 19 officers, 360 men and 490 horses this division prevented any further participation during the battle of two entire infantry divisions (Bixio and Umberto), approximately 30,000 men.

MOMENTS FOR LAUNCHING CAVALRY CHARGES DURING A BATTLE.

How, when and where masses of cavalry or smaller cavalry groups shall be inserted during a battle depends on the qua'ity of th · cavalry, on chance, on luck, and primarily on the ability of the leader. No hard and fast rules can be laid down for it. The battle of Liao Yan, to cite a modern example, offered more than one opportunity for efficient cavalry leaders.

I will here call attention to the fact that the general opinion is that *frontal* attacks by cavalry in open terrain, precluding surprises against unshaken infantry and artillery is folly and should be resorted to and carried out only in extreme cases. Even Seydlitz resorted to such an attack only once, at Zorndorf (1758), where, in spite of victory, he lost more than 1,300 men, or twenty-one per cent.

On the other hand, the effect of modern fire-arms makes itself felt directly only on the limited zone of the battlefield, but not in the extended zone of the modern battle. In the latter, therefore, cavalry which is imbued with the true cavalry spirit will always find well paying objects for attack.

Out of a mass of examples I shall here only cite Colonel Edelsheim's charge at Magenta (1859), the battles of the Reserve Cavalry Divisions Holstein and Coudenhove at Königgrätz (1866), the charges of the Brigades Bredow and Barby and those of Colonel v. Schmidt at Vionville (1870), and the audacious charge of Bechtolsheim at Custozza (1866).

Considering the enormous extension of modern battlefields it will hardly be probable that a decision can be arrived at at only one point of the field. Defeat at one point of an extended battlefield will no longer effect the whole as heretofore, as for instance at Gravelotte or Königgrätz. Therefore all arms must asist with combined forces in the decision and must carry the defeat of the enemy, from the point where he was

beaten, to those parts of his force which still hold their ground. Cavalry is especially suited for this on account of its mobility, of course, with proper assistance of artillery and later on by the infantry after it has regained its breath.

One arm alone will never achieve the decision in a modern battle. Infantry alone will hardly be able to thoroughly beat the enemy by itself, and it is just as impossible for cavalry to beat an equal opponent unaided. In any case, cavalry must do its *full* duty wherever inserted, either in the decisive battle or in the pursuit. "The work of cavalry is not one of mercy or compassion." (Prince Frederick Charles.)

A model for all times to come will always be the working together of all arms under Napoleon as well as under Archduke Charles in the battle of Wagram; of the Germans in the battle of Vionville and of the Austrians in the battle of Custozza.

Saving the cavalry until the close of the battle, to have it ready for the pursuit, would be a wrong speculation. Fleeing infantry can be pursued at the trot. The fleeing enemy is more played out than our horses in all probability.

Had the six Austrian strong cavalry divisions been ordered to interfere during the decisive battles for the Swiep forest at Königgrätz (1866) *no one* can tell what the outcome would have been that day. Only *after* the decision had fallen, the Austrian infantry was saved from annihilation by the interference of the First and Third Reserve Cavalry Divisions in the center and by the First Light Cavalry Division (Edelsheim) on the south wing, the latter division resorting to dismounted fire fight. The Reserve Cavalry Divisions Coudenhove and Holstein lost in this 72 officers, 1,260 men and 1,900 horses. The brigade Bredow lost at Vionville 16 officers, 370 men and 400 horses and succeeded not only in saving its own infantry, but assisted greatly in the decisive victory.

Cavalry must be in readiness for immediate action not only to independently utilize every favorable opportunity offering itself for surprising the enemy, but mainly to help its own infantry and artillery over crises. Then, of course, no sacrifice is too great. Why should there be such a hesitancy to offer up our cavalry? There are many opportunities for battle and activity between sacrifice and inactivity. Prince Frederick Charles said that cavalry is too costly to *not* utilize

it. We must demand the impossible of this arm of the service, because otherwise it would be only a costly luxury.

Did not the death ride of the Prussian First Guard Dragoon regiment at Mars la Tour fully pay the costs by creating a breathing space for the parts of the Tenth Corps just arriving on the battlefield?

RAIDS DURING BATTLE.

During the modern, long continued battle an efficient reconnoitering detachment, going to the farthest zones in rear and flank of the enemy, will succeed in ascertaining where the ammunition, subsistence and sanitary columns are located which are to replenish the fighting line. Plenty of opportunities will offer themselves to destroy such columns and create thereby situations where the hostile fighting line, being without ammunition, or being starved, will evacuate its position to our infantry at the critical moment. The numerous telegraph and telephone lines in rear of the hostile front will offer excellent objects of attack by smaller, rapidly moving bodies of cavalry. Such destruction may paralyze for hours the hostile leadership and artillery fire. Thus we have the tactical duty of worrying the flank and rear of the enemy and thereby force him to make detachments by unexpected attacks on his reserves.

On June 24, 1866, Captain Bechtolsheim in command of three platoons Uhlans dispersed the approaching Italian Infantry Brigade Dho in such a manner that it did not come into action that day. Loss of the Uhlans: two officers, eighty-four men and eighty horses.

Finally, each concentration of larger masses toward the battlefields creates situations in which an efficient cavalry body will succeed in keeping detached columns sufficiently far from the battlefield to delay their participation in the decision or to entirely prevent it.

Such a situation happened to the Austrian army July 3, 1866, at noon at Königgrätz.

DECISION FOR INTERFERENCE OF THE CAVALRY.

As a general rule, the large bodies of cavalry stationed on the wings of the battle front, often several cavalry divisions, will be concentrated there in one body, are much too far from

the highest commander to receive special orders covering each case. It is thus absolutely necessary that all bodies of cavalry used on one wing be placed under one commander.

This is clearly shown by the events in Bohemia and Italy in 1866, as well as by the cavalry action at Vionville. The example of the glorious victory of Custozza, Colonel Pulz, who, though junior in rank to other officers was entrusted with the command of the body of cavalry operating on the right wing of the battle front, is instructive. At Königgrätz, unfortunately the opposite was the case. There each cavalry division operated independently in spite of the fact, or possibly because of the fact, of Benedek having placed all of his cavalry behind the battle front to remain "at his disposition." Half of these cavalry bodies joined the retreat without having made a single charge.

Provided the cavalry has been assigned its correct place by the commander-in-chief, the cavalry leaders will find plenty opportunities to arrive at decisions as to when and where to interfere. If a cavalry leader waits for orders from higher authority for that, he will always be too late.

At the opening of the campaign of 1805 Napoleon possessed excellent cavalry commanded by young officers educated in their profession, who possessed the confidence of the men and who operated on their own responsibility.

Of the Prussian cavalry leaders of the year 1806 the British Brigadier General Remington says that "they were peace generals who never took the initiative and who always avoided to leave their well worn ruts. They were fine men and very smart on parades. They were seldom on horseback and when they had to be, they chose quiet, tractable animals. They were fat, old, slow-going gentlemen, entirely unsuited as cavalry leaders, because it was impossible for them to sit eighteen hours in the saddle on the hot summer days. Thus 225 Prussian squadrons, in which the spirit of Seydlitz and Ziethen still lived, were swept off the face of the earth by the young, active French cavalry." Fieldmarshal Archduke Charles supports this view by saying: "The good Prussian cavalry was lamed by incompetent leaders and faulty dispositions."

Napoleon issued instructions that infantry officers were never to try to prove to their cavalry that their attacks would prove fruitless. That would lame the offensive spirit of the cavalry arm.

FACTORS INFLUENCING THE CAVALRY ARM. KNOWLEDGE OF THE TERRAIN.

Modern battlefields are not target ranges. Forests and villages, hills and valleys, wire entanglements and defiles cannot be seen as readily on the battlefield as they can on the war game map. Knowledge of the terrain in which a cavalry

leader has to maneuver his command is of greater importance to him than it is to the infantry commander. Woe to the cavalry, should it unexpectedly encounter difficult or unsurmountable obstacles in a charge. For this we have horrible examples in the very death rides of the Cuirassier Brigade Michel and the Cavalry Division Bonne-main at Wörth and of the Cavalry Division Margueritte at Sedan in 1870.

The desire of having freedom of movement toward any side must cause the cavalry, as long as it stands in readiness for action, to take proper steps to gain the most exact knowledge of the terrain over which an attack will probably be made. Nothing undermines the trust of the men in their leader and nothing shakes the moral element, which is the very foundation of modern cavalry, more than the knowledge of having been *uselessly* sent into death and destruction.

Each cavalry charge, which comes to a standstill in the rapid fire of unshaken infantry must end with annihilation; the utmost rapidity of movement can be achieved only when charge can be made without stop and without change of direction in the zone of the enemy's fire.

The advance preparations for the charge must be made thoroughly down to the very last details so that when the moment for the charge has arrived, the decision is materially simplified and consequently more quickly arrived at and the execution will be in accordance with the leaders wishes. Here and there a few valuable cavalry lives may be lost before the charge, but they must be sacrificed for the welfare of the whole.

PROBABLE EFFECT OF FIRE.

Tacticians of the present day, who probably never saw a charge, calculate the effect of fire on oncoming cavalry according to the results of the target range. Is this not a wrong calculation? The few military historical, available data of recent meets show different results. Thus I can confine myself to cite these here and will refer to the interesting essay by Lieutenant Eyb published in 1908 in the *Kavalleristische Monatshefte* concerning theoretical calculations. Eyb calculates as follows the losses of a body of cavalry which has approached to within 600 paces

of an unshaken infantry, but which has been under fire for some time, based on experience on the Bruck traget range:

Nine per cent. of the animals and five per cent. of troopers killed; twenty-seven per cent. of the animals and twenty per cent. of troopers wounded.

These results are based on both infantry and cavalry being numerically equal. Actual events show more favorable results.

At Sedan, where the Germans fired on the French during the battle, like into a sack, there was one hit to every 375 rounds fired.

In the battle at Valestino (27 April, 1897) the seven squadrons (400 troopers) under Colonel Ibrahim Bey had a loss of only 30 dead and 100 wounded, though they were under cross fire of unshaken infantry in trenches and three batteries, which fired case shot, during the most dangerous part of their charge, that is at short range. In spite of that murderous cross fire the Turks finally charged and stormed, dismounted, the attack objective, the infantry trenches—dismounted, because their horses had completely given out.

In the above mentioned charge of General French on the Modder River 1900 the losses of the cavalry division (3,600 sabers) were 16 dead and wounded and 30 horses, that is less than one per cent. And in addition, the opponent consisted of world renowned Boer sharpshooters.

During the days of Sandepu (27 January, 1905) the Second Daghestan Cavalry regiment charged victorious Japanese infantry (about two battalions) establishing itself in the village Landungou and supported by eight guns; the charge commenced at about 3,000 paces. The charge, executed under the most unfavorable conditions, came to a stand at wolf pits, wire entanglements, and a natural, unsurmountable ditch at close range of the firing infantry. The regiment retreated the way it came, losing heavily. Total loss: three officers, sixty-three men and sixty-two horses. One squadron advancing on the flank, had but one man wounded. In spite of a hot fire lasting fifteen minutes, the loss was but sixteen per cent. The charge was made at the trot.

Bagraton describes a charge of several sotnias of the Fourth Ural Cossack Regiment against two companies Japanese at Zinzajpao. The Japanese were driven back, losing 100 dead, 57 wounded, 39 prisoners, while the Cossacks lost 1 killed, 7 wounded, 12 horses.

These charges all were made without possibility of surprise and against more or less intact, and even victorious infantry. Thus the infantry will first of all have to bring proof that its fire is actually annihilating at all times. Unfortunately there are no experiences in regard to machine gun fire. In war they undoubtedly will play an important rôle. Still, cavalry must not ask what arms the opponent has, all it has to ask is: "How shall I attack to prevent the opponent from profiting the least from the fire effect of his arms."

PHYSIOLOGICAL EFFECT OF FIRE.

Much has been written, especially by the medical profession concerning the humane wounds caused by the jacketted bullet. Experience now has shown that even serious or mortal wounds do not place men and horses immediately *hors de combat*. Hits in the brain or back bone, in the full stomach or heart are as a rule mortal; hits in bones as a rule make the man or animal immediately unfit for further service; but hits in the lungs, muscles or intestines cause relatively slight wounds and lead to unfitness for immediate battle only after some time has elapsed. French experiments gave the result that eighty per cent. of mortally wounded horses were able to cover two kilometers at the gallop and that the largest part of them died only after some hours. Of interest is the report of the Prussian Lieutenant v. Salzmann concerning the wounding of his horse in an engagement with the Hereros, which latter used the dumdum bullets in part. His horse was hit at a range of 100 meters, reveiving three bullets almost simultaneously from the left, the first piercing the croup, the last one the heart. In spite of this the horse carried its rider more than 1,500 meters out of the danger zone before falling down and expiring.

I may be allowed to cite here also an event occurring in the battle of Custozza. My father, serving as captain in the Bavarian Hussars in the Brigade Bujanovic in the charge against Villafranca, suddenly encountered, in the pursuit of Italian troopers and accompanied by but a few Hussars, heavy infantry fire at the edge of the village of Villafranca. He was wounded and his horse was shot in several places. After it had carried its rider for quite a distance out of range of the bullets it fell dead, burying its rider underneath of it. With sixteen bullets in its body it had covered more than two kilometers before falling!

The inference is easily arrived at: In a charge covering more than 1,000 meters the larger part of seriously wounded horses would carry their riders still to the infantry and only play out when the objective has been reached, when the enemy has been ridden down.

The Italian War Office appears to have come to the same conviction, based on experiences of the Tripoli campaign, for

it is stated in newspapers that it is the intention of the Italian government to change the caliber of the small arms and to abolish the jacketted bullets.

SURPRISES.

Wherever cavalry intends to operate it should endeavor to surprise the enemy. It will surprise him *morally*, if he shows no resistence although he had time therefor, because his nerves gave out and prevented him from coming to a decision to action.

In the campaign of 1866 in the Tyrol, Lieutenant Torresani, reconnoitering with a patrol of eight troopers, unexpectedly encountered a strong column of Garibaldi's force. Deciding on the spur of the moment, he charged the head of the column, dispersing it; then he quickly faced about and received a badly aimed fire only shortly before his disappearance. Only one horse was slightly wounded in this affair.

We can also imagine how easily cavalry can come by fortunate circumstances, into situations where it can surprise *physically*, *i. e.*, where the firing opponent is unable on acount of sufficient time to fire the necessary number of rounds to drive off the cavalry. Such a case probably can happen only to very small bodies of cavalry against infantry (charge made by Bechtolsheim at Custozza in 1866), while larger bodies of cavalry can count only on *moral* surprises, from which, however, more frequently happens the more the hostile infantry and artillery is shaken in its powers of resistance.

A case of physical surprise by larger bodies of cavalry happened under my personal observation during the cavalry maneuvers of 1889, in which I served on the division staff. Two cavalry divisions stood opposed to each other at cannon range. Our division was in a position behind a forest and had the duty of favoring the retreat of our infantry. Between our and the opposing division was bottom land covered with corn, which our division commander decided to cross in mass formation to attack the opposing division in flank and unexpectedly. The formation probably was not happily chosen, the regiments marched in column alongside each other.

The hostile division commander at once perceived our critical situation as we moved in a flank march in a dense mass across the lowland. He immediately launched one of his brigades against us on the shortest road and that brigade came so rapidly that only the regiment riding on our flank found time to deploy; the regiment next to it engaged only in part, and the other brigade simply remained still and did nothing. During this cavalry battle, which resulted in our defeat in spite of our numerical superiority, the other hostile brigade attacked our unprotected infantry in rear.

PSYCHOLOGICAL EFFECT OF MODERN BATTLES.

Whoever has closely followed the reports and accounts of the battles of several days' duration in Manchuria, gains the impression that infantry and artillery suffered from extreme tension of nerves in the first hours and days of a battle. Officers and the best men had fallen, a shot up mass of men, among them many cowards, still held the positions, in trenches, for days without food. Ammunition commenced to run short; complete apathy set in, as has frequently been observed to happen here and there in maneuvers during exhausting marches and engagements. Absence of leaders, mixing up of different organizations, psychic and physical exhaustion and hunger, changed even the best of troops into mobs. Should then the cry be raised "*cavalry is charging us*," is it to be wondered at that every man's heart jumps into his mouth and that the human machine gives out completely? Is it any wonder then that in the fear and surprise most if not all of the rifles are fired into the air without proper aim? Is it any wonder then that the men no longer can work their rifles properly, can no longer calmly insert cartridges in their magazines when the cavalry charge overwhelms them?

And those are the times when cavalry reaps the benefit and pay for its weeks of endurance and hardships in the reconnaissance service, and when it can gain time for its own weary infantry to again concentrate for renewed efforts and advance.

Each and every cavalry charge on a large scale attracts the attention of all parts of the battle front which may be struck by the charge. Even if the charge miscarries our infantry has an opportunity during its execution to better its position and thus the charge does its part in preparing the subsequent victorious decision.

The charge executed by Bredow's six sqadrons sufficed to lame several infantry and cavalry divisions for some hours, although no fresh cavalry bodies followed up that charge.

The psychological effect on the infantry will, of course, not be the same along the entire battle front. To perceive the proper moment for a charge on some part of the battlefront and to be able to utilize that moment is a most necessary qualification for an efficient cavalry commander. And just because

it is a difficult matter to perceive when the proper moment has arrived, we have so very few historical examples of fortunate and decisive cavalry charges against infantry. The more destructive modern fire-arms prove to the moral and physical force of the battling arm, the more frequent will chances offer themselves for cavalry charges, and one who then hazards all, will win. The success attained well pays for the necessary blood expended.

When Prince Frederick Charles issued orders in the evening of the 16th of August, 1870, to the Brigade Schmidt (Third and Fifteenth Hussar Regiments) to charge northeast, he justified his decision with the words: "I want to prove to Marshal Bazaine that I have won the battle." When the Hussars a few minutes later dispersed the hostile squares, just as darkness set in, the Germans for the first time heard the cry "*sauve qui put*" of the brave enemy, whose officers even were carried away by the resulting panic.

It should not be neglected here to call attention to the fact that the technique of the infantry battle has completely changed at the present day. Napoleon expended masses of infantry, occasionally several divisions, for the decisive attack; later on the battalion became the tactical unit; after the Franco-Prussian campaign it was held that the company commanders had won the campaign, and today we expect things of the individual soldier, which we did not expect from any one less than a general in olden times.

The simple soldier is expected to know all about the terrain: to be able to judge distances with due regard to all factors; to correctly estimate the proper rate of fire, saving or expending ammunition; to observe the enemy's and his own fire effect, etc., and withall keep a clear head! After long and exhausting marches in long columns on dusty roads, after marching across rough country with heavy pack, after long work with the spade, in which latter work he is supposed to be an expert, after remaining for hours under hostile fire, of the intesnity of which we can form but a poor opinion based on the ammunition expended in the last war, he is supposed to have an efficient, calmly working heart, though his stomach often repels for the want of nourishment and though thirst brings him near utter exhaustion! Are not all these things psychological and physiological moments which more than ever heretofore promise a future to a brave and heroic cavalry?

AFTER THE DECISION HAS BEEN MADE.

The maxim, so frequently treated of in theory: *"Pursuit of the retreating enemy or salvation of our army after a lost battle"* appears to be hard of execution in practice. At least the history of the latest campaigns cites but a few successful pursuits operations on a large scale. Attempts to save the army were either superfluous because the enemy did not pursue, or they mostly ended with complete annihilation of the cavalry which sacrificed itself.

Classic examples of pursuits are Napoleon's operations after Jena (1806) and those of the allies after the battle of Waterloo (Belle Alliance 1815), which ended with the complete dispersion of the hostile army.

The pursuit after Königgrätz was far from being carried out energetically, prevented, however, by the correct utilization of the Austrian cavalry divisions. After the large battles of Metz and Sedan no pursuit took place because the hostile army was bottled up.

The Russo-Japnese War did not show anything much in this respect, as neither after Liao Yan nor after Mukden were there sufficient Japanese cavalry available and as the infantry of the victor was so exhausted, on account of the battles lasting several days, that no thought could be entertained of a rapid pursuit in spite of the desires of the highest leaders.

The salvation of the Austrian Army at Königgrätz, achieved with the greatest bravery, was affected by only one-half of the available cavalry. Only the First Light Cavalry Division (Edelsheim) and the First and Third Reserve Cavalry Divisions (Holstein and Coudenhove) were used and prevented for the moment the Prussians from pressing after the debris of the army fleeing across the Elbe, while three divisions accomplished the retreat with the infantry, without having been in battle

On the other hand, the charges of the Cavalry Division Bonnemain and of Michel's Brigade at Wörth, as also the audacious charges of Gallifet at Sedan, show clearly how salvation attempts should *not* be made.

An excellent example of how cavalry as a part of a smaller force can save its infantry from destruction is found in the battle of Melilla, (20 September, 1909). Ninety Alfonso Jägers charged the Moors attacking the rear guard battalion and bring them to a stand; a second charge of not more that forty Jägers cuts the Moors away from the infantry and the third charge made by but eighteen Jägers, causes them to flee. This squadron stood for fourteen hours without food, feed or water in torrid weather, charged three times in the deep sand, and had but eight killed and seventeen wounded. Its own battalion was saved and the enemy lost 100 wounded; wounds caused by the *arme blanche*.

After the decision has fallen we must demand of the cavalry that it remains in close touch with the retreating enemy, that it drives him on the evening of the day of battle and in the subsequent nights from his camps or cantonments and thus

increase the general dissolution to annihilation. What matters a few hundred played out horses, if we can thereby spare our own army another bloody battle. But as a rule we do not know the degree of the enemy's dissolution, because, as is clearly proved by the battles of Wörth, Vionville, Liao-Yan and Mukden, contact with the enemy was lost in a very short time. That the cavalry under such eminent leaders as were the victors in the just mentioned battles omitted this first duty after a gained victory is proof how difficult it is to hurry played out troops after a fleeing enemy.

Had the Japanese known conditions with the Russian army after Mukden as we know them today from Ullrich's *"Baptism of Fire of the Russian Army in the Campaign of 1904–5,"* they undoubtedly would have inserted the very last man and horse of the combined Brigades of Akiyama and Tamura to annihilate the Russians.

If we have no longer any large cavalry masses at our disposal for the pursuit, smaller bodies of cavalry will perform the same service in certain respects, by swarming around the fleeing enemy like wasps, stinging him wherever possible, allowing him not a minute's rest and exhaust him completely physically, until our own infantry, refreshed in the meantime, again comes up and takes over the pursuit.

ATTACK FORMATION OF CAVALRY.

Although it would be interesting to form a theoretical picture of the formations in which cavalry attacks infantry and artillery, nothing would be served thereby

I am of opinion that every efficient cavalry leader improvises the formation for the charge or mounted attack in each single instance according to the situation as found. Only the enemy's situation, the terrain and condition of our troopers can say where the charge will suffice or whether dismounted fire action has to be resorted to in order to screen the cavalry's preparation for the mounted attack, or whether the dismounted fire fight should be had in combination with the mounted attack. The first requisite for *each* formation of attack is that the form of deploying assures the highest celerity and power of shock.

Our most important and most costly arm was, is, and will always remain the quick and obedient horse. Any cavalry leader who is ignorant of fully utilizing this arm and who does not bring it to its fullest account wherever possible, will have but little use also for repeating carbines, machine guns and rapid fire artillery, because he will finally transform his cavalry into mere mounted infantry.

Ability of quick motion of cavalry has very materially increased in the past fifty years; it undoubtedly can be still more increased. Rapidity goes hand in hand with increasing betterment of horse material. It is the duty of a cavalry genius to utilize both for the annihiliation of the hostile battle front. Wave after wave must be thrown in succession against the hostile fire; the first wave to shake the opponent, the second to frighten him, the third to cause him to flee, when he sees these waves engulfing him from all directions.

Sufficient room for the attack by masses of cavalry will be found in every field of battle. A brigade requires approximately 1,500 meters, a division, which must be formed with great depth, hardly more than 2,000 meters.

In 1862, Stuart attacked at Old Church in column of fours; Bechtolsheim at Custozza in column of platoons; Pluz at Custozza and Bredow at Vionville in line; French at Clip Drift in three lines, the first line deployed as skirmishers. On September 7, 1757, Seydlitz stormed, at Pegau, the bridge across the Elster with dismounted Hussars and immediately thereafter defeated the hostile cavalry with his troopers by coming unexpectedly out of that village. A few weeks later, November 5th, he screened his departure by five Hussar squadrons fighting on the Janus Hill east of Rossbach and then charged in full force the superior cavalry of the allies which was marching along without apprehension, defeated it and then turned against the nearest infantry, compelling it to flee. At Jicin, the Division Edelsheim fought dismounted independently, holding a hostile infantry division for hours.

Examples regarding the operations of the cavalry in the battle of Liao-Yan from August 29th to September 5th would form a chapter by themselves. We will briefly state that the faulty utilization of the cavalry in the Russo-Japanese War were the principal reasons for the failure of this arm and that the phases of the modern battles did not condemn that arm to inactivity.

From all this we draw the following conclusions:

The *very best* leader is just good enough to lead a large body of cavalry. Over production in this respect is not to be feared. Every trained tactician will know how to utilize cavalry, but only an actual, competent cavalry general can lead it. Such men are a scarce gift of God.

Cavalry must be equal to all demands in war in respect to organization, training and equipment and it must try to keep up with the progress of the other arms in the tactical field by increased fostering of the cavalry spirit, which never precludes utilization dismounted. Fostering the cavalry spirit in the troop, in the regiment, etc., must receive the place which is its proper due. The moral qualities of troops and their confidence in their leaders counts more than a double superiority, according to the lessons taught by the Russo-Japanese War.

Cavalry, which believes itself invincible, and is thus filled with the true cavalry spirit, will always be victorious, still the thunder of cannon, in the roll of rifle fire, in the clatter and rattle of the mêlee it should always have in its mind and hear General Wrangel's words: "A body of cavalry, which consecrates itself to death, can not be stopped by any earthly power and its victory is just as certain as the night is followed by day."

THE IMPORTANCE OF CAVALRY.*

By FREDERIC H. VON BERNHARDI, General of Cavalry, (Retired) German Army.

THE fire of modern rifles and guns has deeply affected the tactics of the three arms, as we have seen. While it has altered only the form of fighting of infantry and artillery and the manner of their tactical employment without touching the impotrance of both these arms as a whole, and within the army, it has had a far greater influence on the cavalry. Not only the *tactical formations* used by cavalry in action have

***Extract from a recent book by General von Bernhardi entitled "On War of Today."**

changed, but its *employment* is altogether different. Whereas, its importance rested in former times chiefly on its decisive participation in battle, its importance today is founded on *strategic* action. But in that sphere of action the value of cavalry has extraordinarily *incresaed* just owing to these very conditions of modern times, as will be seen, if we examine them with an unbiased mind.

The opinion is generally held, it is true, that the cavalry has lost almost all its importance in the face of modern arms and armies of masses, and this opinion is apparently confirmed by the experiences of the latest wars, in so far as indeed the cavalry has played a very inactive rôle in modern campaigns, with the exception of the South African War; but this circumstance cannot at all be considered decisive for the future, for they were quite peculiar conditions which caused the cavalry to make such a poor show in recent times. One main point above all was of decisive importance for this.

The effect of modern firearms, with all its consequences, has, as we have seen, caused occasions for successful charges against firearms to be of very rare occurrence in the latest wars, and they will be rarer still in future. Such charges have, however, positively ceased to be of decisive importance in battle, by reason alone of the comparative small numbers of cavalry. Owing to the enormous size of modern armies and the extent of the battlefields, a successful charge of even so large a body as a cavalry division could no longer bring about a decision by itself. But the cavalry has nevertheless hitherto stuck to the fiction that its relation to the other arms was still similar to what it was formerly—that an action of the three arms combined was possible even to-day, as in the days of Frederic and Napoleon. The cavalry looks now, as it looked then, upon a charge in battle as its paramount duty; it has almost deliberately closed its eyes against the far-reaching changes in warfare. By this it has *itself* barred the way that leads to great successes. The responsible military authorities has failed in the same way. Very reluctantly the cavalry was armed with firearms, at first even with quite useless weapons, and it is but very recently that the German cavalry got an efficient rifle; its use is still looked upon as quite a subordinate matter. The

tactical exercises of cavalry divisions are still carried out as of old; we still cannot bring ourselves to enter heart and soul upon the tasks imposed on us by the new order of things. Superior commanders, too, are still imbued with obsolete ideas, and employ cavalry according to these ideas. The Emperor's "maneuvers" in 1909 furnish an interesting example of this. Cavalry owes its decline to all these circumstances. But whether it will gain in future the place due to it will, above all, *depend on whether the rank and file will resolve* with open eyes *to break with the ideas of the past*, and *devote themselves to the tasks of the present without reserve*.

The German cavalry need not, for all that, give up the hope of successfully charging infantry and artillery. Anyone who wished to deduce from my remarks that I thought the time for such charges was a thing of the past would completely misunderstand me. I am rather of the opinion, and have always stood up for it, that modern infantry will sometimes present a favorable object for a charge, especially when it is a question of infantry of the second and third lines. If such infantry is demoralized by the dissolving influences of modern action, is out of hand of the commanders, and no longer fires deliberately, it will easily enough become a prey of a bold cavalry charge from various directions if the ground offers at least some advantages. Such situations are sure to arise even to-day, especially in pursuits. The enemy's artillery, standing far behind the foremost fighting line, can also often be attacked by cavalry, though not in front, yet from the flanks, and especially in rear, if the enemy has used up his reserves, or, as a modern writer has it, if there are no reserves at all, and have been replaced by "motors full of ammunition."

Obsolete, I only hold to be that opinion which thinks that the *main task* of our cavalry is to co-operate directly with the other arms and to charge in battle; which desires to subordinate all action of cavalry to this task, treats fire-fight of cavalry merely as a last resource, and would like to restrict the strategic freedom from that arm by constant deference to its possible employment on the battle field.

If the cavalry takes the field in a future war with notions

of that kind, it will *certainly not* give us that advantage which we otherwise can expect, and have a right to expect from it.

The relations of cavalry to the other arms, and altogether to the conduct of war, have, as a matter of fact, completely altered. *An action of the three arms combined in the old sense,* as is still hovering before the mind of our cavalry soldiers as a delusive idea of bygone times, is *no longer feasible at all.* The participation of cavalry in the decisive action of infantry and artillery is no longer necessary. All the more important it is to be absolutely clear on the tasks which a future war will demand the cavalry to solve, and on the mode by which these tasks must be solved. The superior commanders and the cavalry itself must learn to deal with these problems, and prepare themselves to carry them out, if the cavalry is to continue to be a useful instrument of war in the future.

Reconnoitering and *screening* must be mentioned first of all in this connection. Both have eminently gained in importance under modern conditions. Advantageous as it is to have as accurate and as early information as possible on the enemy's measures, and to screen our own concentrations and movements with the object of surprising the enemy and increasing thereby the chances of success, the advantages will be all the greater when great masses are concerned. The larger the armies are which are being moved, and the longer it therefore takes to concentrate them or change their direction of march, the more important it becomes to reconnoiter in time, so as to be able to initiate early enough the measures which may have become necessary through the facts ascertained by reconnaissance. Modern arms indirectly influence reconnaissance in so far, too, as, owing to the long range and effective indirect fire of artillery, we must deploy for action sooner than formerly. It will be very exceptional for superior commanders to reconnoiter personnally before such deployment. They are thus almost entirely dependent on the results of cavalry reconnaissance, not only for their operations, but also for their dispositions for battle. This makes cavalry reconnaissance all the more valuable, but also calls for greater efficiency of that arm.

The cavalry must precede the armies as far forward as possible, to beat the hostile cavalry and push it back vigorously, so as to allow our own patrols to approach rapidly the hostile columns and discover their movements. So long as an efficient hostile cavalry is in the field, our own will be hampered in all its enterprises, and accordingly obtain little information. We must further bear in mind that the enemy's cavalry may decline to fight with cold steel, using the carbine instead, and be supported in this action by detachments composed of all arms. The cavalry must therefore, be prepared to undertake independent operations of an extensive nature, and be able to beat by dismounted action strong hostile forces, or to turn them. If it can do both, then, and only then, will it carry out its object.

Offensive power is, however, not enough for cavalry; it must have also learned to push out its reconnoitering bodies rapidly and systematically, and to send back as fast as it possibly can to the head quarters concerned the early information it had obtained. Great horsemanship, combined with daring boldness and vigilance of patrols and reconnoitering squadrons, are necessary to attain these objects; all mechanical means must, moreover, be used to promote rapidity of gaining and transmitting intelligence of decisive importance. The army cavalry must therefore be equipped and conversant with wireless telegraphy, telephones, signalling apparatus and flying machines, the uses of which have already been discussed in another chapter. It may also be advisable to use signalling balloons, with the object of conveying to the reconnitering squadrons orders and other communications. If we make such a balloon ascent at a certain hour of the night from a preconcerted spot, the reconnoitering squadrons and other detached bodies will be able to discover it easily, and read the flashes given by the Morse code. If this system answers well at trials made in peace-time, each cavalry division could be equipped with a small balloon of that kind. It would render good service in clear weather. The cavalry must also keep as much as possible in constant touch with any dirigible arisships that may be avilable. The airships must arrange their action so as to work ahead of the cavalry, and furnish it with intelligence about large concentrations of the enemy or their approach, to enable the cavalry to adopt its measures accordingly. These

ships must therefore beat the enemy's airships and flyers, and start early to meet them with that object. To insure co-operation in reconnaissance on land and in the air, will often be advisable to place the cavalry and airships under one uniform command. The intimate co-operation of these two arms will best insure success. We will also be obliged to attach to the cavalry specially designed guns to support our airships in their fight against those of the enemy, or to fight them independently.

Early reconnaissance is particularly important to that party which has resolved to remain on the *defensive*, strategically or tactically. That party has then surrendered the initiative to the enemy, and must conform to his will. It cannot arrange for suitable measures of defense until sufficiently informed as to the grouping and main direction of attack of the enemy; it runs the risk of being too late with these defensive measures; if it does not receive correct intelligence about the enemy's measures in ample time. At the same time, it will be its concern to screen the position of its own reserves, so as to deliver a counter attack by surprise. *The assailant*, on the other hand, who seizes the initiative and imposes his will on the enemy is in the first instance, interested in *screening* his concentration, and his main direction of attack so as to act by surprise, and thus make it impossible for the enemy to adopt his counter measures in time. But it is also desirable for him to gain a knowledge of the strength and grouping of the hostile reserves, so that he may not come unexpectedly on stronger forces than he had anticipated. In this way the cavalry has always to face the double task of simultaneously reconnoitering and screening; and it will often have to decide on which of these activities it has to lay the greatest stress. When screening, it will, above all, be a question of warding off with firearms any hostile attacks, because effective screening is generally only possible by defensive action in combination with ground. Sometimes only when advancing must we try to screen offensively by boldly attacking every hostile party, down to a single patrol, pushing them back, and endeavoring to caputre the enemy's dispatch riders. If screening is to be supported by airships and flyers, it can only be done offensively by attacking the hostile ærial fleet and trying to render it harmless.

When we are reconnoitering and not screening, we must always try to come to close quarters with cold steel, as we wish to attain our object quickly, and must therefore decide an action rapidly, and that can only be done by charging. In case of need only, when there is no other course open, must we have recourse to the carbine. Since both parties have an equal interest, as a rule, in gaining rapid success, we are justified in assuming that during the first period of a war there will be great cavalry charges, and that only that party will have recourse to firearms which, from experience, has become aware of the enemy's superiority when charging; the party using its fire arms must then be beaten by dismounted action as well. From this it follows that cavalry, intent on carrying out its duties, must also prove superior in dismounted action, so as not to lose in fire action the superiority it has gained with cold steel.

In addition to reconnoitering and screeening, the cavalry must at all cost *act on the enemy's lines of communication.* This is of the utmost importance in modern war. The larger the armies, the less they are able to live on the country; the quicker and the further the fire arms shoot, the more ammunition will be spent. In equal measure grows the importance of supplies and of the lines of communication; the interruption of regular supplies may prove then all the more fatal. Here, therefore, is a field for the cavalry to achieve far-reaching successes. Even tactical decisions may be effected, at least indirectly, by the enemy's supplies of ammunition being cut off directly in rear of the battlefield.

In view of these dangers threatened by cavalry, both parties will take pains to guard in sufficient strength with troops, at least of the second and third lines, those communications which may be endangered. It will, therefore, not be easy for the attacking cavalry to carry out its mission. It will not only have to beat the enemy's cavalry which will certainly oppose it off the field, but it must also opearte independently on the flank and in rear of the enemy for days, and perhaps for weeks, entirely separated from its own army, and be able to capture

by swift attack any supply columns on the march or while parking as well as depots on the lines of communication. The cavalry must therefore be specially equipped for these duties, and have substantial fighting power, not only mounted, but above all dismounted. If its own strength is not sufficient, cyclists must be attached to it, because a *combination of cavalry with cyclists* will undoubtedly prove altogether extremely effective.

Fears have been expressed that enterprises against the enemy's communications might jeopardize the participation of cavalry in battle, and thus, of course, its participation in pursuit or covering retreat as well. The German cavalry training, too, warns, as it were, against these kinds of enterprises, because the cavalry might be diverted from what is still considered its paramount duty—namely, charging in battle. Views forming the basis of such regulations are in no way in harmony with the requirements of modern war, and completely misjudge the relative value of employing troops. I think, moreover, that the objection of raids diverting a well-led cavalry from its proper duties is perfectly untenable. If the raid is made in a decisive direction—that is to say, in a direction in which the commander-in-chief has decided to bring about the final issue; if the cavalry commander is kept constantly informed of the intentions of general headquarters and on the general situation, which seems feasible by wireless telegraphy or by some other means, he can easily move towards the enemy's army when the crisis is approaching and appear on the day of battle on the flanks and in rear of the adversary like Stuart at Gettysburg. The raid itself will lead him in the decisive direction.

He who wants to keep the cavalry always in close proximity to the flanks or even behind the battle front, will never derive any advantage from that arm under modern conditions; the cavalry will in that case, like in all recent wars, except the American Civil and South African Wars, stand idling about on the battlefield vainly waiting for its chances to come. Freedom and movement together with every kind of action are the life and soul of that arm, which is bound to decay if it does not succeed in adapting itself to modern requirements.

The cavalry in the North American War of Secession, approaching its tasks with an unbiased mind and not being hampered by tradition and routine, soon found the right way for great activity. The South African War, too, is very instructive in this respect. General Buller, who seems to have been still imbued with perfectly antiquated ideas about cavalry, always wanted to have that arm on his flanks to cover them, even when they were not at all threatened; he thus hampered all freedom of action of cavalry. The consequence was that his cavalry did nothing. General French, on the other hand, took the opposite stand. Extensive raids around the enemy against his flanks and rear was the principle of his action, and he would have done even more than he did in this direction, had not General Roberts repeatedly clipped his wings and held him tight, and had not the horses completely broken down. But the fundamental ideas of his cavalry leading were undoubtedly right, strategically as well as tactically. A warm adherent to cold steel and ever ready to charge, he still knew the full value and importance of the fire arm, and never hesitated to attack dismounted whenever it suited the case.

But it has not only been asserted that raids against the enemy's lines of communication will jeopardize the cavalry's participation in battle—it has been further asserted that these kinds of enterprises are not at all possible under modern conditions. The numerous lines of communication defence troops, and the extensive telegraphic system of European theaters of war, would make it always possible to concentrate superior forces against such cavalry and paralyze its action. I think this view is wrong.

Certainly, at the beginning of the war occasions for such enterprises will be rare. When the French army is concentrating on one line from the Belgian to the Swiss frontiers, we cannot dispatch a cavalry corps on the French lines of communication. But when, during the course of the war, different and separate army groups will be forming—as will always be the case—a suitably equipped cavalry will certainly be able to operate against the enemy's flanks and rear. If we study the campaign of 1870–71 from this point of view, we will not be

long before we arrive at this conviction. Of course, the troops employed on such a raid must not only have considerable fighting power, but must also be equipped with columns and trains capable of moving as rapidly as the troops themselves, making them, for some time at least, independent of the country, as well as of their own lines of communication. By destroying the enemy's railway and telegraph lines, as well as by spreading false intelligence, the raiding-corps must try to keep the enemy uncertain about its activity, and render his concentration for a counter offensive difficult. By demonstrative movements and rapid marches, sometimes carried out at night, the corps must deceive the enemy, escape his countermoves, and unexpectedly appear where the blow is least expected. It is of course, altogether presumed that these demands are met when cavalry is employed independently in this way, as well as in reconnaissance and pursuit. If these demands are satisfied, the raids will prove feasible too. Their importance is generally underrated. I do not only think them possible, but a downright necessity, as we shall see when we deal with the strategic operations; and I believe that raids will not only favorably influence the decisive issue in battle, but also lead the cavalry in a favorable direction on the battle field itself.

At the *final issue of battle* the cavalry divisions can also take their due share only if they are able to act with firearms in consideragle strength. There being no longer any question of cavalry co-operating constantly and closely with the other arms in the way it is still done with infantry and artillery, the cavalry, combined into large masses, must try to intervene from the flanks of the line of battle, and to become effective chiefly by the direction of this attack. This must be made against the flanks and rear of the enemy. Its mobility enables the cavalry to envelope the enemy's flanks and penetrate to his rear. It must not be afraid of abandoning, then, altogether its own lines of communication for the time being. It will always be able to regain them again. If it is opposed by the enemy's cavalry, that cavalry must be attacked without hesitation, beaten and pursued with portions of the force. This is presumed for all further enterprise. If it is successfully accomplished, then the road is open to great achievements. The

moment has now arrived where the cavalry can render invaluable services to the other arms, though not in direct co-operation, by drawing upon itself hostile troops and preventing them from intervening in the decisive issue. The victorious cavalry will first employ its artillery, machine guns, and, if need be, its carbines against the enemy's flanks, reserves, artillery and ammunition columns, and use every opportunity for acting offensively, mounted and dismounted, without, however, engaging in an obstinate fight against superior numbers. Its mobility enables it here again to get away and rapidly appear at another place. The cavalry must perpetually try to threaten and damage the enemy where he would feel it most, but must reserve its main fighting power for the moments of the crisis. At these moments it must not mind heavy losses if it can effectively contribute to gaining victory. It will resolutely attack and push back in good time the detachments the enemy has pushed forward for protecting his flanks and rear, and thus have the road clear when the final crisis arrives. It is then of great consequence that the cavalry should act effectively at all costs, and to intervene in the decisive combat itself by charging, if that can be done, otherwise by fire action.

The cavalry of *the defense* will first of all try to capture the assailant's artillery or to engage it, paying at the same time special attention to his heavy artillery. It will throw itself on the attacking infantry as soon as that is preparing for assault, which can be noticed by the increase of fire and by the resolute advance of reserves that may be available still. It depends on circumstances whether the cavalry makes use of the charge here or if dismounted action. It will also have to intervene sometimes in relief of its own infantry when that seems to grow weary. The cavalry of the *attack*, on the other hand, will not only act offensively against *those* portions of the hostile artillery which are firing on the attacking infantry, but do all that is in its power to prevent reserves from intervening in the fight, and, if possible, to bring to bear reverse fire on the defensive line itself. Occasions for charging infantry will be rarer for the cavalry of the attack than for the victorious cavalry of the defense.

Another particularly important task for cavalry is to delay hostile troops hurrying to the battlefield from behind or from the flanks, and to prevent their timely arrival on the battlefield. Mobility and carbine will here be of great use to cavalry too.

Of great importance is, lastly, the co-operation of cavalry *in pursuit*. Direct pursuit in front, as will naturally follow from the nature of the fight must, of course, be chiefly left to the infantry and artillery, armed as they are today, because the bullet reaches further and surer than the swiftest charge. But to pursue along the flanks of the enemy is the share of the cavalry, which must try to forestall the hostile march-columns, break into their flanks, and head them off, especialy at places where the ground is favorable for causing the delay to the flying enemy. The victory having been bought with streams of blood, the time has now come for reaping the harvest by inflicting on the retreating enemy losses twofold and threefold the amount we have suffered. Fire and cavalry charges where the demoralization of the enemy allows it—must do here equal damage.

The fact that victorious pursuit was never undertaken by cavalry in recent times, at least not in European theaters of war, has led people to think very often that the idea of cavalry pursuit is mere theory, and can never be turned into practice. I do not share this opinion, but think that this fact is simply due to the manner in which cavalry was employed, and to its defective equipment for operative purposes.

During the wars of Frederic's time, when the cavalry fought on the flanks of the infantry and could thus easily have initiated pursuit on the flanks of the enemy, it was tied to the army owing to the system of supply, and was not prepared for independent operations. After battle it was as much exhausted as a rule, as the other arms; and after victory was more concerned with rallying, reorganizing units, and feeding horses, than with pursuing. It rarely happened, therefore, that the enemy was vigorously pursued directly after battle.

In Napoleon's time the armies were organized into smaller units, corps and divisions, and the cavalry was partly apportioned to these units, and partly retained in reserve behind the

battle lines, so as to be able to co-operate with the other two arms along the whole front at the given moment. It was very difficult, as a rule, to start from here a vigorous pursuit along the flanks of the enemy, and it was the more difficult because the generals themselves never contemplated anything of the kind in most cases.

When, afterwards, improved firearms drove the cavalry more and more from the common field of action, nobody thought, as we have seen, of drawing the necessary conclusions from this fact, but everybody stuck to the old notion of battle-cavalry. The cavalry was held back until the final crisis, in positions which afterwards made pursuit as good as impossible; and when the moment arrived to use it, it could not be done, as a rule.

The idea of pursuing with cavalry hardly ever entered the mind of any leader, particularly of modern times; the cavalry, even when it was on the spot, was not launched. I personally met with such a case. At Weissenburg a numerous and fresh cavalry was standing on the Geisberg after its capture; everybody was gazing at the retreating enemy, until, in accordance with the praiseworthy customs of peace, the "Halt" was sounded and the order issued to move into bivouac. There was, therefore, not only no pursuit at all, but all touch with the enemy was completely lost as well. It is further known that at Wörth the Fourth Cavalry Division was even forbidden to move to the battlefield. It was not until evening, when all chances had been lost a long while ago, that it was ordered up, from a long distance in rear, to follow in pursuit; its performance next day was, of course, next to nil.

Of special interest in this respect is, again the employment of cavalry in the battle of St. Quentin. On the right of the battlefield were standing the Guard Rider Regiment and the Seventeenth and Eighteenth Uhlans. Behind the fighting line of the right were distributed, in addition, three squadrons of the Ninth Hussars, seven squadrons of the Third Reserve Cavalry Brigade, the Second Guard Uhlan Regiment, and three squadrons of the Guard Hussars—in all, twenty-nine squadrons. On the extreme left were Dohna's Cavalry Brigade, (Eighth Cuirassiers and Fourteenth Uhlans); behind the left wing were

distributed the Seventh Hussars and three squadrons each of the Fifth and Seventh Uhlans—therefore, again eighteen squadrons. All these units were more or less idle spectators of the action; they played something like the rôle of Mephistopheles' knights in the Imperial Battle ("Faust," Part II). They contributed absolutely nothing to success; for the occasion to charge, for which they were lying in wait, arose for a minute fraction only. For orderly and dispatch duties, as well as for direct reconnaissance on the flanks of the army, were actually needed, perhaps, ten to twelve squadrons. It would have been very easy, therefore, to concentrate on the right a cavalry division of twenty-four squadrons, and on the left a strong brigade of three regiments, and to furnish them with some guns.

If we imagine these horsemen to be equipped with modern firearms, and led in a modern spirit, they might have achieved the most brilliant success. During the battle they could have acted already against the flanks of the hostile army, and vigorously supported the infantry. Much more could have been achieved during the further progress of events. It may be left an open question whether it might not have been possible to delay, on the German left, Pauly's Brigade, marching up from Lempire to the battlefield. But it would have been feasible, without the shadow of a doubt, to cut the French army's line of retreat, and possibly force it to capitulate. For this object it was only necessary to occupy towards evening, when the issue of the battle was no longer doubtful, the crossings over the Canal of St. Quentin, which the French army was obliged to cross. The cavalry on the left would have had only a short ride to Belle Englise, and that on the right about twenty kilometers to Lehaucourt by Hombliéres and Remaucourt. On the way it could have occupied with a detachment the bridge of Lesdun; but the French army's main line of retreat could have been effectually barred on the line Belle Englise-Lehaucourt. Nobody, however, thought of employing these horsemen in this fashion—not even a Goeben, the cavalry itself, least of all. At that time it altogether failed to have a clear conception of what it really could do and ought to do. There was only a vague idea of cavalry being a kind of battle

reserve, which could be used only in case of dire necessity. Consequently nothing was done at all.

So long as such views prevail, so long as we always want to keep the cavalry directly in hand, with the object of lying in wait for impossible occasions for charging, instead of using its full fighting power on the flanks and rear of the enemy, and placing it thereby advantageously for pursuit, so long will there be no successful pursuit by cavalry. The cavalry divisions must prepare themselves for such, fully conscious that only then can valuable results be achieved. How can it be done? The tactical preparation and brilliant execution of pursuit after the Battle of Nashville, in December, 1864, in the American War of Secession, is an instructive example of that. It will pay us to study the deeds of this kind of cavalry.

In a future European war we must also carefully prepare for supplying the pursuing cavalry, if it is to push forward boldly. It will be a further advantage if we succeed in beating the opposing cavalry during the battle itself. Should that cavalry show the same natural tendency of acting against the flanks and rear of its enemy, the consequence would necessarily be a cavalry duel, which in all probability would be fought with cold steel, since here, as well as in reconnoitering, both cavalries must aim at deciding matters rapidly. But if one side feels too weak, it will probably have recourse to the firearm so as to at least prevent—if it cannot itself act offensively—the enemy from carrying out his intentions, and thus to bring about an equalization of forces, which gives it perhaps the chance again of resuming the offensive combat with cold steel at a later stage of the fight. In this case must the enemy's resistance be rapidly broken, too. The cavalry must, therefore, always advance early in the day and try to come close to quarters with the hostile cavalry, so as to have its hands free when matters are ripening on the battle field.

The necessity is shown here again of disposing of a numerous and powerful cavalry, able to do its best in a charge or in an attack dismounted, where it should be capable of employing sufficient rifles in action; such cavalry alone will be in a position to pursue vigorously; and on the other hand, such cavalry alone will be able to oppose energetic pursuit with some chances

of success. And it is this last duty which imposes a further task upon cavalry.

When the battle has been fought; when the army which has fought has lost all moral force for further resistance, and retreat has become unavoidable, it will be the duty of cavalry to guard the flanks of the army against any enveloping pursuit.

Whatever losses it may have suffered in the course of the day, whatever checks it may have experienced, at the moment when retreat begins it must re-appear on the battlefield and act offensively, if possible, on the flanks. Nothing will cause greater relief in such moments of moral trepidation than a renewed resolve to attack; nothing will be more apt to nip in the bud any hostile attempts to envelope. But when it is positively impossible to act offensively, the cavalry must make efforts to bar defensively those roads on which the enemy is pursuing parallel to our army. Especially when the pursuing cavalry is trying to use the night for its advance, we must oppose it on all roads and paths with the carbine, and construct hasty barricades, which are best made of wire. In this way a persevering cavalry, aided by cyclists here, too, may save the retreating army heavy loss and demoralization.

It is seen, therefore, that in almost all its spheres of action the importance of cavalry in war has very much increased with the growth of the armies, though its employment somewhat differs from that of former times. But *that* army is sure to derive a great advantage which is firmly resolved to discard antiquated views, and assigns to its properly equipped cavalry those duties which modern arms and military exigencies have imposed on it.

THE CONFEDERATE CAVALRY.*

By PERCY CROSS STANDING.

1. A Survivor.—Colonel John S. Mosby.†

THE octogenarian Colonel John S. Mosby is one of the rapidly-diminishing band of survivors among leading great fighters in the American Civil War. He was, in the judgment of numerous critics and authorities on the opposing side, the most formidable partisan leader of cavalry in the service of the Confederate States in that fratricidal struggle. Colonel Mosby has been so good as to furnish the writer with certain facts concerning his participation in the defence of the Southern Confederacy which have not previously been published. He is himself a writer of grace and charm, having added to the immense literature of the Civil War a fascinating volume entitled, 'With Stuart's Cavalry in the Gettysburg Campaign.' General J. E. B. Stuart was the brilliant and chivalrous commander of the mounted troops of the Confederate 'Army of Northern Virginia,' which met its Waterloo on the field of Gettysburg in 1863. It has been generally accepted that Gettysburg was lost on account of the absence of Stuart's cavalry from the Confederate Army, engaged in an elaborate raid upon the enemy's lines of communication. Colonel Mosby, however, characterises this as 'the Gettysburg legend,' and forcibly adds: 'As I brought the information that induced General Stuart to ask permission to cross the Potomac in rear of the enemy, and was chosen to command the advance of his column, I think I have a right, as an actor in the great tragedy, to be heard.' Stonewall Jackson had been killed a few weeks previously, and Lee's defeat by Meade at Gettysburg was decisive of the fate of the Southern cause.

John S. Mosby first entered the Civil War as a private soldier, but even in that humble capacity his merits were recog-

*From the *British Cavalry Journal* for April, 1912.

†Based on facts communicated to the officer by Colonel Mosby himself.

nized by the Confederate Generalissimo in an Order of the Day. Promotion speedily followed, and the sequel to one of his finest feats of daring, in conducting a raid far within the enemy's lines, was this communication from General Lee to Jefferson Davis, the Confederate President: Mr. President,—You will, I know, be gratified to learn by the enclosed dispatch that the appointment conferred a few days since on Captain Mosby was not unworthily bestowed. The point where he struck the enemy is north of Fairfax Courthouse, near the Potomac, and far within the lines of the enemy. I wish I could receive his appointment as Major, or some official notification of it, that I might announce it to him.—R. E. Lee, General.' The 'enclosed dispatch' was in these flattering terms: 'Captain,—Your telegram announcing your brilliant achievement near Chantilly was duly received and forwarded to General Lee. He exclaimed upon reading it: "Hurrah for Mosby! I wish I had a hundred like him." Heartily wishing you continued success, J. E. B. Stuart, Major-General Commanding.'

And what *was* the 'brilliant achievement' so brilliantly eulogized by Generals Lee and Stuart? I have thought it well to relate it in the veteran Mosby's own picturesque phraseology: 'It was on March 7, 1863 that I started from Aldie with twenty-nine men. It was pitch-dark before we got near the enemy's cavalry picket at Chantilly. Here a good point was won, for once inside the Union lines we would be mistaken for their own men. We passed along close by the camp-fires, but the sentinels took us for a scouting party of their own cavalry. I had no reputation to lose by failure, but much to gain by success. I remembered, too, the motto that Ixion in Heaven wrote in Minerva's album—"Adventures are to the adventurous." There were a few guards about, but they did not suspect us until they saw a pistol pionted at them. Of course, they surrendered. Some even refused to believe we were Confederates after we told them who we were. Joe Nelson rode up to me with a prisoner who said he belonged to the guard at General Stoughton's Headquarters, and with a party of five or six men I immediately went there. An upper window was raised and a voice called out, "Who is there?" The answer was, "We have a dispatch for General Stoughton." An officer (Lieutenant

Prentiss) came to the front door to get it. I caught hold of his shirt and whispered my name in his ear, and told him to lead me to the General's room. Resistance was useless, and he did so. A light was struck, and before us lay the sleeping general. He quickly raised up in bed and asked what this meant? I said, "General, get up—dress quick—you are a prisoner." "What!" exclaimed the indignant general. "My name is Mosby. Stuart's cavalry are in possession of the place, and Jackson holds Centerville." "Is Fitzhugh Lee here?" "Yes." "Then take me to him—we were classmates." "Very well, but dress quick." My motive in deceiving him as to the amount of our force was to deprive him of all hope of rescue. I turned over my prisoner to Stuart at Culpeper Court House. He was as much delighted by what I had done as I was, and published a General Order announcing it to the cavalry, in which he said it was a feat "unparalleled in the war."'

This incident evoked from President Lincoln one of the best of the numerous *mots* attributed to him. With General Stoughton had been captured a number of horses. When Mr. Lincoln heard the news he quaintly remarked, '*Well there won't be any difficulty in making another general, but how am I to replace those horses?*'

Passing over the campaigns of Chancellorsville and Gettysburg, we came to that of 1864, when the blood-drenched country was crying out for peace. Colonel Mosby and his dwindling band of guerilla horsemen ('My command never numbered more than two or three hundred men,' he says in a letter to the present writer) encountered the army of General Phil Sheridan, then operating in and direfully devastating the rich and beautiful Valley of the Shenandoah. As illustrating the drastic methods employed by anti-partisan operators in this war of retaliations and reprisals, I extract the following from General Grant's orders to Sheridan at Winchester, Va.: "If you can possibly spare a division of cavalry, send them through Loudoun County to destroy and carry off the crops, animals, negroes and all men under fifty years of age capable of bearing arms. *In this way you will get rid of many of Mosby's men.* All male citizens under fifty can fitly be held as prisoners of

war, not citizen prisoners. If not already soldiers, they will be made so directly the Rebel Army gets hold of them. Give the enemy no rest. Do all the damage to railroads and crops you can. Carry off stock of all descriptions, and negroes, so as to prevent further planting. If the war is to last another year we want the Shenandoah Valley to remain a barren waste."

It is a matter of familiar history that the ill-starred Valley *did* remain a barren waste, but meanwhile the stories of Mosby's adventurous daring are too numerous for quotation. Once he narrowly missed capturing General Grant himself, and on another occasion he came so close to Washington during one of his incursions—actually within sight of the Capitol—that he cut off a lock of his hair and asked a passer-by to give it to Mr. Lincoln with his compliments (but 'the exchange was never effected'). Wrote one of the Northern Generals: 'Mosby is the devil. There will be no peace till he is killed.' Eventually a price was set on his head, but he vigorously and successfully defended himself from the charge of having followed any but 'regular' methods of irregual warfare. And it is significant of General Lee's high opinion of him that after the capitulation of the Army of Northern Virginia—April, 1865—Colonel Mosby was placed in command of what remained the Force of the Confederacy until the final laying-down of arms, comporting him with dignity and fortitude in what must have been a trying position. Many years afterwards, during Mr. Roosevelt's time as President, the veteran lived to hold office in the United States Department of Justice at Washington.

In his Memoirs, General Phil Sheridan speaks of Mosby's whirl-wind operations in the Shenandoah Valley. He makes no complaint as to the Colonel's methods of conducting war-like operations, but, on the contrary, says, 'He was the most formidable partisan I met in the war'—and this although Sheridan had encountered both Forrest and the celebrated John H. Morgan. Thus commented President Grant after the sword had been finally sheathed: 'Since the close of the war I have come to know Colonel Mosby personally and somewhat intimately. He is a different man entirely from what I had supposed. He is slender, not tall, wiry, and looks as if he could

endure any amount of physical fatigue. He is able, and thoroughly honest and truthful. There were probably but few men in the South who could have commanded successfully a detachment in the rear of an opposing army, and so near the border of hostilities, as long as he did without losing his entire command.'

In his admirable biography of Stonewall Jackson, the late Colonel Henderson has said concerning the work of Mosby and his coadjutors: 'These operations are brilliant examples of the great strategical value of a cavalry which is perfectly independent of the foot-soldier, and which at the same time is in the highest degree mobile. Those who have never had to deal with communications of an army may be unable to realize the effect that may be, and often is, produced by such a force; but no one with the least practical experience of the responsibilities which devolve upon a Commander-in-Chief will venture to abate one jot from the enormous strategical value assigned to it by American soldiers. The horseman of the American Civil War is the model of the efficient cavalryman.'

II. JOHN MORGAN AND HIS 'ROUGH RIDERS.'

There are lessons innumerable for the cavalry officer of today in the meteoric career of General John H. Morgan, of the Confederate States service, who in the American Civil War performed feats of prodigious valor and romantic daring at the head of his corps of irregular horsemen known as 'Morgan's Rough Riders.' These troopers were undoubtedly the best mounted in the Confederate service, every one of their splendid mounts being a thoroughbred Kentucky 'blue grass' animal. And the men who bestrode them matched them, from Morgan's two 'brigadiers,' Colonel Basil Duke and Colonel Adam Johnson, to the humblest bugler in the command.

Morgan's first great feat of arms was performed in the summer of 1862. Entering the State of Kentucky at the head of nine hundred mounted men, he emerged at the close of this his first important 'raid' with no fewer than 2,000, all of them well equipped and finely mounted. In the whole operation he did not lose more than a hundered men, while in prisoners alone he took nearly 1,200. Nevertheless, after Morgan's

return to Tennessee, Kentucky reverted to the Federal power, and in June, 1863, General Morgan was urgently 'sent for' by General Bragg, commander-in-chief of the Confederate 'Army of the West.'

Bragg was confronted in force by the Federal 'Army of the Cumberland,' under Rosecrans. He wanted Morgan to divert attention, and, incidentally, to inflict damage, by means of a fresh foray—but he did *not* want the intrepid cavalryman to penetrate the enemy's lines farther than the city of Louisville, Kentucky. In fact, Bragg positively forbade a crossing of the Ohio River. Now this did not suit John Morgan at all. He told his second in command of his fixed determination to exceed orders by crossing the great river into Ohio, and on July 2d, the raiders started off—a perfectly equipped array of 2,460 horsemen, with two three-inch Parrott guns and two howitzers. They crossed the Cumberland River in fine style, brushing aside with heavy loss a determined attempt to dispute the ford. The enterprise had begun.

At dawn on July 3, 1863, the Rough Riders approached Columbia, stormed it in a wild charge, and made for the Green River. Meanwhile the federal authorities had been telegraphing all over the threatened States, and even as they marched in the night the raiders could hear the noise of the axes felling timber to obstruct their onward progress. It was now July 4 ('Independence Day)', and finding 400 infantry under Colonel Moore blocking his way at Green River, Morgan sent in to demand his 'unconditional surrender.' The colonel had the bad taste not merely to decline to accede to this cool proposition, but to put up so good a fight when Morgan's men proceeded to rush his stockade that ninety of the assailants were placed *hors de combat* inside a quarter of an hour. So the Confederate leader, not relishing this at all, left the enemy where he was and crossed the stream lower down, his next objective being the thriving town of Lebanon. This place was garrisoned by the Twentieth Kentucky Regiment; but Morgan, hearing that this force was by way of being strengthened from outside, attacked at once with the utmost fury. This time his men carried the place, but not before they had lost another fifty killed and wounded—making 140 casualties in two engagements. At Lebanon fell Morgan's brother Tom, a promising young lieutenant in the Second Kentucky. It will be perceived that Kentucky men were fighting on both sides, as, indeed they did throughout the war.

On sped the valiant and dreaded raiders, twenty-one out of every twenty-four hours in the saddle. 'Tapping the telegraph, *i. e.* taking down the telegraph wires in order to mislead the enemy by means of false messages, was a favorite diversion with Morgan. This he did with the utmost success until the Federal authorities became too wary for the ruse to be longer successful. Louisville was already in a panic, since, of course, it could not be known there that Morgan intended merely to threaten and not raid the city. 'So widespread was the effect of the raid of these 2,000 Rough Riders that in the States of Ohio and Indiana 120,000 militiamen took the field against them, in addition to the three brigades of United States cavalry.' On the morning of July 8, or less than six days from the start of his enterprise, Morgan reached the Ohio. He had done more than everything that duty and General Bragg commanded, for three states were utterly demoralized and dumbfounded at the boldness of his wonderful initiative. Not that 'magnificent' was the word applied to it by the Federal foe, for Morgan had to burn on order to render his raid a real devastation, and his men had to plunder in order to exist.

His followers proceeded to cross the Ohio at Brandenburg, with the timely assistance of two steamboats which they 'commandeered.' Suddenly, and while yet a portion of the raiders were on the Kentucky shore and others on the Indiana bank of the mighty river, a hostile gunboat appear in the offing and commmenced to shell the crossing. This was a critical moment indeed; but again John Morgan rose to the occasion. By skilled and masterly use of his four small guns he beat off the gunboat, and the crossing proceeded. Next he made for Indianapolis, the capital of Indiana; but he swerved aside so as to leave that city on his left. A running fight went on continuously now, for all the countryside was in an uproar. At a place called Corydon some sixteen of the raiders bit the dust in a vey pretty skirmish. Most of their 'blue grass' horses

were long since done for, and every available animal that had any pace in him was 'borrowed' and ridden to death.

He might even have captured the fine city of Cincinnati, for not only was it absolutely within his grasp and defenceless, but he could have utilized any number of ferry-steamers on the Ohio. Moreover, it certainly was not because his men as well as his horses were now falling out from sheer fatigue that the bold 'rebel' did *not* occupy the city. It was because, incredible though it may sound, he cherished as even bolder ambition yet!—nothing else than to press right on through Ohio and Pennsylvania, and join hands with the Confederate Generalissimo, R. E. Lee. But what would have been an absolutely unique feat of arms was arrested by the sombre news that reached Morgan at Piketon. The fortress of Vicksburg had fallen, the great battle of Gettysburg had been lost, and Lee was in full retreat. Obviously the only thing to do now was, if possible, to get back across the Ohio with the wreck of his jaded force.

This task proved, however, beyond even his superhuman powers of endurance. There was only one point at which they could recross the Ohio, and this was not reached until the night of July 18th. By that time it was held in force by the enemy, supported by several gunboats which shelled the crossing. It is extraordinary that, with his men starving and almost helpless to sit their horses, Morgan managed to hold out another week. At the ford 125 dead and 700 wounded prisoners were left, and when at last John Morgan gave up his sword to Colonel Way—whose own surrender he had, with characteristic audacity, demanded, but Way was not to be bluffed'—he had only 364 men with him. In twenty-four days the raiders had (*a*) ridden 1,000 miles through hostile country, (*b*) won several battles and skirmishes, (*c*) taken hundreds of prisoners, (*d*) destroyed *ten million* dollars' worth of Federal property.

Well may the late Colonel Henderson have remarked, in his splendid 'Life of Stonewall Jackson,' that 'the horseman of the Civil War is the model of the efficient cavalryman.'

There was an unkind suggestion at the North to hang or shoot Morgan for alleged dereliction of the rules of civilized war. But he escaped from prison and got back to the Confederate lines—to be shot dead while heroically leading a cavalry brigade at the battle of Knoxville on September 4, 1864. He had the supreme gift of leadership and of winning the confidence and love of those who followed him, *plus* his superlative powers as an exponent of the cavalry arm and its uses in irregular warfare.

THE SERVICE OF RECONNAISSANCE WITH SPECIAL REGARD TO DIVISIONAL CAVALRY.*

By Major v. CZERCHOW, Austrian Great General Staff.

COMPLAINTS over the shortcomings of cavalry in the reconnaissance service, especially in regard to the divisional cavalry, are by no means infrequent. It might be not uninteresting to seek for the cause thereof, because in doing this many a fault can be rectified. I have endeavored to combine the causes into groups, and in doing so may touch points which have, as a matter of fact, been touched on by other lecturers and writers.

1. Duty. The points and "*feelers*" of the service of reconnaissance are the patrols. While our regulations clearly define the duties of the security patrols, those of the reconnoitering patrols are defined only along general lines. Thus the expression: advance patrol, flank patrol, rear patrol carries in itself the tasks assigned to each, while the frequently occurring expression, "*information patrol*" is not so fortunate. In the sense of our regulations "*information patrol*" means a small body of troopers or infantrymen under a commander, sent out to seek the enemy or reconnoiter the terrain. The duty of the information patrol (expressed by its denomination), frequently supplemented only by designation of the road it is to take, is vague. The patrol can in most cases only perform part of its duties and if nothing more definite is required of it,

*Translated from *Kavalleristische Monatshefte* by M. S. E. Harry Bell, U. S. Army.

it will perform only that part of its task which appears to be most important to its commander. Whether this is agreeable to the intentions of the leader who sent out the patrol is doubtful and at most merely a matter of chance. The dilemma created is the more portentious because in most cases, the patrol being sent out very far, it will be found impossible to regulate its movements from the rear later on. I shall cite a few examples from which it will be apparent how many tasks may be given an information patrol, not mentioning those duties given a battle partol. These duties I will combine into three groups: (*a*) seek the enemy; (*b*) conduct when enemy if found; (*c*) reconnoitering the terrain.

(*a*) *To seek the enemy.* For instance, to ascertain whether or not the enemy is in B; whether or not in B, C, or D (of course only a small area); whether or not between A and B; if so, to correctly locate his position; whether the enemy has already reached or passed B; when he passes a definite point; whether from a definite point the enemy can be seen; whether to seek the enemy only in a stated direction; to reconnoiter behind an enemy ascertained to be in a certain locality; to ascertain if the enemy is being followed by additional parts of his army; to reconnoiter to where the enemy reported in B has marched; and in all of these duties ascertain the enemy's line of march, armament, strength, and at what time he reached a certain or definitely known locality, etc.

(*b*) *Conduct when enemy has been found.* The conduct of information patrols in this case is laid down in paragraph 241, of the regulations. Of course the instructions contained therein are only for general guidance, as everything depends on special conditions in which the different patrols encounter the enemy. Thus at the moment of encounter the first doubts will arise which will iufluence the conduct of the patrol. As a general rule the question then will be whether it will be more important to continue to observe the assigned line of march or the march objective or to keep an eye on the enemy. What is said next will explain this more clearly.

Shall report be made of having encountered a hostile patrol or not? Should the patrol, observing paragraph 227 of the

regulations, keep in touch with the patrol or shall it seek out the hostile main body, as laid down in paragraph 228? If the patrol received no orders covering this question, it will in the first place depend on the strength of the patrol whether or not risk detaching one of its members to carry a message back. To make a general principle of *not* reporting a hostile patrol is not to be recommended offhand. Should a hostile patrol appear from a direction in which no enemy was supposed to be, that fact may be an indication that stronger forces are following up that patrol. Of great importance also is the encountering of artillery patrols. In any case, sending back a report of having met a hostile patrol is easier than sending back any later reports, which latter will have to reckon with hostile interference. When the march direction of the two opposing main bodies are crossing each other it may happen that the encounter of hostile patrols are the only indications from which direction the enemy may be expected, as has been demonstrated in maneuvers. It is also difficult to form any judgment as to the size of the hostile force sending out a patrol by the size of the patrol encountered; in other words, do we encounter a patrol or a platoon? For instance, should our patrol work for a squadron, the encounter with twenty troopers (possibly three patrols combined) is important, as such a strong number, in an encounter between two opposing squadrons can produce a material effect by timely and (if not reported) surprising interference.

If, on the other hand, our force consists of a division of infantry and the hostile patrol comes from a direction where the enemy is known to be or advancing from, it would be bad policy to fritter away a trooper for sending a message.

In the case mentioned above (twenty troopers encountered, our strength one squadron) it would be dangerous, possibly, to keep touch with that patrol and not continue the march. A division of the patrol, one part keeping touch and the other part continuing the assigned line of march, may be the best solution of the question under these conditions.

The information patrol encounters a squadron: shall it keep in touch with it or continue its march? Only clear positive orders on the subject and proper strength, will enable the patrol commander to arrive at a correct decision. In all other

cases chance and fortune will govern whether or not he arrives at the correct decision. Should our own force consist of only one squadron or but little more, it might be best to keep in touch with the hostile squadron, for a bird in the hand is better than two in the bush. The same holds good when encountering a company of hostile infantry.

Take now the case of the patrol encountering a strong enemy on its line of march, the enemy debouching with one part of its column onto a different route of march. In this case the correct thing would be a division of the patrol; if its strength does not allow that, then only the partol commander's sagacity and training can decide which part of the enemy's column should be followed up, whether the stronger or weaker part. It may be of more importance to observe the weaker than the stronger part.

A similar case arises of the patrol encounters on its line of march an enemy who is debouching to another direction with his entire force. Should the patrol then proceed along its assigned line of march or should it follow the enemy? What should be done if this enemy is followed by another group retaining its original direction of march along the route the patrol has left?

Observation and discernment of security troops and main body is easy only in open terrain, difficult in covered terrain. If, in the desire to find the hostile main body, we attempt to break through the screen of the security detachments or to go around it, it may easily happen that we get too far to the rear and that it will be impossible, especially should the opponent consist of cavalry, to send word back to our troops in time to be of any use. For instance, if the patrol commander sees on the road a hostile regiment with one battery, formed into advance guard, support and an additional group, that group may be the enemy's main body or only a reserve for the advance guard. Should the patrol commander look for the main body following the formation he sees, it may easily happen, in a difficult terrain, that he looses touch entirely with the enemy. What he sees may also be a flank detachment.

(c) *Reconnoitering the terrain.* In this duty errors are committed in so far as the patrol receiving orders to simultaneously reconnoiter enemy and terrain, which can be done only seldom. On the other hand, there is no provision in our regualtions compelling the patrol commander to report valuable matters concerning the terrain not noted on the maps or which differ from what is shown on the map and which have come to his notice. This latter especially applies to roads, forests, and good points of overlooking the country.

If the enemy is weak and the terrain is open, two or more of the above cited duties may probably be solved by a small patrol, otherwise not.

If it is against regulations to send out an information patrol without giving it a definite task to perform, it is the more wrong to confound the expression "*information*" patrol with "*battle*" patrol. By combining a task of far reconnaissance with a merely hoped for but not definitely ordered battle reconnaissance the duties of the commander of the whole or of the group commander are transferred to the patrol commander who can, for that purpose, have neither the necessary force in men nor knowledge of the conditions in general. Most complaints of the shortcomings of the cavalry are based on bad battle reconnaissance, which matter is generallly overlooked in the orders issued by the commander of the whole.

It is not very easy to draw a sharp dividing line between far and near reconnaissance; this is not necessary, however, for they stand in close relation to each other, in so far as the tactical reconnaissance (battle reconnaissance) springs from and is based on the far reconnaissance. In any case regulations are clear enough in stating that we can not expect the information patrol to furnish the tactical reconnaissance, except in very rare cases. In addition, far more battle reconnaisance patrols than information patrols will be required.

Tasks to be given the battle reconnaissance would be for instance:

Definitely ascertain the grouping for march and strength of the enemy, especially how much he has of artillery; grouping of security detachments; time of arrival of leading elements of the hostile column at definite points in front of our troops; changes in the formation of the enemy's columns; debouchment of single units from the general march direction; number of

trains following the column; observation of the hostile cavalry; shape of battle formations; position of hostile artillery; breadth of hostile battle front; probable gaps in that front; position of the commander; of the reserves and their change of position; affairs of ammunition supply behind the hostile front, etc.

It is clear that when opposed to a comparatively equal enemy these tasks can be solved by a patrol only when the terrain is exceptionably favorable, while one information patrol can ascertain the coming up of a hostile column in any terrain.

In giving instructions to a battle patrol the space of ground in which it is expected to perform its duties should be definitely stated or some part of the enemy's force should be designated for observation. Divisional cavalry can solve the task of battle reconnaissance independently only when its commander is thoroughly instructed as to the entire situation and our intentions and when he still has sufficient patrols at his disposal. Both factors will be found present only in rare cases.

It should not be forgotten that according to paragraph 223, battle reconnaissance is to be carried out by infantry mainly and that not only in a terrain in which cavalry has difficulty in moving but also in absolutely open terrain, where the trooper would offer too prominent a target.

2. *Whose duty it is to send out a patrol.* According to our regulations this may be either the commander of the whole or the group commander, or the chief of staff. Even the patrol commander's immediate commanding officer can send out the patrol, provided the above mentioned officers have authorized him to do so—which is but seldom the case.

When sending out a patrol, the one sending it should be absolutely clear in his own mind what he wants the patrol to do. Practice shows how difficult this is; it takes much training to express a clear and definite will. It is my personal opinion that only he, who has gone through all the difficulties of a patrol commander in his subaltern days, is able to send out a patrol with definite and clear instructions; only such commanders can think themselves in the place of the patrol commander and judge what can be required of a patrol. As infantry officers have not many chances to practice the patrol service, and as the general duties of an infantry patrol are very different from those

of cavalry patrol, cavalry patrols should invariably be sent out by cavalry officers, not infantry officers. This especially applies to the far reconnaissance. For this purpose the cavalry commander should be thoroughly oriented by the commander of the whole as to the situation and intentions and should receive definite instructions as to what is desired—how he gains his ends to be left to his discretion, however.

3. *Strength of a patrol.* The strength of a patrol is not only dependent on how many reports are expected from it but also on the distance it is supposed to cover, as well as the task it has to perform. If the officer who sends out the patrol has carefully considered these points, he can accurately judge what strength the patrol ought to have. Very often he will have to reckon with the fact that the patrol will be divided before returning. I would insert here that it is advisable only in exceedingly favorable terrain to require the patrol to cover much ground when charged with reconnoitering a certain piece of country. As a rule a patrol rides along its road or somewheres where it can overlook that road; of course anything else it sees, falls into the sphere of its usefulness. But when the patrol can not overlook the space of country assigned it from its line of march it has to ride criss-cross, makes no headway and looses much time. It does not help the matter much to send single troopers to commanding heights to observe, for they can be sent only when the distance is very short.

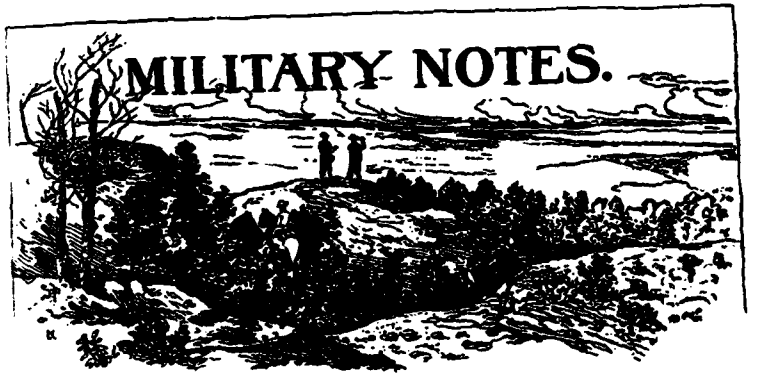
4. *Reports.* No attention is frequently paid to the important matter to whom, to where and when reports are to be sent. Message relay stations, lately inaugurated, better this condition somewhat. It is advisable to charge the patrol commander to send messages at certain times to certain places in addition to unexpected messages he may be forced to send. In case the commander of the whole diverges from the line of march, known to the patrol when leaving the command, all connection between patrol and command is lost. These two points deserve especial consideration.

5. *Limit of time for a patrol to stay out.* Very often the patrol is not instructed how long it has to stay out or how far it is to ride in the designated direction if it does not encounter the enemy. It is hardly practicable to send orders after a patrol

after it once has left the command, for it will be only by the merest chance if the patrol is overtaken. This neglect is bad, especially in our peace maneuvers. Patrols often travel very far away from the command, loose all, connection with it, and return in the evening exhausted and starved. In time of peace is advisable to either limit the distance the patrol is to cover or to give it definite instructions at what time it is to cease operations and return to camp.

6. *Screening duty.* This is the duty of the independent cavalry, of the divisional cavalry, and of all security detachments, but at no time the duty of information patrols. The latter may assist in screening by stopping a weaker hostile patrol or patrols, even attack them and make it difficult for them to send back reports. But to charge the information partol with screening is wrong, because reconnaissance and screening are diametrically opposed. Reconnaissance avoids battle; screening seeks it; screening is a stationary duty, confined to certain defined sectors, while reconnaissance must not be chained down by such commands. On the whole infantry will give better results in screening, when the terrain promises any results in screening at all. Forces utilized, therefore, are not lost, as they can be called back to participate in the battle when necessary.

7. *Training in Peace.* Reasons for failure of cavalry in the field exercises are in part to be found in the short distances separating the contending forces and partly in the limited space giving the partols in front of the infantry, and partly also in the rapid termination of the exercises. Thus the information patrols have not sufficient time at their disposal to properly observe and report; time also is lacking for the battle reconnaissance to supplement the far reconnaissance. These disadvantages can not be overcome entirely, no matter what corrective measures are taken. The distance between the contending forces has to be kept small; still patrols might be sent out early enough ahead of the infantry to catch the opponent very soon after he has broken camp or even while engaged in doing so.



LONG DISTANCE RIDES OF TWENTY-SEVEN CAVALRY PATROLS.

IN a previous report, an account was given in some detail of the ride of 186 miles in three days executed by officers patrols from twenty-seven different cavalry regiments. This year the performance was repeated with slight modifications. The distance covered was sixty-two miles a day for three days; on the fourth day thirty-one miles were covered in the morning and then at 2 P. M., the same day, all the patrols assembled at the Auteuil race track in the Bois de Boulogne and were reviewed by the President of the Republic accompanied by all the chief military personages of the government and the gentlemen most eminent in racing and horse raising circles.

Each patrol (six men) marched past in line with its officer in front, at a fast gallop, the total distance covered at this gallop being one and one-fourth miles. Four regiments from the German frontier, in garrison at Nancy, Sedan and Luneville, sent out not merely a patrol, but a whole platoon. In all twenty-seven regiments were represented, being all those stationed not over 200 miles from Paris.

I watched these patrols go by and it was altogether extr ordinary to see how fresh all the horses and men were. I could observe no trace of fatigue in either, though certainly must have been severely tried. Most of the horses were goi freely against the bit, and the officers mounts especially seem as keen and alert as if they had made only an ordinary mar

The last day's march of sixty-two miles was in a furio storm of snow, rain and wind, and the morning of the revie the thirty-one miles were made in a biting wind. The hors were beautifully groomed and the men as clean as if just o of barracks, yet no assistance had been furnished en rou Each patrol had cared for its own horses exactly as in ca paign, both on the trip and on the arrival in Paris.

In the evening a banquet was given the officers comman ing these patrols at which the Minister of War and the high mi tary and sporting dignitaries of France attended. There w no classification. Each officer received a small gold medal each man a bronze one, and each regiment a handsome bron statuette, in commendation of the ride.

These reconnaissances are without doubt of great value stimulating both officers and men to training and caring f their horses. All mounts were products of the regular remou of the Army and every man had to ride his own horse.

After a day of rest all these patrols were assembled at t Horse Show now in progress and the commemorative meda awarded.

The horses on arrival were all examined by a competen board. The newspapers state that the platoon of the Eigh Dragoons, which marched from Lunéville, shows remarkabl condition, not having a man or horse in any way injured o fatigued.

One patrol of the twenty-seven did not finish the ride fo some reason; three arrived with one member dropped on th road on account of his horse not being able to go on; all th others reached Paris complete, and it is asserted that all in juries, including sore backs, for the whole lot are of the mos insignificant nature.

T. B. M.

SABER vs. PISTOL—A SOLUTION.

THE strange swing of the pendulum of modern cavalry thought in Europe back to the lance, in place of the er, offers a solution, worthy of careful thought, to the eternal stion in our cavalry of saber vs. pistol.

All in the service know our two schools of thought on this ject, our two opinions, each absolutely fixed and sure of right. As these two opinions can never be reconciled, I ieve a solution would be welcomed by both.

Such a solution would seem to be indicated by the coming nge in the Russian cavalry, for within a year the front rank all the cavalry in the Empire will be armed with the lance well as the saber. This change will of course have a great ect on all the other cavalry of Europe, for the Russians have greatest numbers and are the only ones with experience in dern war; and since the Russo-Japanese War the greatest nges have been continually taking place in their army, this ng the latest.

The consensus of opinion here is that the lance is "par cellence" the arm for the shock action, and that its advan ages in this respect far outweigh its disadvantages in the ensuing melée; in other words the charge is either succesful or not, and for the successful side which smashes its opponent in the charge the ensuing melée will be more of a pursuing action. If the Russians can think this way, having, for the possible melée, only the saber in reserve, how much more should their opinion be considered by us who have the national weapon, the pistol, to fall back on in case of need. In fact the mere mention of our use of national weapon, in connection with the lance for the shock, produces the most favorable comment.

The possible objection that we might lose some of our mobility as mounted infantry or for dismounted action will hold no weight as can be seen by a study of the new Russian Cavalry Drill Regulations. In these, dismounted action is divided into two classes, "ordinary" and "in force;" the former

to be used under ordinary circumstances when the horses are apt to be moved, and the latter when there is no chance of the horses changing their places. In the first, two men out of three dismount and simply turn their lances over to the third man the horse holder, who passes his foot through the foot loop and his arm through the arm loop of the lances and swings all three out of the way behind his right shoulder; the same could be done as easily with four. In the second, when one man in six, or in the Cossacks one in twenty-five, is the horse holder, the lances are placed in line on the ground in front of the horses.

Besides being no handicap for dismounted action the use of the lance in place of the saber would solve two vexed questions; one the impediment of the scabbard to the use of the legs on the horse, the other, our lack of all skill in handling the saber. While the fault of the scabbard may be rectified in the new cavalry pack, I see no possible chance of our ever acquiring proficiency in the use of the saber, with our three years enlistment and the time necessarily spent in other work. Furthermore the use of the lance requires no particular skill, it being only necessary to hold it, point it and let the horse do the rest. While these two points may be of minor importance, yet they should enter into the final solution of the question.

It is true that the basis of this paper is the impending change in the Russian Army where the double rank is in use, yet I can see no possible objection to the use of the lance in single rank; and when the time comes, as it surely must, when we adopt the double line formation for mounted action, then with the lance for the shock and the pistol for the hand to hand work, we will be better armed than the European cavalry, and better armed than we now are. To prove this one need only ask the question, as true for 1, for 100, for 1,000 of for 10,000, given equal conditions which will win? The cavalry armed with the saber or pistol alone, that armed with the "saber and pistol," or with the "lance and saber," or that armed with the "lance and pistol? "One answer only would seem posible—the "lance and pistol "

Leaving aside all other questions, when the largest cavalry force in all Europe definitely adopts the lance as the most

suitable weapon for the mounted charge, and this with only the saber in reserve, I submit that the arming of the American Cavalry with the *Lance and the Pistol* is at least worthy of the most serious consideration.

N. K. AVERILL,
Captain U. S. Cavalry.

THE ARMY HORSE.

THE galloping horse, the thoroughbred, has been developed by careful breeding and by racing trials over a period of more than 150 years. The result is today a horse of quality and substance, superior in certain respects to any equine animal that has ever existed. The Arabs and other Eastern horses are the progenitors of the present thoroughbreds, but as the latter have been a continual improvement in speed and strength over the former, it would not now be wise to consider the Eastern horse as suitable sires for the class of horses required by the Army. Few people recognize the fact that the average cavalry horse must be up to carrying 267 pounds, assuming that the man alone weighs 150 pounds. All the light-weight horses, such as standard breds, saddle-breds, Morgans, and even coach horses, owe much to their superiority to the thoroughbred blood of their ancestors. The best type of the thoroughbreds would make superior cavalry horses, but to secure such in large quantities is not possible. For example, Ultimus of Mr. Keene is fifteen and three-quarter hands high and weighs 1,240 pounds. He is wonderfully muscled and is in all respects admirably adapted for weight carrying over rough ground for considerable distances at a fast pace. Among the colts at "Castleton," Lexington, Kentucky, were some that weighed 1,000 pounds at sixteen months of age. One of these superbly bred colts weighed 1,040 pounds at that age.

Mr. Thomas Hitchcock has two thoroughbred colts which at three years of age weighed 1,075 pounds and hunted the stiff Meadowbrook country, carrying considerable weight over

the high fences of that section. These same colts made an excellent showing at the Madison Square Garden in the five-foot jumping classes. They have fine loins, quarters and shoulders, also large bones and flat legs, and are extremely level-headed.

These cases are cited to show that the good thoroughbreds (not the weeds) have all the qualifications required for cavalry purposes—weight-carrying capacity, speed and endurance. The prepotency of that blood (above that of all other) and the peculiar fitness of the breed for army ends make such animals highly desirable for sire purposes. Mated with good sized farm mares the results should be fair good cavalry remounts, mated with the heaviest farm mares the results should be fair to good artillery remounts.

It is not intended to suggest that only by such means can we get desired results, but it is believed that there is no other way that would give such quick and consistent results. Good cavalry horses should have at least one-half of their blood strains from galloping stock (thoroughbreds.)

That is fundamental. For horse artillery the same requirement would be wise.

The following letter recently written by Major General Leonard Wood, Chief-of-Staff, tersely sets forth his views regarding this subject:

"Replying to your communication regarding the most suitable horse for cavalry purposes and the best way of breeding such animals, I beg to state that the primary consideration in the cavalry horse is the capacity to carry considerable weight over rough country for a long period and oftentimes at a rapid pace.

"The first condition eliminates a very light horse; the second and third require activity and endurance, and the fourth necessitates some speed. It is clear that certain types must be wholly eliminated and that suitable animals are to be found now in large numbers in very few localities in our country. This fact causes this department to take the keenest interest in the subject of breeding service horses. The temperament of these animals is hardly less important than either of the essential attributes suggested above.

"The principally recognized breeds of this country—standard, Morgan, Hackney, saddle—as is well known, are largely indebted to the thoroughbred ancestry for some of their most noteworthy traits. This fact helps to confirm the opinion that good, big graded mares, almost regardless of predominating strains, when crossed with selected thoroughbred stallions should produce fairly good cavalry horses. Probably the highest type of a charger would result from crossing a large thoroughbred mare, of excellent temperament and of big bone and muscle, with a stallion of similar qualifications. The Government cannot expect to secure such progeny as that would assure in sufficient numbers. The type of sire, however, crossed with good graded mares should give satisfactory mounts, and in general horses of much farm usefulness. If that policy of breeding were adopted by the farmers in the course of a few years the Government would be able to secure enough young horses of a proper type to satisfy its peace requirements.

"The following gives you a notion of what is now demanded of the service horse owned by officers.

"Suitable mount (charger) as published in General Orders No. 125, War Department, 1908, is hereby interpreted to mean a horse with a minimum height of fifteen hands, two inches, and with a miminum weight of 1,000 pounds. The horse should be of good appearance and of such breeding and substance as will enable him to carry his owner over humps of reasonable stiffness, including hurdles, ditches, fences and other obstacles simulating those which ordinarily would be met in going cross country.

"Thanking you for your patriotic interest in improving the horse of the country, I am, * * *"

In general, the ideal hunter, when properly schooled for military purposes should make a superior charger. Such a horse would fully satisfy all purely military requirements and would be good in the show-ring, in the hunting field, at steeple chasing, and possibly at flat racing. In a few words, the officer's charger should be of hunter type not less than half thoroughbred, 1,100 pounds or more in weight, about sixteen hands high (for officer of average height), and above all, level-headed.

Under our new system of remount depots in charge of skilled officers who have time to carefully select young horses, the service is getting better mounts than at any time within recent years; but the horses we are getting are still far from what they should be. If most of our valuable studs be shipped abroad it is clear that instead of an improvement there will be a retrogression during the coming years. That is a phase of the horse question which specially causes anxiety to the War Department.

The War Department is keenly interested in the proposition of the Agricultural Department to have the Congress enact a law whereby superior sires may be placed throughout the country in suitable districts. By this means farmers and breeders will be able to secure the services of high-grade animals at most reasonable rates, and there will be produced over the country young horses valuable for remounts. This policy is

simply carrying out what has been recognized in practically all old countries as a business measure and a necessity. Circulars 178 and 186 of the Department of Agriculture set forth the proposed plan. These circulars are respectively by A. D. Melvin and George M. Rommel, of the Bureau of Animal Industry, and contain information most valuable to all who are interested in this subject.

It is hardly worth while here to contrast the relative efficiency of two mounted commands of equal personnel but of unequal mounts. Other things being equal or nearly so, the cavalry that has the superior mounts (at the same time the conveyance and principle weapon) will easily win out.

If careful selections were made of both sires and dams of thoroughbred animals as regards substance, size, blood lines and temperament, leaving wholly aside the racing question, it is believed that within a reasonably few generations a horse highly useful for practically all cavalry ends would result. It would also be an animal of general utility purposes. This does not ignore the fact that the actual superiority of the thoroughbred has been effected by racing and consequently by eliminating those specimens that were weak from any whatever cause internal or external.

It is an unfortunate fact that the estimate of the thoroughbred by many of our officers has been made from the off-casts of the race track, the weeds that often had neither good conformation nor sufficient substance, and possibly were too nervous to support training.

Cavalry work of the future will more than ever require long, hard service, and at times fast going. Cold-blooded horses are not up to the latter. What is said of the cavalry horse, in a large measure, applies to that of the artillery.

There is a mistaken idea prevalent among officers of cavalry that the big fine hunter types in the hunting field and in the show-ring were primarily expensive animals. This as a rule is not the case, as may be ascertained by actual facts in connection with such horses as Taconite, David Gray, Overall, and many others that can be named.

If officers will purchase big, well formed, young horses, not less than half-bred, they have within their capacity the

making of $1,500 hunters and if they be specially well trained at the jumps they will have precisely such horses as now seem impossible to many of them.

It will be extremely unfortunate for the service if the officers sets as a standard for his charger the limitations of the average horse of the command he is leading or serving with. Following the principle embodied in that idea, the standard for officers' uniforms, equipment and mental preparation should be radically changed. An officer may, and will often be required to do some specially difficult and arduous piece of riding that would probably never be confided to enlisted men.

Above all, an officer's position and rank demand that his mount be larger and more sightly than that of an enlisted man. That accords with all other elements of his surroundings.

The following statement has been publicly expressed by the Chief of the Staff, who was voicing the views of the Secertary of War:

"Probably the highest type of a war horse would result from crossing a large thoroughbred of inherited excellent temperament and of big bone and muscle with a stallion of similar qualifications. Of course that is the ideal—the standard that would be set, but which, unfortunately, can probably rarely be reached. The crossing of the thoroughbred (either way) just described with any of the breeds just enumerated would also give us fine mounts far in advance of what we now secure."

In the Service Test for chargers at and near Bennings, May 18th, the horses that won first, second and third place were each carrying more than two hundred pounds and each about sixteen hands, one inch high and weighed between 1,125 and 1,200 pounds. The horse that came out first is practically a thoroughbred, the second horse is out of a saddle bred mare sired by a thoroughbred, and the third horse is about three-quarters thoroughbred.

In speaking of this test, the Secretary of War,* who was one of the patrol judges, stated:

"As a test, the ride was invaluable, and a notable success. As a race, it furnished good sport. The test brought out the best in horses and men. It was something of an experiment. Such a test has never been held here

*The Honorable Henry L. Stimson, Secretary of War, is an unusually bold rider to hounds.

before. Every horse was in condition to do better at the finish. ***The test developed that big, strong, and well-bred animals are the horses best suited for army use."***

The above represents the views and policy of the War Department.

By order of the Secretary of War,

LEONARD WOOD,
Major General, Chief of Staff.

A CAVALRY RESERVE.

1. Our militia cavalry forms but a small part of the organized militia of the country, and volunteer cavalry is slow to organize, equip and train after the outbreak of war.

Hence the necessity of listing in time of peace, persons capable with short training of acting as officers of volunteer cavalry during war.

2. The preparation of such lists under the Act of Congress approved January 21, 1903, (G. O. No. 57, W. D. 1909), has been a failure, because the examinations required are either too difficult or too academic for mature men or men of affairs; there is no certainty that persons listed will receive volunteer commissions at the outbreak of war; and in general, there is *no incentive* for the best horsemen of the country to seek to be enrolled in an eligible list of volunteer cavalry officers.

3. This may perhaps be remedied, by *issuing commissions* in time of peace to properly qualified persons as officers in the Cavalry Reserve Corps; accepting well-know horsemen who are graduates of recognized universities and colleges with a physical examination only; and prescribing for those horsemen who lack such diplomas, the examinations required by General Orders Number 57, War Department, 1909.

4. The main incentive will be the issuing of commissions, and it is believed that, considering the favorable results following the organization of a Medical Reserve Corps with its hundreds of distinguished members on active duty, it will embrace men of education and standing among the hunt-clubs, polo-clubs, riding-clubs and individual horsemen in general throughout the country.

5. Such a body of horsemen, though lacking technical knowledge of military drill and tactics, will insure for the cavalry a body of horsemen who in time of peace will be a powerful factor towards improving and building up its organization; and in war, will give a list of men of affairs, accustomed to handling men, who will be available as officers of volunteer cavalry.

6. Legislation is needed which will bring about the desired results, if practicable without extra cost to the government.

As *horsemanship* is the controlling factor, such legislation, need not and should not apply to the other arms of the mobile army, as horsemanship is of small importance to the infantry; and to the field artillery, technical knowledge of the gun far overshadows the importance of horsemanship.

The outline of a resolution for the action of Congress is appended.

Based on this Resolution, regulations should be formulated prescribing the qualifications necessary for appointment in the *Cavalry Reserve Corps*, one of which it is believed should be ownership of a charger coming up to War Department specifications.

C. D. RHODES,
Captain Fifteenth Cavalry.

AN ACT TO INCREASE THE EFFICIENCY OF THE CAVALRY OF THE UNITED STATES ARMY.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

That from and after the approval of this act, the cavalry of the United States Army shall consist of the regiments now authorized by law, and a Cavalry Reserve Corps as hereinafter provided.

SEC. 2. That for the purpose of securing a reserve corps of cavalry officers available for military service in the regular or volunteer forces, the President of the United States is authorized to issue commissions as first or second lieutenants to qualified horsemen, citizens of the United States, who are graduates of recognized universities or colleges and who shall be found physically and morally qualified for appointment; or who, lacking diplomas from such recognized universities or colleges, shall, after examination prescribed by the Secretary of War, be found physically, morally and mentally qualified to hold such commissions, the persons so commissioned to constitute and be known as the Cavalry Reserve Corps.

The commissions so given shall confer the holders all the authority, rights and privileges of commissioned officers of the like grade in the cavalry of the United States Army except promotion, but only when called into active duty as hereinafter provided, and during the period of such active duty.

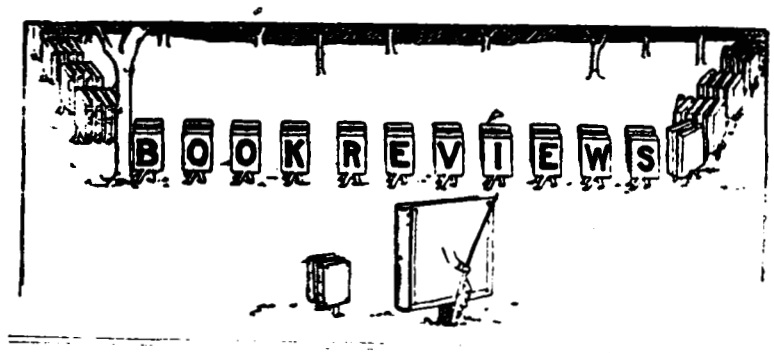
Officers of the Cavalry Reserve Corps shall have rank in said corps according to date of their commissions therein, and when employed on active duty as hereinafter provided, shall rank next below all other officers of like grade in the United States Army.

SEC. 3. That in emergencies the Secretary of War may order officers of the Cavalry Reserve Corps to active duty in the service of the United States in such numbers as the public interests may require, and may relieve them from such duty when their services are no longer necessary; *Provided*, That nothing in this Act shall be construed as authorizing as officer of the Cavalry Reserve Corps to be ordered upon active duty as herein provided, who is unwilling to accept such service, nor to prohibit an officer of the Cavalry Reserve Corps designated for active duty from service with the militia or with the volunteer troops of the United States, or in the services of the United States in any other capacity; *And provided further*, That any officer of the Cavalry Reserve Corps who is subject to call and who shall be ordered upon active duty as herein provided, and who shall be unwilling and refuse to accept such service, shall forfeit his commission; *And provided further*, That the President is authorized to honorably discharge from the Cavalry Reserve Corps any officer thereof whose services are no longer required.

SEC. 4. That officers of the Cavalry Reserve Corps when called upon active duty in the service of the United States as herein provided, shall be subject to the laws, regulations and orders for the government of the Regular Army, and during the period of such service shall be entitled to the pay and allowances of like grades in the Regular Cavalry, with increase for length of service now allowed by law, said increase to be computed only for time of active duty: *Provided*, That no officer of the Cavalry Reserve Corps shall be entitled to retirement or retirement pay, nor shall be entitled to pension, except for physical disability incurred in line of duty while on active duty.

SEC. 5. That in the organization of United States volunteer cavalry, officers of the Cavalry Reserve Corps shall receive preference in appointments to all grades including captain, first lieutenant and second lieutenant, under such regulations as may be prescribed by the Secretary of War.

SEC. 6. That all Acts and parts of Acts in conflict with the provisions of this Act are hereby revoked.



Protection in War:*

This work covers what is commonly called in this country "The Service of Security," but the author handles it on a large scale. The subject is viewed rather from the point of view of an army commander than of a detachment commander.

The author's views in regard to the handling of cavalry are of interest to cavalry officers. He describes in detail the manner in which the Germans contemplate using masses of independent cavalry in front of their armies. He calls this "the independent cavalry doctrine" and mentions General Von Bernhardi as its chief exponent. In regard to it he says (p. 82): "The doctrine is essentially German in its origin and its application to that army is possibly justified by the numerical superiority and high efficiency of its cavalry. It cannot, however, be accepted blindly by other armies, which do not possess these advantages." He comments on the cavalry duel which would probably result from an application of the German ideas, as follows: "The superior cavalry will gain much for its side by its victory. If we are sure of gaining the day in such a separate application of force, and the enemy is weak enough to give us the opportunity, we would be foolish not to

*PROTECTION IN WAR. By Major General F. J. AYLMER, V. C., C. B. Hugh Rees, London.

avail ourselves of it. * * * * * If the chances in a preliminary cavalry duel are not very distinctly in our favor, we make a mistake in entrusting to our cavalry a part of the whole result which is out of proportion to the importance of the separate force engaged. The defeat of our cavalry does not only mean the loss of so many men and horses, but it lowers the morale of the command in every grade, and decreases the value of our forces for subsequent use.

There is an evident anxiety on this point in the minds of many advocates of the independent cavalry doctrine, and expedients are suggested for minimizing the risks involved. Perhaps this is particularly noticeable in the case of the French, who may have to contend against a cavalry which is at any rate superior in numbers. Cyclist detachments, bodies of infantry carried in wagons or motors, or made extremely mobile by lightening the loads carried on the men's backs, and the celebrated *detachments mixtes* of the latest French school, are all suggested as methods of stiffening the cavalry mass."

There is also noticeable in the pages of General Aylmer's work a painful consciousness of the British inferiority in cavalry and he too has an expedient to offer. He recommends a "General Advanced Guard" composed of a division or corps of infantry with its complement of artillery and with all the cavalry that can be spared after providing for the security of the main body of the army. This "General Advanced Guard" is to operate from one to three or four days marches in front of the army. The cavalry commander is to be always subordinate to the commander of the "General Advanced Guard." The only distinction apparent between this "General Advanced Guard" and the ordinary conception of a body of independent cavalry with an infantry support is that it is given less latitude. It is made strong enough and kept close enough to the main body of the army to prevent its being destroyed before it can be supported. An action in which it becomes engaged is to be merged in the general conflict between the opposing armies.

The "General Advanced Guard" is to constitute a "Reconnaissance in Force," to ascertain the enemy's strength and dispositions and to gain the time and space necessary to enable the main body of the army to maneuver.

General Aylmer mentions the facts that the Japanese armies, although deficient in cavalry, did not make use of such a "General Advanced Guard" as he proposes; also that there is danger that the "General Advanced Guard" may be caught between two strong hostile columns and crushed. His replies to these objedtions are interesting if not convincing. The disadvantage of a "General Advanced Guard" of all arms appears to be that it would be lacking in mobility; it could reconnoiter only in one direction and it could not decline combat when in the presence of superior hostile forces as a body of independent cavalry could do.

Tripoli.* This is a small book, seven and one-half by five inches—of 118 pages which gives narratives of the principal engagements of the Italian-Turkish War in Tropoli from October 23, 1911, to June 15, 1912.

Accounts are given of twelve engagements, some of which were mere skirmishes, generally being attacks of the outposts of Tripoli by the Turks and Arabs, with few losses on either side, while others were more serious as to losses but none of them rose to the dignity of a battle either as regards the numbers engaged or the casualties. However, there were several desperate fights and in some instances there were hand-to-hand conflicts where the bayonet, saber, clubbed muskets, hand grenades and even stones were used with good effect.

Inasmuch as this is the first, so-called, war in which several modern inventions, such as the æroplane, searchlights, wireless telegraphy, motor cars and dirigibles have been used in the field in war, it is but natural to presume that much attention would be given them in a work of this kind. However, the use of the æroplane is noted only four times and then but briefly; the employment of searchlights is mentioned six times and more in detail; while mention is made of the dirigibles but twice.

*"TRIPOLI." A narrative of the principal engagements of the Italian-Turkish War, during the period from October 23, 1911, to June 15, 1912. By Lieutenatnt Colonel G. Ramaciotti, Commanding First Battalion, Second Australian Infantry. Hugh Rees, Ltd. London. Price, 2 s. 6 d.

On one of these occasions it is said that: "In this phase of the action the dirigible P 3 dropped bombs on the retiring Turks." Nothing is said as to the effect of the dropping of these bombs. It is reported that motor cars were used satisfactorily for delivering ammunition and supplies and in removing the wounded.

It is stated in this book that the Italian officers were armed with rifles and that "*War Dogs*" were employed on the line of outposts or outside of the line of entanglements of some of the out-works.

On War of To-day.* A new book by von Bernhardi. This is gratifying news to everyone interested in the cavalry service. But although his latest book contains a great deal of interesting matter relative to cavalry, it is not exclusively a treatise on cavalry. It is, as might be inferred from the name, written from the point of view of the immortal Clausewitz. The author points out that Clausewitz never completed the great work which he undertook. It may be doubted if it can ever be really completed so long as war continues to present changes in its external forms. While war remains the same in its essential characteristics, the methods of carrying it on differ from one epoch to another on account of changes of conditions which von Bernhardi discusses in a lucid and interesting way in this work. It is a worthy continuation of the work of Clausewitz and contains moreover a singularly frank description of European international politics and an able forecast of the changes which must be made even in the methods now contemplated of marching, maneuvering and supplying the immense armies which European nations will put in the field in the event of war.

The author claims that the importance and value of cavalry have increased with recent changes of conditions, but he believes that its chief rôle is in its independent employment for

*"ON WAR OF TO-DAY." By General Frederich von Bernhardi, General of Cavalry, Retired. Authorized translation by Karl von Donat. Vol. I. Principles and Elements of Modern War. Volume II to follow this fall. Hugh Rees, Ltd. London. Price, nine shillings net per volume.

the purpose of gaining strategic advantages, rather than in its employment on the battle-field. The cavalry should be employed on the flank or in rear of the hostile army and should come up in time for battle as did Stuart at Gettysburg. The disadvantages of loss of communication with the cavalry which were felt by Lee in that campaign will no longer exist because the cavalry will be able to maintain its communication with its own army by means of motor cyclists and wireless telegraphy.

An idea of the contents of the book may be gained from the chapter headings. They are: The Secret of Modern War; Constancy in War; Experience of War and Speculation; Armies of Masses, Forces and Numbers; The Modern Arms and Means of Defence; Technical Appliances in Warfare; The Importance of Cavalry; March Technics; Supplies and Lines of Communication; Methodics in moving Armies; Self-reliance; Method and Command: The Importance of Permanent Defences; The Means of Naval Warfare.

The translation is by Karl von Donat and is literal rather than liberal, but is clear and precise.

Editor's Table.

WHAT HORSE FOR THE CAVALRY?

Regarding the book under the above title, Major F. A Boutelle, U. S. Army, Retired, writes as follows:

"Mr. Spencer Borden's book, 'What Horse For the Cavalry,' is believed by the writer to be the most valuable con-

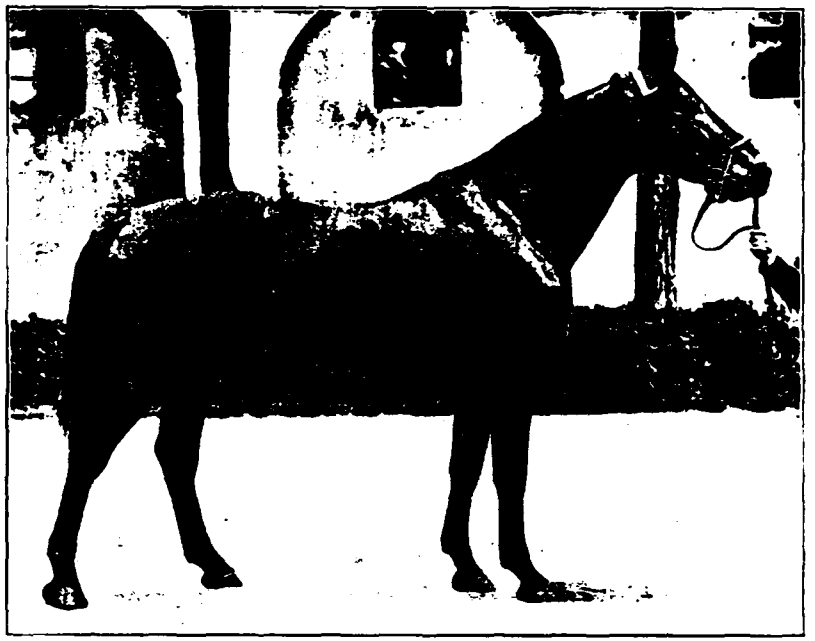
DONALD.
Morgan (America). First prize Vermont State Fair, 1910.

tribution to the cavalry horse literature of the day and perhaps of any day.

"Mr. Borden has had unusual opportunities and has seen the best horses for service of the world, with what would appear

to be the eyes of a seasoned campaigner. If he has not seen service, the army has missed a very valuable officer. It is hoped that he and others will continue the good work until the legs are written off the 'so-called' suitable horse for cavalry service which we have so often seen described."

Before receiving the above from Major Boutelle, permission had been granted for the reproduction in the CAVALRY



A Typical Nonius Stallion at Mezohegyes.

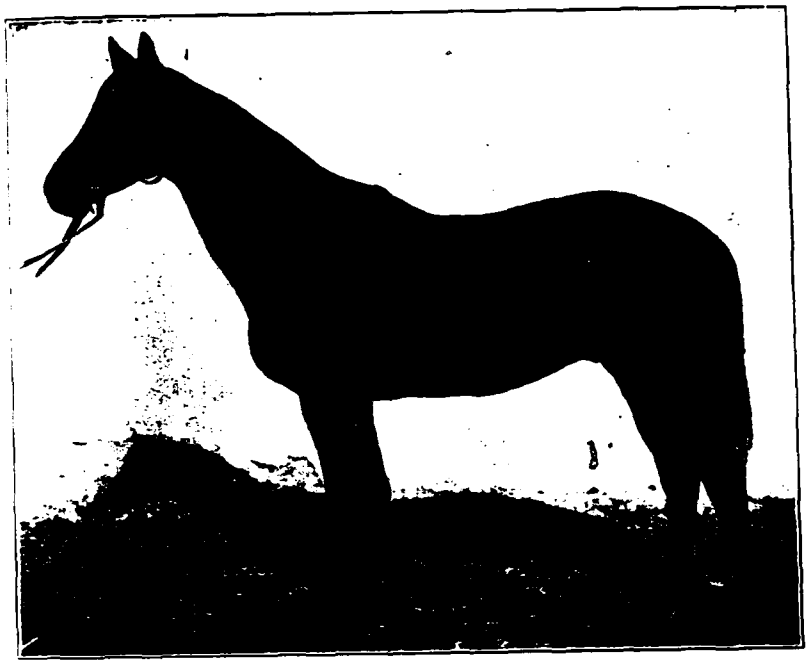
JOURNAL a few of the many illustrations contained in his book and to publish extracts from his work.

In the preface he says: "They tell us that the United States possesses more horses than any country in the world excepting Russia. The figures given are 24,016,024 horses in 1910, as against 21,625,800 in 1900, an increase of eleven and one-half per cent.

"Mr. Rommel, Chief of the Animal Industry Division of the U. S. Department of Agriculture, writing for the JOURNAL

of the U. S. Cavalry Association for November, 1911, analyses these census figures in a manner to prove that these great number of horses do not represent animals available for the Army."

He then goes to show that not one in seventy-five of the licensed stallions in the States mentioned could, by any stretch of the imagination, be considered a probable sire of a cavalry horse.



SLIEVE CALLION.
Of the Kisber Stud of Hungary.

He also says in the preface: "A horse cannot be bred and reared and trained in less than six years, one while the mare carries him, three while he grows to an age where his training can begin and two for him to mature and complete his education. We cannot go 'shopping' for horses because we have plenty of money.

"Now, a supply of horses cannot be met by any off hand

act of the will. We cannot say 'Let there be horses!' and horses appear.

"It is time Americans were wakened to the true conditions. With facilities and resources at our command this country should never have to seek a horse supply for its army outside its own borders, as would be necessary in case of war within the next ten years."

YOUNG O-BEYAN.
A pure Arab of the Hungarian Government Stud at Babolna.

He then goes on to state that nearly all European nations have some scheme of government encouragement for horse breeding to insure a good supply of horses for the use of their armies. He also describes the several great studs that he visited in Europe, he having been given unusual facilities for inspecting them on account of the letters he carried from the high officials of this country.

Speaking of the custom of docking the tails of the horses, after having extolled Kaiser Wilhelm II of Germany for his good qualities, he says:

"Nevertheless, Kaiser Wilhelm the II has allowed himself—also his father, Kaiser Frederick—to be mounted on a horse with a docked tail, on the bronze statue at the end of the great bridge over the Rhine at Cologne. This is shocking as a matter of taste and probably unprecedented in all plastic art. The writer knows of no other example.

"Who would ever think of Napoleon, or Frederick the Great, or Alexander, or Wellington, or George Washington, riding a horse with the tail of a rabbit. In our own day, try to picture Lord Roberts or Kitchener on a bob-tailed horse. However, *chacun a son gout!*

"But one cannot fail to be reminded of our own General Phil Sheridan, one of the greatest cavalrymen of all history. It is said that as he lay dying at his home in Washington, his brother came to see him one morning. Colonel Sheridan asked if there was anything he could do for the General. He replied: 'Yes, Mike, make me a promise.' 'Whatever you ask, Phil, I will try and do as you wish.' 'Well, Mike' and the weary eyes wandered out of the window and rested upon a bronze equestrain statue outside, 'Mike! When I am dead, if they put me on a horse, for God's sake see that it is a better one than that."

PROMOTION AND ORGANIZATION.

The attention of our members is particularly called to the valuable contribution in this number of the JOURNAL by Captain Moseley on the subject of "The Relation of Promotion to Organization." Coming, as it does, from the cavalry representative on the Committee of the General Staff that has had in charge, for a year or more, of the preparation of a scheme of organization for our mobile army, it should receive the earnest attention of our cavalry officers.

Regarding the paragraph which Captain Moseley quotes from the July number of this JOURNAL, and which he criticises as giving a wrong impression, the Editor alone is responsible for the language used, and in fact, for the whole editorial from which this extract is taken. However, a re-reading of the paragraph in question, in connection with the entire editorial, will show, it is believed, that the article is along the lines of previous ones on the question of "One List for Promotion," and which have had the hearty approval of the Executive Council of the Cavalry Association as well as of all cavalry officers with whom the matter has been discussed. It is possible that the objectionable part of the paragraph quoted is contained in the sentence which reads as follows: "Rumor has it that this long delay in submitting this report has been caused by a failure to reach an agreement as to how the resulting promotion that would follow the reorganization should be apportioned." Judging from Captain Moseley's article this rumor was not correct but at the same time that opinion had been expressed by several cavalry officers on many occasions.

However, to discuss the report of the committee the leading portions of which, as far as relates to the subject of promotion, have been published in the service periodicals, it is believed that the conclusions arrived at and recommended for the equalizing of promotion, whenever an increase or decrease is made in any arm of the mobile army, is correct and in accordance with the principle enunciated in the May, 1912, number of the CAVALRY JOURNAL, which is as follows:

"The acceptance of the principle that the increase or decrease of the number of officers in any arm shall be borne by all the arms, in all grades, share and share alike, officers thus transferred to another branch to rank in the branch to which transferred as they would have ranked therein had they been originally commissioned in the branch to which transferred."

At the same time it would be of interest to know how this committee arrived at the conclusion that "the practical application of the straight one list principle was found to present difficulties impossible to overcome with justice to all concerned." What are these difficulties and how can the acceptance of this principle do any injustice to any officer?

However, in the opinion of your Editor, this report does not go to the root of the evil of the inequalities of promotion in the army, although it may possibly cure some of the defects of the present system of promotion as regards the mobile army. It will still allow one officer who has through luck gained a grade over a brother officer to take precedence over him although the former may be his junior by years. There are many officers now in the service who are still captains while their classmates are majors and this rule of promotion will not prevent this happening again in the future although probably not to so great an extent as under the old system.

On the whole, this plan is a step in the right direction but it fails by a long way in curing the evils of inequalities of promotion as illustrated in the comments on the proposed rules for relative rank and promotion, page 244.

Publisher's Notice.

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JOURNAL OF THE U. S. CAVALRY ASSOCIATION

September, 1912.

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NOTICE.—A new appendix, containing thirteen original problems (six of them on the Gettysburg Map), has been added to Major Sayre's Map Maneuvers and Tactical Rides. All future issues of this book will have this appendix. The price ($1.50) will not be changed.

U. S. CAVALRY ASSOCIATION, Fort Leavenworth, Kansas.

VOL. XXIII. SEPTEMBER, 1912. No. 92.

JOURNAL

OF THE

United States Cavalry

ASSOCIATION.

PUBLISHED BI-MONTHLY
BY THE UNITED STATES CAVALRY ASSOCIATION,
FORT LEAVENWORTH, KANSAS.

$2.50 per Annum. 50 Cents a Copy.

Foreign Postage, 50c per year.

LIEUTENANT COLONEL EZRA B. FULLER, U. S. ARMY, RETIRED,
EDITOR.

Entered as second-class matter, January 21, 1911, at the Post Office at Fort Leavenworth, Kansas, under the Act of March 3, 1879.

KETCHESON PRINTING COMPANY
LEAVENWORTH, KANSAS.

THE United States Cavalry Association.

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JOURNAL

OF THE

United States Cavalry Association.

VOL. XXIII. SEPTEMBER, 1912. No. 92.

THE TRUTH ABOUT CHICKAMAUGA.*

BY CAPTAIN EDWARD L. ANDERSON,† FIFTY-SECOND OHIO VOLUNTEER INFANTRY.

I HAVE had the honor of being invited to address you, this evening, upon a work of great significance; one which will give surprise to those who derive their ideas of the great Battle of Chickamauga from tradition and unsupported statements, but which will be recognized by those who were participants in the engagement as containing much of, if not the whole truth regarding the events of September 19th and 20th ,1863, when the Army of the Cumberland and the Confederates under Bragg measured swords in one of the fiercest contests of modern times.

The author of this work, a son of the late Brigadier General Gracie, Conferedate Army, assures us that he undertook the self-imposed task, without much knowledge of his subject and without prejudice, because in his visits to the battlefield, in

*A paper read before the Ohio Commandery of the Military Order of the Loyal Legion of the United States by Captain Anderson who served as Adjutant General of McCook's Brigade during this campaign. As will be seen, it is a review of a late book by Archibald Gracie which has recently appeared under this same title.

†Author of "Modern Horsemanship," "Curb, Snaffle and Spur," "Horses and Riding," etc., etc.

memory of his gallant father, he found so many contradictory statements from misinformed reporters, and such conflicting witnesses in the monuments, that he determined to see how near he could bring into harmony the differing credible representations, by seeking information on every point from both the Federal and Confederate side.

"The tribunal to whose decision the truth * * * is referred, after exhausted and impartial study, is the Official Reports, which constitute the Court of Last Resort, cited in the text herewith, and supplemented by reference to those authoritative sources in 'Notes' following thereafter, which will be found of special interest." (page viii.)

The greater part of the book is given up to discussing the four or five last hours of the engagement, so that in a review of the work in question, we must pass over the battles of the 19th of September and the early part of the 20th, with an account of these events in a brief manner, detailed enough only to make as clear as possible the movements and their results from noon of the second day.

In the hurly-burly of the series of fights which then took place, often by mere groups of our separated and divided commands, where there was much borrowing of squads, regiments and brigades as various points required support at moments of supreme importance, the author of "The Truth About Chicamauga" met with very great difficulties. Each officer naturally and loyally made the best possible record for his troops in the last stand before the withdrawal from the field, which reports Colonel Gracie assumes were generally intended to be fair and truthful, except in the instances where he pillories the offenders in his criticisms.

One, and not the least of these difficulties in reconciling the conflicting statements into some kind of accord, is the fact that upon nearly every important affair the given time differs, often, by hours.

"I have found another check upon the accuracy of my work. I have followed out the movements of each corps; then the movements of each division of each and every corps; and finally, the movements of every regiment, battalion, and battery of each brigade in every division; and, where the units of organization

have dovetailed perfectly, I have obtained, I think, a mathematical demonstration in many instances of the accuracy of the work. After one has accomplished the chimerical task which I have suggested, he may claim to know something about the truth of this most wonderful battle.

"In consequence of this work of mine, I claim respect for the accuracy of the premises on which my conclusions are based, for the truth of which the Official Reports are responsible, and with which these conclusions square." (page 35.)

To those who thoughtlessly ask; "Why should not the story of the battle, now more or less generally accepted, be permitted to rest, or the whole affair allowed to pass into oblivion?" it should be explained that to juggle with or to suppress historical facts is a crime that has a much wider influence for evil than is thought to prevail by such weaklings.

The first chapter of Gracie's book is given to the "Elimination of False History," and here the author undertakes to prove by the Official Reports that Chickamauga was not fought by Rosecrans for the possession or the holding of the City of Chattanooga, but for the destruction of Bragg's troops and the control of a large region occupied by the Confederates. Such objects were within the rights of an invading army; but as Chattanooga was peacefully taken ten days before September 19th, and was in a favorable position for defense, as was afterwards proved, it was absurd for Rosecrans to assert that the battle was fought for its permanent possession, a theory that came to his mind later when, after admitting defeat, he claimed that the object of his campaign was attained, and that Chickamauga was a great Federal Victory.

The fact is that Rosecrans by a series of masterly movements had forced the Confederates to withdraw from Chattanooga, and that after this was accomplished he lost his skill, and deceived by Bragg's clever stratagems believed that the Confederate forces were flying before him, a disorganized rabble seeking safety in flight.

Rosecrans' eyes were opened on September 12th, when he was confident that Bragg's army was concentrated about Lafayette, an easy march from the captured city. Then he hurriedly

brought his weary and scattered corps into the unknown recesses of a tangled forest to face a brave and prepared foe.

"I doubt if there can be found recorded anywhere in the history of a great battle, an instance where any army was more completely deceived than was the Federal army by the stratagems employed by General Bragg during the four days ending September 12th." (Gracie page 20.)

For four days the opportunity was given Bragg of attacking one of Rosecrans' corps with a much superior force, before it could receive aid from either of the others, and the neglect of doing so is one of those mysteries that envelope the story of Chickamauga; another, no less important in its bearing, is Longstreet calling a halt on the evening of Septemder 20th, when the retreating forces of Thomas, lying at his mercy, were permitted to withdraw undisturbed. Of course it will be said, in accord with Granger's afterthought, that Bragg's army had suffered great losses in the battle of two days; but no successful troops would have refused to march a few miles, no matter what losses had been sustained, if they saw a complete victory before them.

Upon the 18th of September Col. Dan McCook was ordered with his brigade and the 69th Ohio, to make a reconnaissance towards Reed's bridge, on the Chickamauge River, at the northeast corner of what afterwards proved to be the battlefield, and that he should destroy that structure should he be able to do so without bringing on a general engagement. Col. McCook's command arrived at dark within a mile of the bridge, when his skirmishers came upon the rear of McNair's brigade, of Bushrod Johnson's Division, which was passing along a road crossing his front. About twenty stragglers were picked up, without creating any disturbance, and after, a short time of quiet, the 69th Ohio was sent forward and succeeded in firing the bridge, which as it was afterwards proved was only scorched. At daylight on September 19th, the enemy opened with small arms and artillery upon McCooks men who had passed the night lying upon their arms, without fires, upon which Colonel McCook, following his previous orders, and, a peremptory order having been received before any great losses on his part, marched his command back toward Rossville. Upon reaching the point where the head of his command struck the Lafayette Road, General Brannan was

met (Croxton's brigade in advance), in column without advance guards. McCook called out to Brannan that he had a rebel brigade penned up in a bend of the river near Jay's sawmill, with the bridge in its rear destroyed. General Thomas reports that McCook gave him the same information at Baird's headquarters.

Immediately upon the receipt of Colonel McCook's report General Thomas sent Brannan, followed by Baird, eastwardly towards Reed's bridge and the neighboring sawmill with a view to capturing the brigade which was penned up in the bend of the Chickamauga River. This episode is described at some length on account of the very important events which followed it as a matter of course. The fact was that the enemy was in great force about the points mentioned and towards Alexander's Bridge. The divisions of Brannan and Baird were soon hotly engaged and the battle of the 19th of September was begun past recall. Besides the divisions of Brannan and Reynolds, General Thomas had those of Johnson, Palmer, Van Cleve and Davis, long before midday. Croxton of Brannan's division and VanDerveer of Baird's, after a number of short contests, had pushed their way to within a half a mile of Jay's sawmill. Baird and Brannan maintained the unequal fight for at least two hours when Johnson, Palmer and Reynolds came to their assistance. All day the battle raged with varying fortunes; sometimes in long lines, sometimes by small commands, until before night every division in the Army of the Cumberland was represented on the fighting front. At dark Johnson's division alone remained in advance at D. C. Reed's farm where it was fiercely attacked and for a time the line gave way, but rallied and held its ground after great losses, until the firing ceased; when it, with other divisions took positions in a line west of the ground fought over and the battle of September 19th ceased.

As has been stated, in a review of the book in question, we are not concerned about the battles of the 19th of September and the first half of the 20th, further than to give us an understandable perspective of the whole field for both days. Nor are there many points of importance in dispute before the arrival of Granger's Reserve Corps and the withdrawl of the whole of Thomas' command to Rossville.

From about noon of Saturday up to eleven o'clock on Sunday, Rosecrans' headquarters were at the Widow Glenn's house on the Crawfish Springs Road. Here late on the night of the 19th the Commander of the Army of the Cumberland had a consultation with his Corps Commanders regarding the arrangements of the lines for the next day. With some slight changes the plan was adhered to with the following result:

Sherdian's division (20 A. C.) was posted on the extreme right at Widow Glenn's. Davis (20 A. C.) was placed on Sheridan's left, his line extending to the south-east corner of Dyer's Field. Wood (21 A. C.)was on Davis' left, and Brannan's (14 A. C.) division on the left of Wood reached the Lafayette Road, north of the Poe house. Van Cleve's division was in rear of Wood and Brannan. There was a break in the line, as Reynold's right was in echelon four hundred yards in front of Brannan's left. Reynolds (14 A. C.) Palmer (21 A. C.) Johnson (20 A. C.) and Baird (14 A.C.) had their divisions in that order around and east of Kelly's field. The brigade of John Beatty was on Baird's left, Stanley's behind Baird, Sirwell's with the reserve artillery in rear of the left wing, these last named three being of Negley's division; this force being intended to guard the Lafayette Road from Bragg's formidable masses on his right. Granger, with Steedman's division and Dan McCook's brigade of the Reserve Corps, was posted at McAfee's Church, about four miles from Thomas' left to watch the road from Ringgold, and to give aid to, or to receive aid from the main army as occasion might demand.

The battle of September 20th opened by an attack upon our extreme left against John Beatty's thin line, which was driven back upon Baird's troops and this attack was repulsed. Stanley and the reserves of Johnson and Palmer drove back two Confederate brigades which had passed along the west side of the Lafayette Road in an effort to reach the Federal rear. Baird, Johnson, Palmer and Reynolds and Negley's two brigades repulsed many fierce assaults with steadiness and dertemination. The right wing of a Confederate brigade, its left held in check, slipped by to Kelly's field, when it was met and routed by Van Derveer and Willich, who always seemed to be on hand when wanted.

The greater part of Thomas' left wing was somewhat protected by a rude barricade of logs and rails, which aided the troops in resisting the terrible fire of the enemy. This slight but encouraging defence originated with Hazen, who throughout the whole day exhibited such skill, courage and perseverance as marked him as one of the most efficient officers in the army. Previously to the withdrawl of Wood from the main line Brannan was fiercely attacked in Poe's Field, but the enemy was driven from his front by an enfilading fire from the divisions of Reynolds and Palmer.

We now come to a very important phase of the battle, one that threatened the early defeat and destruction of the whole Army of the Cumberland.

About eleven o'clock Wood's division was withdrawing, under misunderstood orders, to assist Reynolds, who was on Brannan's left where there was the break in the line as described. Before Wood had wholly passed from his position two divisions of the enemy broke through the gap; one of these passing northwardly, crumpled up Brannan's division and all the troops in its rear; the other body of the enemy driving the troops of Davis, Sheridan and Wilder in a wild rout that bore with them from the field the Generals Rosecrans, McCook and Crittenden. The gallant Harker having escaped this attack returned with his brigade and for a time faced fearful odds, but very shortly these ready fighters with Brannan's men and those of Buell and Sam Beatty, a scattered mass, were pursued until a stand could be made by Brannan, Harker and fragments of other commands upon the heights south of the Snodgrass house.

General Thomas had nothing to do with posting the first line upon Horseshoe Ridge, as is proved by the official report and the statements of all concerned. When Brannan, Wood and the commands in their rear were driven north from the vicinity of the Poe house and Dyer's field, Brannan's troops reformed upon the westerly point of the Horseshoe Ridge, while Wood posted Harker's brigade upon the easterly hill, in continuation of that providentially discovered stronghold; while Stoughton found refuge between Harker and Brannan, and the 58th Indiana was placed between Connell's 82nd Indiana and Croxton. The 21st Ohio, a splendid regiment of Sirwell's brigade with 535 men

armed for the most part with Colt's repeating rifles, afterwards joined the right of Connell. When General Thomas arrived at the Horseshoe Ridge, from one to two o'clock, the line was as follows: 21st Ohio; 82nd Indiana; 17th Kentucky; 58th Indiana, Croxton, under Hays; 13th Ohio, Stoughton; 44th Indiana, Harker.

We now employ literally Colonel Gracie's words: "Our standard of truth, from which we quote, plainly indicates that Thomas was the grandest figure of the Federal Army; a monument of strength and inspiration to the courage of his soldiers, who had rallied in the woods and on heights to which they had fled, and where they had been posted under the orders of their commanders, Generals Wood, Brannan and John Beatty, and Colonels Harker, Stoughton, Hunter and Walker."

"Here, from one to one and a half hours, with a force of about 1500 fragments under Brannan and of at least 1200 (carefully estimated) of the Iron Brigade of Harker, including the 125th Ohio, 'Opdycke's Tigers,' and Smith's four guns and eighty-three men of the 4th United States Battery, whilom fugitives most of them whose courage was restored by the very presence of Thomas, the pursuit was checked and the heights maintained against that most formidable instrument of war, Kershaw's South Carolina Brigade, fresh from storming the heights of Gettysburg, and from victories on many hard fought fields, but none, according to their commander, more heavy than this. Kershaw's Brigade about 1200 in action, with Colonel Oates 15th Alabama Regiment, were the sole representatives that afternoon of 'Longstreet's Virginia Army,' in the assault on Chickamauga Heights; yet these men, on the strength of their reputation, inspired such terror that their numbers were more than quadrupled by the imagination of their opponents. About 2 o'clock P. M., to Kershaw's support on his left came Anderson's strong and brave Mississippi Brigade, of Hindman's Division; but still the heights were held, the 21st Ohio Regiment, the strongest in the Federal Army, performing yeoman service at this juncture with its efficient use of its five-chambered Colt's revolving rifles.

"Then followed the belated Bushrod Johnson, whose time

and energies had been wasted for hours waiting for orders to advance his much enduring, hard-fighting Tennesseeans.

"This is the crucial moment and the die is cast. The 21st Ohio's thin line at its middle has been thrown back like a gate on its hinges, in a vain attempt to finally resist the Confederate movement on Brannan's flank. But fifteen minutes more and this rally on the heights would have been of no use, and Thomas' superb courage, famed in story, might never have been a theme of grandeur. Grangers' Reserve Corps, without orders, marching *au canon, a la Desaix a Marengo*, had arrived on the field.

"After reporting to General Thomas, General Steedman, of this corps, was ordered to move his division into the three-quarter-mile gap between the two wings of the army. The Preparatory movement had been made, but before the final command of execution was given, the more immediate danger was seen in time. On the command 'right-face' Steedman marched west in rear of Brannan's line until the latters' right was reached, when first Whitaker's Brigade and then Mitchell's were moved by the left flank. The division then charged up the heights, General Steedman performing the most conspicuous act of personal courage recorded of any general officer on the Federal side, leading his men, most of them raw recruits, then for the first time in action, and, seizing the flag of the 115th Illinois, gained the crest and drove the Confederates down the southern slope of Missionary Ridge.

"About the time that Steedman's Division was thus put into action, another strong brigade of well-seasoned troops, under the command of a Mexican War Veteran, Colonal Van Derveer, reported to General Thomas at the Snodgrass House, and were immediately placed in the front in one line on the crest, relieving Brannan's troops (then almost exhausted), and posted next to the 21st Ohio's left, which still defended this flank on Horseshoe Ridge.

"By this acquisition of 4112 fresh troops under Steedman and about 1200 under Van Derveer, who had already rendered most creditable and opportune service on the Federal left wing and rear, Thomas was now strong in numbers and his whole command well supplied with ammunition; for another great service rendered by Steedman was the bringing up of ninety-five

thousand extra rounds of ammunition to be distributed among Brannan's and Harker's men, whose supply was nearly exhausted."

"The aspect of affairs on the heights was now completely changed, and the exultant Federals, who had been a few minutes before fighting in desperation, were reinforced with strength and courage like men who had won a victory. It was now that General Thomas resolved to hold his position and the army on the field until nightfall. He made his preparations for the purpose by general distribution of ammunition among both wings of his army. The Confederate division commanders on the left wing had received forcible knowledge of the material change in conditions by the arrival of reinforcements in support of the hitherto hard-pressed Federals on the heights. They now got together for the first time. Hindman and Johnson joined the brigades of their divisions with Kershaw's Brigade for two successive assaults in desperate efforts to gain the heights; for up to this time distinctly noticeable is the lack of unity of action on the part of these Confederate generals, due to the absence of any orders whatever form their wing commander, General Longstreet, and their inability to find him on this part of the field. Nay, more, questions of rank and precedence arose between them, which only General Longstreet's presence could have settled, and from 12 o'clock until now they had pulled in opposite directions.

"Nothing could exceed the intensity and desperation of the successive assaults which now followed, made by these seven Confederate brigades in line. Hindman mentions the fact that on his 'extreme left the bayonet was used, and men were also killed and wounded with clubbed muskets,' while Kershaw on the right effected a mometary lodgment near the crest, which drove the Federal from the sumimt; but the latter rallying all their available men, charged upon the South Carolinians whose colors were only saved by their bearer, who, after receiving a mortal wound, turned and threw the staff backwards over the works into the hands of his comrades.

"It was up to this time that Thomas, by virtue of his rank, used his discretion and held his men on the heights, by the example which he set them and the love which they bore towards

him. His antagonist, Longstreet, who for the most part of his time until now had stationed himself in the woods in the rear of his right division, Stewart's, at this juncture, first emerged therefrom in time to witness from Dyer's field the last desperate assault of Kersaw. Preston's division had at last been 'pulled away from its mooring on the river bank' and had been advanced, with his leading brigade in line facing north, bisected by the Lafayette Road, near the Poe house, with his other two brigades immediately in rear, also in line. Longstreet now got into the action in Dyer's field with his last division, Preston's, the strongest of all, which he had held in reserve. He still remained blind to the opportunity which had existed at noon and all afternoon, plainly evident to the Federal Generals, Wood, Thomas, Hazen and others. Why was it that he did not order the whole of Preston's Division directly forward along the Lafayette road, with Buckner's Reserve Artillery and the latter's other divisions, so as to fill the apparent gap of one-half to three-quarters of a mile between the Federal wings?

"There was in the same fringe of woods west of the Lafayette road, at this point, four other Confederate brigades, none of which had moved since noontime. Humphrey's Mississippi Brigade, formerly Barksdale's, which, under orders of the wing commander, was anchored at the 'Blachsmith Shop' and made no assault in the battle, the men begging in vain to join their comrades in the charge; then there were the Texas Brigade of General Robertson, Law's Alabama Brigade, under Colonel Sheffield, and the Georgia Brigade under General Benning, all three under the command of General Law, comprising a part of Hood's famous division, then located 'in line perpendicular to the road, to the left and slightly in advance of Preston and close to the burned house (Poe's).' Blind to his opportunity and ignorant of the weakest point in his adversary's line which appears to have been a continued source of anxiety to General Thomas that afternoon, General Longstreet ordered only two brigades of Preston's to Dyer's field, leaving the other third of the division, Trigg's brigade, at Brotherton's, for protection against the enemy's cavalry, supposed to be crossing the Chickamauga below Lee and Gordon's Mills, whom Trigg with two of his regiments 'was sent 1½ miles back to intercept,' on a

perfectly useless reconnaissance, wasting valuable time and energy only to discover that the alleged enemy was 'their own' Confederate General Wheeler's men. Gracie's and Kelly's brigades were then ordered forward to the relief of Kershaw and Anderson in a final and successful effort to gain the Heights of Chickamauga, and drive the enemy from his chosen stronghold which was made the 'keypoint' of the battle, first by the division commanders who followed the fugitives into the woods and mountains fastness and finally by the action of Longstreet himself.

"The assault of Gracie and Kelly had begun, preceded by 'a deadly fire on the right and right rear of the forces in front of Stewart.' The movement of this artillery, principally composed of the twenty-four guns of the Reserve Corps Artillery, and commanded by Major Samuel C. Williams, was in General Buckner's special charge under General Longstreet's orders, but it was not until Gracie had gained the heights that Longstreet ordered Buckner's advance northward, with a battery of twelve guns with Stewart's Division following, Longstreets object being not to drive this entering wedge between the two wings, so much as an effort to prevent the Federal left wing from reinforcing that part of their army which was posted on Horseshoe Ridge. Had Longstreet's orders to accomplish his object been given more promptly and more effectually executed, the reinforcement of Hazen's Brigade would not so opportunely have arrived in support of Harker and Brannan, nor General Hazen been rewarded with a major-generalship's commission for his act, which saved both Harker and Brannan from capture or annihilation. But it was long before this that General Thomas' watchful eye and attentive ear, of the trained soldier, forewarned him of the approaching storm and the danger to what he knew to be the weakest point in his army's position. It was also at this juncture, about 4:30 P. M., not later, that he received the withdrawal order from General Rosecrans.

"Heretofore, by reason of his being the ranking general on the field of battle, in the absence of any order from the commander-in-chief, Thomas had, in accordance with his resolve, used his power of discretion and maintained Harker's and Brannan's fugutive fragments at their position on the Horseshoe, assisted by the 21st Ohio, generously loaned Brannan on his urgent request to General Negley, and had saved these men on the heights and the whole army from immediate destruction, until Steedman's and Van Derveer's arrival.

"Another crises now ensues. At the actual and relative time of Gracie's advance in magnificent array, as recognized in the Official Reports of Federal officers on the Horseshoe and described with much admiration personally to the writer by some of them (General Boynton included among the number), General Thomas now received Rosecrans' first dispatch, directed to himself, ordering withdrawl, and as proven by thirty of our witnesses aganst the testimony of only one to the contrary, the evidence in fact being unanimous on the subject, General Thomas did not and could not delay one moment his obedience to the order, and forthwith dispatched his aid, Captain Barker, for Reynolds to make a beginning of the movement. Orders were also dispatched to the other left wing division commanders for their withdrawl successively. This was a wise move, to begin the withdrawl at this quarter, because of more precarious situation on his left wing, which at this juncture was within a few hundred yards of being completely enveloped by the Confederate lines.

"Thomas left the Snodgrass house before Gracie took possession of the heights, leaving General Granger the only corps commander on the battlefield, and by virtue of his rank, in command of the troops under Harker and Brannan, as well as his own men under Steedman; but Granger's personal departure seems to have been timed by the very first indications of Confederate success in driving Harker from the heights. Thus General Thomas 'quit when orderd and because he was ordered.' Meanwhile the withdrawl of Reynolds had already begun before Barker's arrival with the order. General Reynolds is quoted as saying, in his position at the breastworks that his only alternative was surrender. When his division reached the Lafayette road, General Thomas saw him. Putting himself at the head of Reynold's Division, General Thomas led his army in the movement of withdrawl.

"As before mentioned, the Confederates had nearly enveloped the Federal left wing; the front brigade of a division of

the right wing had reached the vicinity of the Kelly house, passing in rear of the Federal divisions of Baird and Johnson. Thomas himself ordered the charge and the division cut its way out. At the same time the way was made clear for the escape of the other divisions of the Federal left wing, most of whom were retired in great disorder,.

"Reynolds, misunderstanding Thomas' order, moved straight along the Lafayette road toward the Rossville Gap, not halting with his section of the division until checked at Cloud Church by Forrest's cavalry, while Thomas separating E. A. King's Brigade from the rest of the division, wheeled to the left near McDonald's house and reached a point of safety on the Ridge road at the head of McFarland's Gap. Here he halted and sent his orders for the withdrawal of the rest of the army, which he had left on Chickamauga Heights, and which had been driven therefrom before his order arrived. He thus obeyed to the letter General Rosecrans' orders to withdraw. The most direct route of withdrawal to Rossville was by way of the Lafayette road and Rossville Gap but, in accordance with the wording of Rosecrans' order, he moved toward McFarlands' Gap to 'join his army with Crittenden and McCook,' whose forces were then known to him to have been in that neighborhood. Finally, the full letter of obedience to Rosecrans' order was followed when he 'assumed a threatening attitude' by the formation of his line to resist pursuit and protect the withdrawal. This alignment extended from the head of McFarland's Gap to the Lafayette road and Cloud House, nearly to Rossville Gap. This alignment was completed about 5:30 P. M., and shortly thereafter General Rosecrans' second dispatch, sent through the medium of General Garfield, again ordered him to retire on Rossville, provided his troops were 'retiring in good order'. General Granger was present with Thomas, and here learned for the first time Rosecrans' command to retreat to Rossville." (Page 145, Gracie.)

Colonel Gracie adds, "It was also in the vicinity of the Cloud House that General Sheridan at 5:30 P. M. reported his arrival at Thomas' left, * * * He had received a terrible beating at noontime on the extreme right flank of the army, suffering a loss of over 30 per cent., yet he gathered and rallied

in the woods more than half the scattered remnants and brought them into line again at the extreme left flank of the army, ready before sun down to go into action again Sheridan's statement is that when he reported to General Thomas for action the latter replied that his lines were too disorganized and withdrawal was necessary." There is no shadow of doubt that Sheridan marched to Rossville after the debacle of the morning, and obeying an order sent by Rosecrans from Chattanooga at 5 P. M., he followed his original intention of moving out upon the Lafayette road, reaching a point three miles distant, where he halted on finding that it was too late to render assistance. Colonel Gracie states further that General Thomas, directed Sheridan, that; "instead of advancing further 'the 1500 gathered' should be reformed on the Lafayeette road at Cloud house and aid in covering the withdrawal to Rossville." (Page 110, Gracie.) General Davis joined Thomas' right by way of McFarland's Gap; too late, however, to take part in the engagement.

In no part of his history does Colonel Gracie neglect to defend those who he thinks have been unappreciated or unfairly criticised, nor does he permit those whom he believes to have been negligent of their responsibility to escape his reproof. He declares that Negley's withdrawal of the two small regiments left him, in charge of the artillery reserve, was timely and judicious, for the guns might be, and probably would have been employed by the enemy against our retreating columns; that whole regiments were lost or imperilled by officers who employed them to cover the retreat of their own commands; that many of those who were doing their whole duty in a courageous and faithful mannner were censured and maligned; and all this without fear or favor. His readers must judge from the authorities he quotes, how impartial he has been in discussing a vast number of vexed questions, which up to this time have not been solved.

About an hour after Granger had left McAfee's Church to aid General Thomas with Steedman's brigade, Colonel Dan McCook, who was during the two days under the direct command of Granger and Thomas, and whose every movement met with the commendation of both, was ordered to report to Granger via the Lafayette road. As the brigade was about to pass the

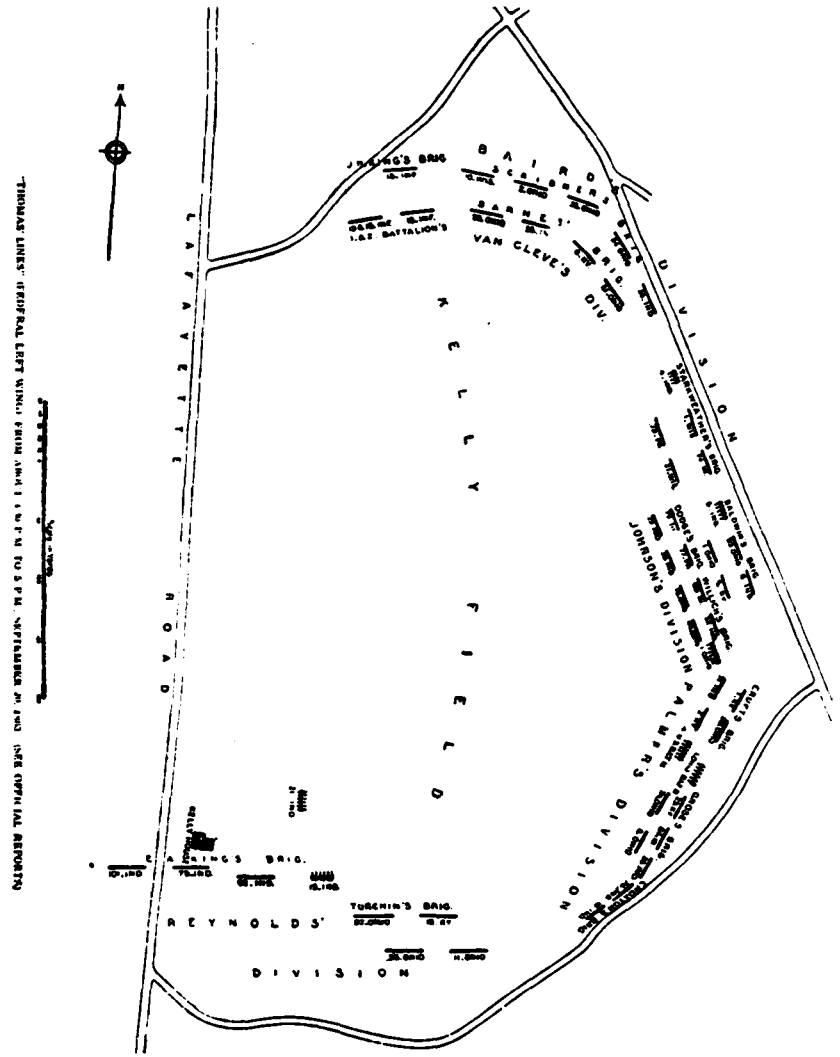
McDonald House, Colonel McCook ordered Captain Edward L. Anderson, his adjutant, to hasten forward to announce the approach of the command. Driven from the road by the fire of small arms and artillery Anderson turned to the right into the fields near McDonald's. Here he was met by Major Joseph Fullerton, of Granger's staff, waiting for McCook. At this moment the brigade, which had been marching by the right flank without an advance guard, was driven from the road by the artillery of the enemy to the heights behind the McDonald House. Fullerton waited to see where McCook would take position, while Anderson galloped forward and found General Thomas under a large tree near the Snodgrass house. General Thomas was perfectly calm, but Granger advancing from near by was weeping for the death of his Adjutant Russell, who had been killed but a few moments before in stationing Steedman's troops. This was about 2 P. M. Fullerton then arrived, and reported to Thomas that McCook's brigade, which he had noted from some distance, was posted on the crest of the ridge, apparently in perfect order. General Thomas remarked that "it was a happy chance, for McCook was just where he wanted him to protect our left flank and rear" and directed Captain Anderson to go to McCook with orders to remain where he was and hold the position. The wisdom of this decision was shown later in a remarkable manner, for it proved the rescue of the army, as will afterwards appear, and McCooks' brigade, by offering a threatening front in a commanding position and by use of its battery, performed greater service than it did even in the glorious Atlanta Campaign, when out of a brigade averaging about two thousand men it lost, at Kenesaw, Peachtree Creek, Jonesboro, and in many smaller engagements, three commanders and 1,089 good soldiers, killed or wounded. No officer, staff, or other, placed McCook upon the crest of Cloud Hill, as every member of the command well knew. His troops were simply driven from the road, and under the Colonel's hurried orders sought the crest of the hill which so timely and unexpectedly offered itself; the movement was unpremeditated, unforseen affair, that was as quickly begun as the report of the first gun sounded, and the men answered as readily, but in an orderly manner.

Rosecrans' dispatch directing Thomas to withdraw the army, and form a defensive line with Crittenden and McCook whom the Commander-in-Chief supposed to be somewhere in Thomas' rear, was sent from Chattanooga at 4:15 P. M., and was received before 5 o'clock as we knew from actual and constructive time. General Thomas immediately repaired to Kelly's field to hasten the movement. But a singular state of affairs had taken place in the left wing before Thomas' arrival. For some hours previously no word had been received from Thomas, and a consultation had taken place between the four division commanders and other officers of rank regarding the condition of their commands. This is not described in Gracie's book, but it is too important to pass over.

"There had been no intimation to the four commanders on the left—Baird, Johnson, Palmer and Reynolds—that everything had not gone well with the right. They could get no message from Thomas for two or three hours. At this juncture, fearing another assault by the Confederates, and supposing that Thomas had been cut off from them, Palmer, Johnson and Reynolds consulted with Baird and proposed that Palmer, as senior ranking officer, be placed in command of their four divisions and march them off the field. But Baird refused to join them, preventing this calamity." (Chattanooga Campaign, Col. M. H. Fitch, Bairds' Inspector General, Page 111.)

"About this time it was quiet on our front, and quite a number of general officers were congregated discussing the condition of the fight, among them two Major Generals, Reynolds and Palmer; and it was urged that we ought to have a general commander for our four divisions. Reynolds, the senior declined positively to assume it, remarking that it would be only assuming a disaster which was certainly impending." (A Military Narrative, by General W. H. Hazen, page 131.)

"The commander of one of the divisions near my own, approached me and said I was the ranking officer on the field, and that I ought to order a retreat of the divisions on the left to Chattanooga. At the moment the prospect did appear gloomy, and I was inclined to apprehend that matters were as bad as he supposed them to be. I told him, however, that if it was true that the rebels had defeated our right and center of the army,



and captured or killed Rosecrans, Thomas, McCook and Crittenden, so far as I was concerned they might have every man of the four divisions they could take; that we would cut our way to Chattanooga; that I would rather be killed, and be d——d, than to be d——d by the country for leaving a battlefield under such circumstances." Personal Recollections of General John M. Palmer, pages 183-184.

Shortly after this consultation Hazen was given permission to take his brigade to look for the right wing. About 5 o'clock he came upon Harker's "hard pressed brigade," on the open crest about the Snodgrass House, a few hundred yards in rear of his original position on the east hill of Horseshoe Ridge, whence he had been driven about 5 o'clock by General Archiblald Gracie who had gallantly taken possession of the long sought point of advantage. Hazen who had skirmished over from Kelly's field with a front of two regiments, together with Harker and a section of the 18th Ohio Battery checked the enemy's pursuit. Here Opdycke, "the bravest of the brave" was conspicuous in his gallantry and his regiment, the 125 Ohio and the section of the 18th Ohio Battery, formed the last fighting line. Steedman had fallen back from the main ridge, with Bushrod Johsnon between him and the Horseshoe. Brannan exposed on both flanks, was the last to leave the crest, retiring in rear of Snodgrass House; and by 6 o'clock the enemy had full possession of the stronghold so faithfully defended.

That is to say, the whole of Horseshoe Ridge was in possession of the brigades of Trigg, Kelly and Gracie, the only Federals remaining being the three captured regiments, 89th Ohio, 21st Ohio, and 22d Michigan, and a temporary stand of the 9th Indiana, which Gracie alleges had been sent to take possession of the middle hill, and that Brannan did this to distract the attention of the enemy, as was his abandoment of the captured regiments, to cover the "stealthy" withdrawal of his troops.

When about 4:30 P. M., General Thomas reached the southern edge of Kelly's field he found Reynlods already moving off in column of fours, while beyond him a compact body of the enemy was passing south towards the rear of Baird, Johnson and Palmer. General Thomas at once commanded Reynolds to form line, face to the rear, and charge on the advancing foe.

Turchin now made the charge which should live in history, as with wild cheers his brigade fell upon the Confederates and drove them more than a mile, uncovering the other three divisions. Barnett's Battery, of Dan McCook's brigade, aided Turchin in this attack and covered his retreat, when Reynolds and his troops found "shelter" behind McCook's brigade. Here were also the brigades of Robinson and Willich, and with these three commands General Thomas formed the nucleus of that front upon the line of hills that permitted the remainder of the army to withdraw by way of the 'Ridge Road,' to McFarland's Gap and Rossville.

Had McCook's brigade not been interrupted in its march to the front by an enemy which drove it to "the commanding position" south of the Cloud House; who can say what would have been the fate of the Army of the Cumberland? Had Turchin failed to return, the Confederates would have crushed the left wing in flank and poured masses in rear of the gallant men who had held the Horseshoe Ridge. Colonel Gracie remarks (page 114), "It can not be doubted that this position occupied by McCook's Brigade and Barnett's Battery was developed into one of the most important keys to the safety of the whole Federal Army, holding in check cavalry, infantry and artillery forces of the Confederate right. For on the Confederate right Forrest's Cavalry and troops of Breckenridge's and Liddell's Divisions overlaped the Federal left under Baird. Steedman's opportune arrival had pushed aside Forrest's dismounted cavalry, thus preventing the junction via McFarland's Gap and the two Confederate wings; and nothing but McCooks' Brigade and Barnett's Battery remained behind after Steedman to guard this threatened catastrophe—the surrounding of the Federal Army and blocking its withdrawal through the passes to Rossville." For these services the brigade was handsomely commended by General Thomas.

"They also serve who only stand and wait."

A few more words about the withdrawal of the troops from the field. It has been officially reported that no command except the brigade of Colonel Cruft had the good fortune to leave Kelly's field in perfect order. Johnson was fighting at the time the order came, but his right was exposed and he had to obey,

and reports that he owed the safety of his command to Willich's masterly movements; Baird's division which had borne much of the burden of the two days, owing to its exposed position on the extreme left of the line, again suffered severely in killed, wounded and prisoners; one of Grose's regimental officers on the left reported that his command had been crushed, so that Grose Palmer and Thomas were forced to recognize that Grose retired in "some confusion," when we know from the reports that the 36th Indiana and 6th Ohio withdrew in line of battle and turned to fight (as many of the men have told the writer); but Cruft goes down in history through his various superiors as having withdrawn in perfect order. It is evident from his report that Cruft, seeing Reynold's retreat, left the line before the last attack, which scattered Grose's left, and he therefore had a mere parade in reaching the shelter of the woods. (O. R. 50, page 733.) There was more or less confusion in all the other divisions after Reynolds withdrew.

After the troops from Kelly's field were on the road to McFarland's Gap, the heroes of the Horseshoe Ridge were safely withdrawn, except three regiments, (21st and 89th Ohio and 22nd Michigan) which were not notified to retreat and were captured, and the 9th Indiana narrowly escaped when it was ordered to make a vain endeavor to regain Hill No, 2. (the middle one); and the last shots fired at Chickamauga were between Lieutenant Colonel Henry V. N. Boynton's 35th Ohio and the 6th Florida. Henry V. N. Boynton was a gallant and efficient officer, a medal of honor man, one who distinguished himself on many fields.

Hazen followed the troops through McFarland's Gap as rear guard. Colonel Dan McCook's Brigade was the last command to leave the field of Chickamauga, sending two six-gun discharges from Barnett's Battery, in the spirit of defiance, by the personal orders of Granger, characteristic of that erratic officer, who appeared on foot about 6 P. M. An hour earlier General Baird suprised McCook by the information that the whole army was being withdrawn from the field. At 8'clock McCook's Brigade retired, unmolested to Rossville, reaching its bivouac about midnight, or later. (See H. J. Aten's admirable History of the 85th Illinois.)

In February, 1865, the author of this review, on his return from the Battle of Nashville, paid a visit to General Scott, in company with his uncle, Robert Anderson, a former aide-de-camp to the old Chieftan. General Scott was enthusiastic in his praise of Thomas, and turning to my uncle, said: "Robert, you have always known my opinion of George Thomas. Now I wish to say that, in my opinion, the Batlte of Nashville was the finest piece of grand tactics of the Civil War." Had Scott lived to know all the mysteries, now revealed, of the Great Battle of Chickamauga, such as the defence of Horseshoe Ridge, of the charge personally demanded of Reynold's Brigade, of the successful withdrawal of the troops in the face of a victorious enemy, of the quickly arranged stand at the head of McFarland's Gap, in what words could he have expressed his opinion of the strategy and tactics of his old favorite, who has proved himself one of the greatest captains of modern times.

Thomas' genius seemed to render him prescient for he was, always present at the critical moment, with a coolness that gave him instant, perfect control of his best judgment.

Truly, as Colonel Gracie remarks: "As the leader of the Federal Army, in its escape from complete annihilation, he received the crown of glory to which he was entitled."

While Colonel Gracie's book may not give the last word about the battle of Chickamauga, it exhibits a concientious and laborious effort to harmonize and reconcile the many statements regarding this great conflict into a fair and acceptable narrative, in which it must be admitted he has succeeded most creditably. He has gone to the Official Reports and to reputable witnesses for his facts, and whether or not we accept all his deductions, we have before us *The Truth About Chickamauga* as it is understood by an impartial observer.

NOTE.—The following named commands and fragments, some of which were mere squads, but which did honor to their regiments, fought on Horseshoe and connecting Main Ridge from about 2:30 P. M. to 4 P. M., September 20, 1863.

Beginning on the right (west); Steedman's Division, consisting of Colonel John G. Mitchell's and General Walter Whittaker's splendid Brigades, 22d Michigan, 21st Ohio, General Van Deveer's invincible troops, 87th Indiana, 58th Indiana, 17th Kentucky, 9th Kentucky, 19th Ohio, 79th Indiana, 14th Ohio, 4th Kentucky, 10th Kentucky, 13th Ohio, 19th Illinois, 18th Ohio, 11th Michigan, 44th Indiana, Harker's Brigade on the extreme left (east). Generals Steedman, Brannan, Wood and John Beatty were with their troops, and the divisions of Negley and Van Cleve were represented. The 18th Ohio battery, Lieutenant Frank G. Smith, U. S. Artillery, was on the line with the Snodgrass House.

CONFORMATION OF THE HORSE.*

BY GERALD E. GRIFFIN, VETERINARIAN THIRD FIELD ARTILLERY.

THE HEAD.

THE head of the horse, viewed in profile, should have an appearance of leanness and should exhibit a good depth of jaw, for the reason that leanness of the head is indicative of good bone and breeding, whilst depth of jaw in a lean head is evidence of good masticative power which is an aid to good digestion.

The muzzle should be velvety in texture with the lips firmly closed over the teeth and the nostrils large, and thin around their edges. A hanging or penduluos lip points to sluggish disposition, as a rule, whilst a small thick edged nostril is coarse in texture and has not sufficient expansion to admit the necessary amount of air to the lungs at the fast gaits; moreover, it may be observed that horses with small nostrils exhibit small caliber of windpipe and defective chest expansion.

The face should be straight and wide between the eyes, a conformation which leads to the assumption that the cavities of the head (sinuses) through which much of the inspired air passes are roomy.

The ears should be in proportion to the size of the head and when the animal is at attention they should be constantly on the alert; "*lop-ears*" are unsightly and usually bespeak lack of energy.

The head, considered as a whole, should not be out of proportion to the body, if too large it acts as an exhausting weight to the neck and shoulders, especially when the animal is fatigued and such a head is a fruitful cause of stumbling; if too small it will be found to be narrow between the eyes and ears—a sign of

*Extracts from lectures to the Line Class of the Army Service Schools, 1911-12.

restricted brain space—and possess small nostrils and shallow jaws. A head is said to have a "*Roman nose*" when the face is convex as it approaches the nostrils and is said to be "*dished*" when it presents a concave face line. A "*coffin-face*"—coffin shape—may be observed on a large, bony head when viewed from the front.

THE EYES.

To afford a wide field of vision the eyes should be set well to the outside of the head, but the eyeballs should be neither too prominent nor too deeply set in their sockets. "*Pop-eyed*" horses are usually shyers while "*sunken-eyed*" ones are usually dull and stubborn and do not see well to the side and rear without turning the head.

THE SPACE BETWEEN THE JAWS.

The space between the branches of the jaws, the jowl, should be large enough to admit the clinched hand so as to afford sufficient room for the top of the wind pipe (larynx) and to enable the animal to properly flex the head from the poll without bending the neck and thus getting "*behind the bit.*"

The glint of the eye, the set of the ears, the quiver of the nostrils, the texture of the muzzle and the distance between the eyes and ears are fair indications of the animal's breeding, disposition and energy when intelligently considered.

SET ON OF THE HEAD.

The set on of the head is an important matter in a cavalry horse when control is considered. An animal showing thickness around the throat and narrow between the jaws almost invariably pulls hard against the hand, while those having apparent thinness and looseness of the throat muscles which give an impression of lightness when viewed from the side, are usually light in hand after training, if this seeming looseness is combined with plenty of space between the jaws. Such a throat is not defective in muscles for when viewed from the saddle it will be seen to be strong and firm to the poll.

THE NECK.

An "*Ewe neck*" is one shaped like that seen on a shorn sheep. Such a neck is unsightly and horses possessing it poke the nose upward when bitted—"*star gazer.*" A "*cock*" or "*swan necked*" horse is one having the neck set on like that of a fowl, such an animal carries the head too high to be trusted in riding or driving at a fast gait over rough ground. A "*bull neck*" is a short, thick, strong and rigid one which is a conformation not desirable in a saddle horse, although not so objectionable in an artillery wheel horse, if the shoulders are sufficiently well developed for the collar. "*Bull necked*" horses generally lean hard on the bits at all gaits and get out of hand readily.

The line from the poll to the whithers, to which the mane is attached—"*the crest*"—is often over-developed and when it lops over to one side it shows that it gives additional weight for the fore-legs to carry, and as these same fore-legs are forced to support more than half the weight of the animals' body and usually three-fourths of the weight of the rider they should be favored as much as possible when the head and neck are taken into consideration.

Length and reasonable lightness of neck should be looked for in saddle horses intended for fast work, for the reason that the muscles which lift forward the shoulder lie along it and length of muscles, as a rule, means ease and quickmess of movement; for artillery horses a strong, fairly short, bulky neck is usually regarded as proper as it enables these animals to go vigorously into the collar without irritation. It should be remembered, however, that a heavy muscled neck gives an impression of shortness.

The necks of all horses should be sufficeintly strong and muscular to properly sustain the weight of the head and at the same time pull forward the foreleg. The muscularity of the neck is made evident when viewed from the saddle, a light looking neck will often be found to be exceedingly well muscled when viewed from this vantage point; whilst a weak neck looks thin and lacking in strength.

The crest should be firm and form a slight curve, with a slight dip just in front of the whithers. The lower part of the

neck surrounding the windpipe and gullet should be loose but firm to the feel.

In saddle horses the neck should slope nicely into the shoulder, as this conformation admits of easy play of the forehands; but in artillery horses this should be a well developed triangular surface extending from the whiters to the point of the shoulders and this surface should be heavily muscled to afford a seat for the bearing surface of the collar.

It is erroneous to suppose that because a horse is too big and sluggish for cavalry he will do for artillery. If such an animal was fitted for artillery in the first place the chances are that he would not have been assigned to cavalry, good artillery horses being very scarce and expensive. Heavy cavalry undesirables usually have shoulders unsuited for artillery.

The forelock and mane is straight and spare in well bred horses; a heavy curly mane and forelock is considered by horsemen to be indicative of coarse breeding.

THE BREAST.

The breast commences at the termination of the lower part of the neck and comprises the region included between the points of the shoulders and the beginning of the front of the forearms. In its central portion is located the breast bone which passes between the forearms and terminates on the under aspect of the chest on about a line with the points of the elbows.

The breast should be of medium width and should be well and smoothly muscled; if very narrow it points to a narrow flat chest which permits the forelegs to approach each other so closely that "*interfering*" or "*brushing*" of the ankles with the hoofs may take place at the trot.

When the breast is too wide it is usually indicative of too much arch and insufficiency of depth to the ribs.—"*barrel chested*"—and this conformation, which places the forelegs too far apart, causes the animal to "*paddle*"—throw the hoofs well outward—at the trot; such a conformation and such a peculiarity of action detracts from speed and nimbleness and renders the saddle motion uncomfortable. Breast and chest are separate regions.

THE WITHERS.

The withers begin to rise from the slight dip at the point where the top of the neck ends, attain their maximum height between the shoulder blade and then slope gradually into the back; this peculiarity of formation being due to the disposition of the spines of this region of the spinal column—backbone—which rapidly increase in length from the first to the third or fourth, retain an even length to about the sixth and then gradually diminishes as they slope into the back. At their extreme height they lie close to the skin and are easily injured by undue pressure.

The withers of a riding horse should be of medium height and should not be too narrow, too fine or too thick; if too fine and high they are usually narrow and the saddle with its tendency to work forward, due to the slight incline of the muscles of the back from loins to shoulders, is apt to cause contusions, if no worse, through the medium of the pommel arch of the saddle. High, narrow withers afford an excellent opportunity for the blanket to slip to the rear with the lay of the hair even though the saddle has a tendency to work forward.

Low, broad withers whilst less objectionable than high, narrow ones are apt to be pinched by the front of the side bars of the saddle which may also interfere with the play of the upper part of the shoulders and this interference with defective withers is a fertile source of leg weariness and even lameness in front when the full pack is carried on long marches.

THE BACK.

The back, which extends from the withers to the loins, consists—outwardly at any rate—of a thick pad of powerful muscles extending several inches on each side of the spine, and on this muscular pad, which has the upper portion of the ribs for a foundation, the whole weight of the saddle, pack and rider must rest, the withers and loins being unsuited for sustaining much weight.

The best back for military purposes is a short, strong well muscled one showing a level surface from behind the withers to the loins; a long back is, as a rule, weak and is generally associated with shallow "*floating*" ribs and weak loins whilst

short muscular, strong backs accompany powerful loins and well "*ribbed up*" bodies both of which are indicative of strength and "*bottom.*"

A back is termed "*swayed*" when it is unusually concaved; it is known as "*roached*" when it has a conformation resembling that of a hog's and is designated as "*razor*" when it exhibits a sharp edge along the back bone.

"*Swayed*" backs are poor weight carriers, are not well muscled and are easily galled; "*roached*" backs are strong but are difficult to saddle properly without tight cinching, whilst "*razor*" backs are generally the result of hard service on small rations which is responsible for the shrinking of the muscles of the back as well as the other regions.

THE LOINS.

The loins extend from about the place where the rear fold of the saddle blanket usually lies to a line drawn across the points of the hips.

The office of the loins is to place the weight of the body and load on the hind quarters to such an extent that the forehand may be enabled to move freely upward and forward. They should be broad, short and muscular as they assist materially in sustaining the weight of the head, neck and shoulders at the walk, trot and gallop.

Long, narrow loins are generally weak ones and are easily fatigued. When fatigued they are unable to function properly at the fast gaits while under pack conditions, and stumbling in front and "*disuniting*" behind are soon made manifest.

A horse "*slack*" in the loins is an uncertain and poor jumper who usually hestitates and flounders at his hurdles. Skeletons of long, weak loined horses frequently show one extra vertebra in this region of the spinal column.

THE BODY.

The body includes the flank, belly and chest and its shape is dependent on the spring and depth of the ribs and the length of the back and loins. Some horsemen refer to the girth around the flanks as "*the barrel.*"

THE RIBS.

The ribs should spring out well from the back bone and should show depth from the spine to the breast bone in order to afford plenty of room for the lungs and heart; they should extend well back to near the point of the hip, such a conformation being known as "*well ribbed up*" and "*short coupled.*"

At the termination of the breast bone, underneath the chest and about on a line with the point of the elbows—the "*cinch place*"—there should be a slight depression due to the upward and backward curve of the cartilage of this bone; such a "*cinch place*" affords a good seat for the cinch even with poor backs and eliminates the use of the split or corded cinches the strands of which are intended to bury themselves in the hair and skin and thus prevent slipping forward and backward.

Horses with poorly arched ribs are known as "*slab sided.*"

From the "*cinch place*" to the stifle the belly should have a very slight upward tendency and should be plump and full in outline, depending of course on the animals condition of flesh. When it runs up between the legs like a greyhounds it is known as "*washey*" or "*tucked up*"; if distended and pendulous it is termed "*pot belly*". A "*tucked up*" belly is often an evidence of weak digestion and poor "*bottom*" whilst a "*pot belly*" spreads the riders legs unnecessarily which is unpleasant at any gait.

The body for military purposes should be "*deep through the heart,*" should have deep "*floating ribs*" and should be "*well ribbed up.*" Shallow bodies lacking in depth and having bellies running up light behind are unable to stand the strain of hard field service, whilst "*slab sided*" bodies are usually narrow, are deficient in lung expansion, strong heart action and have the front legs so close together that "*interferring*" may be expected.

THE FORE LEG.

A good shoulder should start from withers of medium height and thickness and possess a long, fairly well sloped shoulder blade which should be well muscled and smooth in its entirety. When the shoulder blade is long and well sloped it will be found that the distance from the "*point of the shoulder*" to "*the point of the elbow*"—the arm—is quite short; the converse of this is true. Shortness of the arm is a desirable con-

formation indicating as it does that the shoulder blade is long and sloping.

The muscles which fill up the space behind the "*point of the shoulder*" should be large and powerful as their function is to draw backward and upward the leg from the elbow down.

"*Upright shoulders*" are those in which there is not sufficient slope; "*short shoulders*" are those lacking in length. The former while fairly well suited for draft purposes, if the collar bed is sufficient, lack the necessary spring and elasticity so essential in a saddle horse; the latter are deficient in the length of muscle so necessary for quick and graceful movement.

Good shoulders should be well set back on the ribs for if they are set forward on the neck, even if otherwise good, they permit the weight of the load to be thrown too far to the front thus overloading the forehand.

The forearm should be long and well muscled, and if the arm is short, the forearm will be long. When inspected from the side it should be broad at the elbow, a conformation that shows good attachment for the heavy muscles behind the shoulder blade, and its muscles should be well outlined and taper gradually to the knee.

Looked at from the front it should be narrow with bulging muscles on the outside and clean and hard on the inside where the bone is next the skin.

The knee should be large broad and flat in front, deep from front to rear and the knob of bone at the back should be large and prominent. A large knee offers plenty of room for the attachment of the strong extension and flexor muscles of the cannon.

When the line of knee deviates backward it is known as "*calf knee*" and when it is decidedly convex in front it is termed "*over at the knee*" or "*knee sprung.*" "*Tied in below the knee*" is a term used to indicate that the measurement across the cannon and tendons immediately below the knee is smaller than the same measurement taken lower down; such a knee does not stand hard usage especially over hurdles with a good weight up.

When the cannon shows good measurement, it is said to have "*plenty of bone,*" but this measurement includes the tendons so that the trem "*plenty of bone*" should mean that there is plenty of room for them and that they are well developed.

"*Filled*" or "*gummy legs*" are those that do not show the clean straight outline of the "*back tendons.*"

The pastern should be strong and of medium length and sloped short. Upright pasterns do not absorb the concussion and if the shoulder blade is upright also the animal is said to be a "*pounder*". Long sloping pasterns usually accompany a very long, sloping shoulder and while they possess plenty of elasticity and are pleasant riding at all gaits neverltheess they are not good weight carriers and quickly show fatigue.

THE FOOT.

The hoof should be of bright dense, healthy, horn without cracks or ridges and it should be in proportion to the size of the animal; it should be placed squarely on the ground and should not toe in, "*pigeon toed,*" neither should it toe out, "*soldier toed.*" Horses that toe in in front usually have a short mincing trot, while those that toe out in front throw their feet well outward at this gait and are known as "*winders;*" these "*winders*" are uneven in their stride and unsafe at the jumps, their take off being clumsy and uncertain.

In horses that toe out it may be observed that the elbows turn in toward the chest. Horses with narrow hoofs are said to be "*mule footed*" those with wide flat hoofs are often designated as "*splay footed;*" both forms are undesirable.

The sole—ground surface of the hoof—should be well concaved and the frog—horny sole pad—and bars well developed; such a ground surface is able to go safely for a long distance if a shoe is lost, whilst a sole with small thready frog, and weak bars inflection of hoof wall at heels is more subject to bruises and is unable to withstand the contact of the road for many miles without a shoe.

The heels should be well developed and should bulge slightly while the coronet should be smooth, clean and of an oily feel.

The condition of the hoof is a fair indication of the general health of the animal; a clean, healthy looking hoof indicating good health of its owner for at least a year previous—the time it

takes the average hoof to renew itself—whilst ridges suggest attacks of inflamation or disturbances of the digestive tract within the same period.

THR HIND LEG.

The quarters should be strong and heavily muscled running straight from the croup to the root of the tail, if possible, although a slightly "*drooping quarter*" is not objectionable and is charateristic of many excellent Irish hunters. When the droop is very prominent it is called "*goose rump*" and such quarters are not strongly enough muscled to propel the body and its loads forward without undue fatigue.

The thigh, from stifle to hock should be long and well muscled so that the leg may be placed promptly and securely beneath the body when in motion. The bunch of muscles found at the lower and outer part of the thigh is often alluded to as "*the gasking*" and the thick, strong tendon running from the muscles at the back part and which is attached to the point of the hock is known as the "*hamstring*" or "*tendon of Achilles.*" A horse lightly muscled between the thighs is known as "*split-up-behind.*"

The hock should be large and clean and the point should be prominent and well developed; from the point the back tendons should drop in a stright line to the fetlocks without bulging at the "curb place" which is about six inches below and in a line with the point. The inside aspect should be deep and clean, showing no enlargement over the "*spavin place,*" but it should exhibit a prominent knob of bone where the thigh bone ends. When the hocks lean toward each other they are termed "*cow hocks,*" and when they are bent under the body they are known as "*sickle hocks.*" When the thigh slopes well backward and the hocks placed well to the rear, the conformation is designated as "*cat hams.*" Large strong hocks afford good attachment for muscles and are better able to stand the strain and weight put on the quarters than light smooth ones. "*Cow hocks*" are generally weak and their action is defective at all gaits; "*sickle hocks*" generally reach too far under the belly and are consequently poor propellers, although if the back tendons are large and strong their owners are good at the fences, other

things being equal. "*Cat hams*" give a stilty motion to the gait at the trot and with this conformation the animal is very apt to become disunited at the leads.

Considered as a whole the hind legs skould be in proportion to the other regions of the frame, they should be well muscled, possess good length and depth of quarter with long straight dropped thighs and hocks and good, clean well defined tendons. When it is remembered that the hind legs are body propellers and that they are frequently called upon to endure severe strain in maneuvering, galloping, jumping and holding back in the wheel it will be realized that good strong hocks are essential to continued soundness behind.

From the hock to the hoof the conformation is essentially the same as in the foreleg, except that the hoof is usually smaller and narrower and the slope of the pastern greater.

DAILY DIARY OF EQUITATION WORK AT THE MOUNTED SERVICE SCHOOL.

FOR THE MONTH OF JUNE, 1912.

TRAINING CLASS.

Schedule June 1st to June 15th—about 1½ hours per day.

1. Outside 1 hour: Road work, canter, and ¾-mile gallop at 20 miles per hour.
3. Outside 1½ hours: Put on bit and bridcon, with curb chains very slack. Easy road work to accustom horses to the bitting. Light training work.
4. In hall 1½ hours: Testing colt individually through all the exercises.
5. In hall 1½ hours: Test of training and jumping. Jumps 3.ft. 8 in.
6. Outside 1 hour: Road work and gallop.
   In hall: Tests on training and jumping.
7. Same as 6th.
8. Lecture by Senior Instructor instead of usual ride.

10, 13th. Training for graduation ride, 1½ hours per day.

14. Graduation Ride. The ride of this class was intended to to show the steps in the training of a charger, taking it up from where the Breaking Class left off and continuing to where the schooled horses took it on. The following exercises were shown briefly but in a clear cut, definite manner; individual circles on forehand half turn in reverse, changes of gaits, the halt from each of the regulation gaits, and taking each gait from a halt, the drill by threes showing turns to right and left, about on forehand and on the haunches, haunches right and left, two tracks right and left oblique at school trot, the gallop in column with change of lead on changing hands; individually each rider executes a figure of eight at canter with two changes of leads at the canter; in column, the halt in line from a gallop, swinging from the track by the flank. For the jumping exhibition four jumps were set,

two small fences and two bar jumps 3ft. 10 in. The rider took the track on the left hand and after the second jump changed hands and changed leads and took the next two on the right hand. The two larger jumps were faced to the main gallery. The colts were required to maintain an even canter all the way.

SCHOOLED CLASS.

Schedule June 1st to 15th—about 1 hour per day.

3. In hall 1 hour: Executed the exercises with a good deal of collection demanded. Jumped one 3-foot hurdle several times.
4. In hall 1 hour: Review, same as 3d. Outside 1 hour: For walk and grazing.

5-13th. Practiced for the Graduating Ride. After forming track, on right hand at the trot, the movements were as follows: (*a*) large circle and spiral; (*b*) haunches in and shoulder in (at slow trot); (*c*) by left flank, backward, forward, slow trot and by right flank; (*d*) with right lead canter, by threes, by right flank, backward, forward, and with the left lead canter, track to the left; (*e*) on haunches, individual circles; (*f*) by threes by left flank, left oblique, change lead and take track to right; (*g*) counter gallop (canter); (*h*) slow trot, canter, change hand and change lead in center of hall; (*i*) by trooper on two tracks to center and change, change lead again at track; (*j*) all walk except leader of first platoon, individual change of lead; (*k*) canter with distances between threes extended, threes column left and form three circles, take track and slow trot at head; (*l*) canter, platoons column left and form circle and cross; (*m*) three concentric circles, the center and outer circles moving on right hand and the inner circle on left hand, last three of second platoon execute troopers left about at trot, all of first platoon execute on haunches troopers right about at trot then on haunches left about at canter, column of twos form, at trot, class pass out of hall and chang from double to simgle (snaffile) bridles.

After the previous execrises and after the hurdles had been placed in the hall, three in number, each 3 ft. 8 in. high, two of which were placed on the track (one on the right and one on the left) and one in the center of the hall on the diagonal, the riders returned one at a time at signal and rode once over the course.

14. Had Graduating Ride outlined above which reqiured about forty minutes, including the time necessary for handling the hurdles.

JUMPER CLASS.

Schedule June 1st to June 15th.

1. In hall: Twice over 4 ft. bars and 4 ft. stone wall, rapping bar used.
   Outside: Road work.
3. In hall: Twice over 4 ft. bars, rapping bar used.
4. Over Magazine Cañon course in pairs.
5. Led on road 1 hour.
6. Road work.
7. Try out over Liverpool jumps.
8. Lecture by Senior Instructor.
10. In hall: Try out over course for final ride.
11. Try out over the jumps on steeple chase course, one jump at a time.

12 and 13. Try out over the indoor course.

14. Graduating Ride, indoors, over the following course, bars 4ft., tripple bar 4 ft., railroad crossing 3 ft. 9 in. and stone wall 4 ft. 3 in. Also taking three fences 15 feet apart with arms folded and without reins.
15. Graduation Ride, out of doors: This ride was held at the race track over a series of four jumps such as are usually found on steeple-chase courses of this country, and built according to the specifications, consisting of a water jump, a board fence 4 ft. 3 in., a hedge and a Liverpool. The riders took the course one at a time and rode at a three minute pace or better. These two rides were intended to present such obstacles to the riders as they would be liable to encounter in mounted competitions, whether in the show ring, on the steeple-chase course or between the flags of a cross country run.

SECOND TRAINING CLASS.

Schedule June 1st to June 6th.

1. In open-air hall, 55 minutes: Work out at will for five minutes. Executed circles, abouts, half turns in reverse, haunches right and left, backing, flexions and gallop individually on both hands. Grazed five minutes.

3. In hall ½ hour: Worked at will at walk and trot for ten minutes. Executed flexions (lateral and direct), circles, spirals, serpentines, and changes of direction at will. Outside: Rode in woods and jumped logs and small rail hurdles; jumped ditches on Republican Flats.
4. In hall 1 hour and outside ½ hour: Review, same as 3d.
5. Attended exhibition ride given by the Olympic team on the race track grounds.
6. Turned out to pasture.

BREAKING CLASS.

Schedule June 1st to June 14th.

1. In hall: Longed, rode at walk, trot and canter. Drill at jog trot, canter, change of direction, serpentines. Outside for half hour at walk.
3. Same as 1st, and in addition dismounted flexion and training with whip.
4. Outside for road work.

5, 6 and 7. Same as 4th.

8–13. Preparation for final ride.

14. Graduation ride in hall: On the track, moving to the front, first at a walk then at a trot; large circles and spiral at trot then gallop on large circles, trot, serpentine, and take gallop on large circle on opposite hand; take track at gallop, trot, by flank, walk and halt; all work at will for a few minutes at walk and then at trot, executing change of direction, abouts and circles and riding on straight lines.

THE NEW ORGANIZATION OF THE SWISS ARMY.

BY AN OFFICER ABROAD.

"AN army is a living organism in constant process of development." These significant words appeared in the message to the Swiss Congress of 1906, recommending certain changes in the military organization, and they seem worth repeating at this time, when the improvements made by the law of 1907 are followed today by further changes of serious import.

The law passed in 1909 greatly increased the efficiency of the army: lengthened the time and made more intensive the the instruction of recruits; reduced the age limits of officers and resulted in a military force whose fighting value many experts from professional armies have publicly attested and which very few have ever decried. This law retained the former arrangement of the forces in four army corps—but from the first, a division of opinion on this subject declared itself in Switzerland. The agitation in favor of six strong divisions in preference to four army corps grew in the army and in parliament. In 1910 the chief of the General Staff, Sprecher von Sternberg, made a speech before a large assembly of officers of the army, in which he exposed the principes which governed his warm advocacy of the divisional organization.

One paragraph of his address seems worth quoting: "We should be more and more convinced that if some day the honor and the independence of our country demand it, it is not by remaining on the defensive that we would fulfill our duty, but by resolutely undertaking an offensive war. Therefore our military organization should be based upon the use which we propose to make of our army."

The federal message of June, 1910, contains arguments full of information, setting forth the reasons why the changes it proposes should be made, and above all why a divisional organization is more effective for Switzerland than the arrangement heretofore existing, viz: four army corps.

The following is a very brief analysis of this message, touching only upon those points which have special interest for us. The whole report in both its military and philosophical analysis is well worth reading.

Before proceeding with the consideration of the question of divisions versus army corps, the report touches upon the necessity of making the military districts accord with the latest census; the creation of mountain troops; the rejuvenation of the field army, many of whose elements were composed of the oldest men of the reserve; relieving the field army of certain duties which could readily be fulfilled by less active troops; reorganizing the train, and the introduction of mechanical transportation; the adding of machine guns to the infantry, and howitzers to the field artillery.

DIVISIONS AS AGAINST CORPS.

In adopting the organization in army corps, Switzerland which can only form a small number of these units, finds her strategical combinations limited by this small number, or else is obliged at the very beginning to break up an already constituted organization.

On the other hand, the organization into divisions presents the additional advantage of being a return to national traditions and of being better adapted to the territorial divisions of the country. Moreover, the adoption of the three brigade division brings with it all the benefits of a three unit organization, permitting the use of a reserve, without breaking up tactical units. In many cases the combination of the principal arms into a mixed brigade furnishes an excellent fighting unit and, in time of peace, furnishes a preparatory school for forming division commanders as well as for teaching the co-operation of the different arms. The practical teaching of strategy demands means which do not exist in Switzerland; therefore, officers who are already familiar with the tactics of a division would have to practice and form their strategical faculties by staff rides, the war game, and study of history. Moreover, the formation of four army corps staffs

in addition to the division staffs constitutes a considerable burden. With the divisional organization, on the other hand, division staffs are constituted and exercised necessarily in peace and maneuvers as well as in war. Two or three commanding generals and staffs, suitable for the command of an army composed of two or more divisions, are all, therefore, that remain to be formed in time of peace. The organization is less top heavy and lends itself to a greater number of combinations than would be possible in a rigid subdivision of the forces into four army corps.

These considerations lead to the adoption of the division organization,—six strong divisions being organized out of the existing army corps. Each division is composed of three brigades of infantry of two regiments each, the regiments being normally of three battalions; a bicycle company; a group of three comapnies of machine guns; a group of two squadrons of cavalry; a brigade of two regiments of artillery, each regiment of six batteries of four guns each; a battalion of two batteries of four mortars each; a division park of two groups, each group composed of an infantry park company and two artillery park companies; in addition to these, one park company for the howitzers; a battalion of engineers of four companies; one pontoon train; a telegraph company; six sanitary companies, and two subsistence companies.

The total active infantry is organized into 106 battalions. The average strength of the active infantry, in service from 1899 to 1907, was 113,638. We see, therfore, that each of the 106 battalions of active infantry would have over 1,000 men or about 270 per company.

Besides this, there are fifty-six battalions of landwehr, instructed and armed and available to re-inforce the divisions as additional brigades if necessary, serve as étape troops, or for the defence of positions prepared in advance, etc.; leaving the active army, composed of the youngest men, and the best instructed, untrammeled and undiminished for undertaking an offensive campaign.

In both the old and new organization there are twenty-four squadrons of élite cavalry. Two squadrons are assigned to each division and twelve constitute a brigade at the disposal

of the army commander. Besides these, there are twenty-four squadrons of landwehr cavalry.

The artillery consists of seventy-two batteries, twenty-four battalions, twelve regiments, six brigades of field artillery assigned to the six divisions. There are also four battalions of mountain artillery, one assigned to each brigade of mountain infantry; six battalions, each of two batteries, of howitzers.

The ammunition supply is assured by twelve park companies for infantry and twenty-four for artillery, each division having a park composed of two battalions. There are also four park companies for mountain troops, and six for howitzers.

There are nine ammunition trains for mountain troops and eight ration trains for the same.

The report insists that for a small army the division is not only a fighting unit, but a strategic unit; that its organization renders it independent, not only on the march and in battle, but permits its commanding officer to be given authority to communicate directly with the supply and road services as well as the recruiting and evacuation service.

All of the artillery, both field and mountain, is assigned to the divisions, in order to teach this arm its rôle in co-ordination with the others, and above all to maneuver along side the infantry.

The ammunition supply train is calculated so as to give 306 rounds per musket, 510 per gun, 304 per howitzer.

To handle a division of this strength requires a more numerous staff than for an ordinary division, especially one entering into the composition of an army corps.

Five automobiles are assigned to the headquarters of each division.

The report suggests the importance of a useful division of work according to personal aptitudes, and indicates that for the instruction of the staff officers of a division, staff rides and studies, map exercises, and similar work under the general or his chief of staff, are of more value than maneuvers with troops.

The eight bicycle companies constitute a novelty. One is assigned to the headquarters of each division, one to army headquarters, and one to the brigade of a cavalry.

Company commanders are now given a horse, for the first time, and certain other officers as regimental quartermasters, surgeons, supply officers, are mounted on bicycles.

The armed landwehr remains at the strength it has long had of 50,000 men, but it is to be reorganized into 212 companies of 170 men each. Those coming from mountain troops will man the mountain fortresses; the other sixteen regiments, forming six brigades, will be available for any use considered necessary.

There can be no doubt that this reorganization of the Swiss army into divisions, which at this monemt is being effected, is the result of profound study during long years by competent men, aided by the best advice which Europe could afford. It is especially interesting to us, since the Swiss army has a strength only slightly superior to the total of all our regular troops, wherever stationed, plus all the organized militia, or, say, 250,000 men. The organization decided upon is surprisingly similar to that presented in our Field Service Regulations for a division, viz: three brigades of infantry, two regiments of artillery, a battalion of engineers, and auxiliary troops of every sort. There seems no doubt that more strategical combinations can be made with six strong divisions than with four weak corps; that it is easier to select and instruct in time of peace six division commanders than it is to make efficient four corps and commanders and eight division commanders. These and many other considerations mentioned in the report of the Federal Council, should go a long way towards convincing us, if that were necessary, that in rejecting the army corps organization for our service the greatest wisdom was shown.

This new organization goes into effect April 1, 1912.

T. M. B.

CAVALRY RAIDS—THEIR VALUE AND HOW MADE.*

By Captain C. R. DAY, Fifth Cavalry.

THE raid owes its importance as a factor in modern warfare to its development in our Civill War. While it is true that raids had been made prior to that time yet "in strategical results, in skillful execution and far reaching effects, the American raids surpassed all previous operations of the kind and have as yet been unequaled."

Foreign military writers have apparently not placed any value on the lessons taught by our raiders, either ignoring them altogether or else treating them as possessing little or no merit, but instances are not lacking in which foreign armies might have made use of such operations and materially bettered their situation.

What influenced our unmilitary people to adopt this hitherto practically unknown manner of operating is an interesting question. Effort will be made to show that it did not suddenly spring into existence, but was a gradual and natural development due to the conditions of life and experiences of our ancestors.

The early history of our country is a record of struggles with Indian tribes and its pages are full of the exploits of small parties or bands traveling many miles through deep forests in order to fall upon the enemy unaware and wreak the vengence peculiar to that time. Our forefathers were not slow in recognizing the value of this stlye of fighting and quickly adopted it as their own and soon were able to beat the Indian at his own game. As the conflict between the whites and the Indians moved farther to the west, the regular troops began tc take a more active part in the contest but the same style of fighting continued.

*Thesis prepared at the Staff College, Army Service Schools, 1911–12.

In the Mexican War the American soldiers did not hesitate to put into practice the principles learned from the Indians. Small bodies cutting loose from all home communications and pushing boldly forward for many hundred miles into hostile territory, clearly demonstrated the spirit, boldness, self-reliance and stamina of the raider.

In this connection and showing that similar conditions in the lives of people produce similar results, it may be mentioned that the Cossacks are the raiders of Europe and the Boers of Africa.

Having seen how the spirit of the raider became broadcast in our land, let us next consider how it happened that he was so opportunely equipped for the work, for a man may have the heart and stamina of a raider and still lack some of the essential qualifications.

After the Indians had moved out, the white settlers busied themselves in cultivating the soil, establishing their social institutions and settling their private grievances and disputes and it is at this point of our development that the horse and pistol came into general use, the former being necessary for tilling the soil as well as for social and business relations, the latter useful for self preservation and in deciding many personal differences and points of honor peculiar to he times. Comfort and self interest demanded an expert use of both. But it is, of course, to be understood that all sections of our country were not equally blessed or cursed with the habits referred to above.

Coming now to the period of our Civil War, we find a population of natural horesmen, accustomed to the use of fire arms, especially the pistol, with a knowledge of warfare inherited from the old Indian fighters and a brief experience in the Mexican War. In fact we have the raider in person ready for the war which offered every favorable condition for his kind of warfare.

During the first years of the Civil War the authorities, although constantly demanding the advance of the Union Armies, were unwilling or unable to furnish men in sufficient numbers to meet the enemy at the front and at the same time properly guard the lines of communication and fortunate indeed were those commanders whose lines of supply were under the

protection of the gun boats. The Southern Raiders operated against these long railroad lines in a country thoroughly familiar to the men and filled with friendly inhabitants. It is to the credit of some of the Union commanders that they refused to advance under such adverse conditions although they thereby incurred the ill will of the administration and possible loss of their command.

The Northern raiders were favored by the fact that a large part of the population of the Southern states was friendly and that the Southern Confederacy was, as Grierson reported, a shell the outer rim of which once passed there was but little danger from any force in the interior. But this shell like condition did not hold for the Northern states, for when Morgan made his celebrated raid around Cincinnati approximately 100,000 home guards were called out to expel the invaders. The shell was not hollow but the inside was of a very non-resisting material. It was the regular troops that did the work.

Activity in raiding was, as a rule, confined to the side, which at the time, was superior in cavalry. Such superiority seems to be necessary before attempting this kind of operation and is the probable reason why the Japanese Cavalry failed to raid the long line of communications in rear of the retreating Russian Army in the recent war in Manchuria.

The great prominence given to the raids in the Civil War is not entirely due to the raiders. Their efforts have been ably seconded by our historians who have attached the term raid to a numerous and diverse class of operations among which may be mentioned Early's effort to capture Washington in 1864, Jackson's movement to the rear of Pope's army, Wilson's operations in Alabama in the spring of 1865.

The following quotation, bearing on this broad use of the word raid is from an article by Major Elliot on Sheridan's raid against Richmond. The Major was one of the participants in that raid. "There is considerable difference to be observed between expeditions of this character and the dashes by cavalry into the enemy's country constituting the raids proper." In the latter "a small body of horesmen would travel at great speed, avoiding any encounter with the enemy in force, deceiving and deluging him by feints and doing all the

damage possible to railroads and other property, then retreating as rapidly, dexteriously evading pursuit and scarcely permitting any rest for horses or men until they were safe behind the shelter of their (own) lines."

In Sheridan's raid the column of march was about thirteen miles long, the gait usually a walk, the distance traveled from fifteen to twenty-five miles per day and the object of the expedition was to draw the Confederate Cavalry in pursuit and as Major Elliott justly remarked there is considerable difference between such a movement and the one which he describes as a *raid proper*.

Differing from the two classes of raids just referred to, but to a certain extent resembling each, are some of the raids of the Confederate partisan cavalry which under such leaders as Morgan and Forrest more than once paralyzed the advance of the Union armies. The following condensed account of one of Morgan's raids will illustrate the difference. In July 1862 he made an expedition which has been designated "The First Raid into the Blue Grass Region of Kentucky." He reported the result as follows: "I left Knoxville on the 4th day of this month with about 900 men and returned to Livingston on the 28th with nearly 1,200, having been absent just twenty-four days, during which time I have traveled over 1,000 miles, captured seventeen towns, destroyed all the government supplies and arms stored in them, dispersed about 1,500 home guards and paroled nearly 1,200 regular troops. I lost in killed, wounded and missing of the number that I carried into Kentucky about 90."

As to the manner of operating in central Kentucky, General Duke stated as follows: "It was now deemed good policy to march more slowly, obtaining perfectly accurate information and increase the confusion already prevailing by threatening all points of importance. This policy was not a hazardous one, under the circumstances, for although forces surrounding the point where we now were, were each superior to our own, yet by getting between them and preventing their concentration and industriously creating the impression to which the people were at any rate disposed, that our force was 4,000 or 5,000 strong, Morgan had demoralized them and they were afarid to come out and meet him."

By means of such ruses he maintained his position in the midst of his enemies for two days meanwhile recruiting and supplying his command, 200 of whom started on this raid without arms.

The effect on the enemy is illustrated by the following telegrams: General Boyle to the President: "Send me troops or Kentucky is lost;" Lincoln to Halleck: "They are having a stampede in Kentucky, please look to it."

From what has just been said, it would seem that many of the raids of the Civil War resemble each other in name only and that they permit of division into distinct classes but a closer study will show that all such movements possessed certain elements in common and this enables us to arrive at the accepted military meaning of the word which is submitted to be the following: A raid is a strategical offensive movement of an independent command without lines of communication or supply.

As a matter of fact we know that the above definition is not the generally accepted view of the present day for it contains no limitations as to secrecy, fast marching or avoidance of general combat.

According to our Cavalry Drill Regulations: "Raids are isolated, independent cavalry operations, conducted with secrecy, by rapid marches, usually avoiding general engagements" and the objects of such expeditions are: "To harrass and weaken the enemy by drawing off in pursuit his cavalry or other troops, or by causing him to guard a great number of points; to threaten, interrupt or destroy his communications; to destroy his depots and source of supplies; to gain information; to cause alarm in the enemy's country, or create a sentiment unfavorable to the prosecution of the war; to interfere with the mobilization of the enemy's forces at the beginning of a campaign; to effect the release of prisoners."

The absolute value of any raid cannot be determined. It is an easy matter to figure up the total of supplies destroyed, men and animals captured and killed, but there are other elements whose value can only be guessed at, but these are equal

if not greater than those enumerated. The moral effect, the confidence which a successful raid inspires in the ability of their leaders, the depressing effect on the enemy, the worry caused the opposing commander, are some of the things that can only be estimated. But the value of a raid is not absolutely dependent upon its success. The two terms are not synonomous. The commander of a raiding force is responsible for its success, the commander of the army for its value.

On April 17, 1863, Grierson, with 1,700 cavalry, left La Grange, Tennessee and reached Baton Rouge on the 2d of the following month, having marched more than 500 miles in hostile territory, passing in rear of the Confederate Army, destroying the railroad at several points and burning considerable quantities of supplies. The great value of this raid was that it distracted the attention of the Confederate commander and caused him to scatter his forces in an attempt to intercept the invaders at a time when he should have given his whole attention to the operations of the Union Army.

Sheridan's Trevilian raid has generally been accounted a failure. "a useless expenditure of horse flesh," and while such might appear to be the case judging from what was actually accomplished still the movement was of great value to Grant in the secret transfer of his army to the South side of the James as it freed him from the observation of a large part of the Confederate cavalry.

Stuart's Chambersburg raid took place shortly after the battle of Antietam. The raiders captured the town and a few horses and got safely back but he, Stuart, "ought to have lost his whole command." In this operation the reward was out of all proportion to the risk run. It is hard to see what benefit, if any, was gained and it requires little imagination to picture the effect that the capture of the flower of Lee's cavalry would have had at that time.

In December, 1862, Grant was preparing a movement against Vicksburg. A single line of railroad connected his base, Columbus, Kentucky, more than 200 miles distant, a secondary base being at Holly Springs. Just as he was about to move, Forrest raided and interrupted his line of communication and Van Dorn raided and destroyed his base at Holly

Springs. Thus his advance was not only paralyzed but he was compelled to put his army on short rations and fall back to Memphis. Meanwhile, Sherman ignorant of what had happened proceeded to carry out his part of the plan and suffered a heavy repulse. This is one case in which the raid decided a campaign, a battle could have done no more.

During the same month, Bragg at Murfreesboro was putting his army into winter quarters and believing the fighting over until the following spring dispatched Morgan and Forrest on raiding expeditions, Morgan into Kentucky and Forrest as just stated above, when unfortunately for him Rosecrans decided to advance. The battle which followed was fiercely contested and for some time the result hung in the balance, in fact it might be said that victory was practically in the hands of the Confederates but they lacked the increment necessary to throw the scale. Is it too much to say that had Morgan been present with his command, which he claimed was the finest cavalry division in the South, the additional weight would have secured the victory? His raid was a great successs, he accomplished wonders, but his power was wasted on secondary objects and on his return Murfreesboro no longer belonged to the South.

On October the 2d, 1863, Wheeler raided and destroyed Rosecran's great wagon train of 500 wagons which were en route with supplies for the Union Army at Chattanooga.

The foregoing represents the results of a few of the raids of our Civil War. Such operations naturally favor a nation which is fighting on the defensive as they not only threaten the existence of the enemy's army but also compel him to make many detachments which cannot be used in the decisive battles at the front. They are one of the chief causes why "attacking armies melt away like fresh snow in the spring time."

The operations previously referred to were voluntarily made according to prearranged schemes or plans but the movements of cavalry and the fortunes of war frequently place mounted troops in positions where a dash for safety across the enemy's lines of communication is the only alternative to surrender. Such was the position of Davis' cavalry when it escaped from Harper's Ferry and captured Longstreet's ord-

nance train. Bazaine's 15,000 cavalry remained to be surrounded in Metz and neglected the excellent opportunity for raiding the German lines of communication. Stuart's cavalry being sent to make a forced reconnaissance in order to locate the right flank of McClellan's army penetrated so far in rear of the enemy's position, that its commander considered it safer to go on than to turn back.

Before attempting to describe how a raid should be made, one should first study the guiding principles of the great leaders of this class of operations and the following are given as some of those that were founded on experience and stood the test of war:

The leader must be a man of quick decision with nerve to back his judgment, able to promptly and accurately estimate the value of information as well as the advantages or disadvantages of the terrain. He must be a natural leader of men. The men should be especially selected, well disciplined and capable of withstanding great fatigue. The march should be on one road with only such detachments as are considered necessary. The rate of march should depend on the distance, the forage available for feeding and the horse supply of the country invaded. The fact that a raid is contemplated as well as its destination should be made known to no one except the commander, until the force is well on its way.

Information is of vital importance and on a long raid scouts and spies should be sent ahead to collect information and guide the column. According to Steele, "it may be laid down as a rule that a cavalry raid covering many miles of country * * * in order to achieve success must be made in a country whose inhabitants are friendly."

Every possible ruse should be employed to deceive the enemy as to the objective or mission of the raiding force and its numbers. Some artillery should accompany a raiding column, the number of guns being in proportion to the size of the command. On long raids the mental and physical strain frequently pases the limit of endurance, necessitating the most strenuous exertions to keep the men and even officers from leaving the column. In Grierson's raid one of his officers after safely performing a most dangerous detached operation for the

purpose of deceiving the enemy, became insane soon after rejoining, due to the great mental as well as the physical strain to which he was subjected. A command that is worn out physically is easily demoralized and for that reason alone a fight should always be avoided in the latter stages of a raid, not to mention the additional reason that the enemy is concentrating and endeavoring to cut off the invaders.

The command should, and usually does, live off the country and this necessitates dispersion. Men will not go hungry if there is a chance to get something to eat in the nearby houses and while looking for food it is only a step to look for whisky, which is universally recognized as the medicine par excellence for a tired out man.

But if a raid is hard on men it is simply death on horses and after every hard raid there must be a period of rest and reoutfitting, and any commander who orders such an expedition should bear this fact in mind.

A raiding force should always be liberal in granting paroles, and let the fact be known to the enemy. The opportunity of visiting home and mother offers peculiar inducements to many soldiers to surrender rather than fight.

The present theory of war comtenplates vigorous and continuous action. A campaign once begun is pushed to the decision. In such a case there can be little room for detached action and the place for cavalry will be the army. Raiding under such circumstances will be the exception. But this theory presupposes two armies in existence which unfortunately might not be the case with us if we were at war with one or more strong military nations. It may be a question then of having to surrender a certain amount of territory with the hope of recovering it later. If such should be the case then the raid might materially assist in delaying an advance into the interior. Modern improvements have put the raider at a disadvantage and if we may believe our aviation friends the raid may no longer be necessary for when the great birds of the air begin to circle over armies, cities and railroad bridges and drop at will tons of dynamite, it will be time for man to harken back to his ancestors and look for a cave. The wireless telegraph will make it difficult for the raider to out travel the infor-

mation of his advance. The automobile and motor cycle can now be used to carry infantry to guard fords and mountain passes in order to cut off raiding parties, but the raider has usually had to take desperate chances and he will have to do so in the future. Besides the elements may come to his assistance—it always rains when battles are being fought.

The large size of armies of the present day also hinders the raiding of their lines of communication for the reason that such armies usually cover a broad front and as the raid is generally started from a point well out on the flank it is evident that before reaching the main lines of supply the distance traveled will be considerable and the point at which it is intended to strike is necessarily well in rear. The broad front of the Japanese army made it almost impossible for the Russians to raid the short railroad line behind it, but had the Japanese advanced further north the Russian Cossacks would have had a much better chance to demonstrate their ability as raiders.

Let us suppose that a raid is contemplated under present conditions, what would be the ordinary method of procedure and the composition of the force.

The proposition is first carefully considered by the General commanding who particularly estimates the value to be gained as well the risk to be encountered; the effect that the absence of the cavalry will have on his command; the length of its absence and its condition on return. If he believes the reward justifies the risk, he will give instructions to the commander of the raiding force, giving him all the information available and designating what it is desired to accomplish, being careful to designate one or more minor objects in case it is found to be impossible to carry out the main mission. This in order that the movement may not have the appearance of being a total failure. It is hardly necessary to say that secrecy at this stage is imperative.

The size of the force must be in proportion to the expected resistance. The larger the force the stronger its offensive power and the quicker and more effectively can it carry out the work assigned, but a large force cannot move as rapidly or as secretly as a small one. The number must therefore be a

compromise and should never be more than absolutely necessary.

Artillery as a rule accompanies such an expedition, the number of guns being in proportion to the size of the command, and would probably vary between a battalion and a battery. All carriages should be double teamed. Mountain artillery might in some cases be preferable to horse artillery.

The best organizations are selected and the men are examined by the doctors and the animals by the veterinarians and only the physically fit are taken.

Ammunition and rations are carried on the saddle, if the country is barren of supplies a pack train is taken.

A certain amount of high explosives should constitute part of the equipment of every raiding force.

The command would also be accompanied by a small sanitary personnel, one or two expert telegraphers and probably a wireless section.

The route followed should be the one that offers best concealment, consistent with a rapid advance. These two requirements naturally conflict and as a rule the first few marches should be made for concealment even at the expense of distance.

The march should be in one column with only such detachments as are necessary to gain information and deceive the enemy.

Night marches should be the rule and when danger is most imminent the command should be in the saddle before day break.

The knowledge of the country will necessarily depend on the conditions but in any case it should be made as thorough as circumstances will permit and no effort should be spared to obtain trusted guides and to find out the location and strength of the enemy.

The rate of march will depend on the distance, the roads and chiefly on the horse supply of the country invaded.

Combat should in general be avoided, the commander must always bear in mind that success depends on secrecy and rapidity of movement and should he delay to pick up scattered detachemnts of the enemy he will find the road blocked to his main objective.

Every possible ruse should be employed to draw the enemys attention from the point of attack and cause him to disperse his forces.

If practicable a different route is taken for the return.

Finally, it may be said, that each particular raid will present a distinct problem, that the course which appears to be most dangerous will as often as not prove to be safest. Success depends upon the good judgment, nerve and luck of the leader.

THE RELATION OF PROMOTION TO ORGANIZATION.

BY CAPTAIN GEO. VAN HORN MOSLEY, GENERAL STAFF.

PLEASE permit me to correct the impression conveyed on page 172 of the July, 1912, issue of the CAVALRY JOURNAL where you state that:

> We have been told that the committee of the general staff that has been working on a reorganization scheme for the army was about to submit its report and that the same would soon be laid before Congress. Rumor has it that this long delay in submitting this report has been caused by a failure to reach an agreement as to how the resulting promotion that would follow the reorganization should be apportioned. If such is the case or in any case, the adoption of this principle of one list for promotion would have settled that question and have paved the way for a fair and free discussion of any reorganization scheme upon its own merit.

The committee of the General Staff which was directed to draw up the reorganization plan realized at the very outset that little could be accomplished until the questions of promotion involved were separated from the questions of organization.

Over a year ago a committee of the General Staff was ordered to investigate the advisability of putting all line officers of mobile troops on one list for promotion. The members of this committee were generally in full accord with the idea, but the practical application of the straight one list principle was found to present difficulties impossible to overcome with justice to all concerned. The reorganization committee, therefore, sought a modification of the straight one list plan which could be applied practically.

Inclosed is a copy of that part of the committee's report which deals with the relation of promotion to organization. It was accepted very soon after the committee began its labors. At no time during the work of the committee has the question of promotion affected in the slightest degree, the recommendations made or the decisions arrived at.

During one of the recent hearings which the Secretary of War held on this report, this question of promotion was thoroughly discussed and the proposition submitted by the committee was not seriously questioned.

The statement made by a member of the committee at this hearing is important as bearing directly on this subject. I therefore quote it in part:

The proposed policy outlined in Chapter No. 7 is recommended in order to separate questions of promotion from questions of oragnization. In fact, the committee believe that there is little hope of arriving at a sound solution of the many questions of organization which now confront us, without separating the question of promotion from the question of organization.

In this report the committee has attempted to do the best it could with the organzations now in the military establishment, indicating where deficiencies exist, so that when Congress might be ready to legislate for the army it could make its legislation fit into a definite plan. Thus, it will be seen when we have completed our review of this report, that we have outlined a building policy covering a term of years.

It is unfortunate that conflicting interests between the different arms have in the past, brought conflicting evidence before Congress as to the merits of proposed legislation for an increase of parts of the army. Even some General Staff officers find it almost impossible to view questions in their broadest sense if the arm to which they belong is in any way affected. If the policy recommended in this report should be incorporated into law, the officers of the Infantry, Cavalry and Field Artillery would have their interests united, for any legislation aiding one of these arms would aid the others in proportion.

Some reorganization schemes that have been proposed in the past have granted a slice of promotion to every arm and corps. While a few officers in the army might favor such plans, they are generally unsound tactically and it is believed they would receive very little serious consideration in the hands of the military committees.

There are a number of indirect advantages in the promotion plan here proposed.

It partially solves the question of relative promotion in the three arms.

It will give the Government an opportunity to educate officers in the three arms which have to fight side by side.

After such a policy has been in force some time, we would have officers who have had actual service in two or more arms. Eventually, General Officers can be selected from field officers who understand the tactical handling of each of the three arms, and the three arms combined.

Foreign governments realize the necessity of training officers in the tactical employment of each of the three arms, and they assign selected officers to other arms than their own in order that they may receive this training.

It has been stated that this policy would not work practically for an increase in the regular army at the outbreak of war. Deficiencies in the military establishment at such a time should be made good by the organization of volunteer units, under such a bill as the Dupont bill. It must be remembered also that after this policy had been in effect several years we would have a number of officers who would have had actual service in at least two arms, so that new organizations of any arm could be organized in the regular army and the more important positions of command be filled by officers who had had actual service in the particular arm being increased. Such a new organization would not be available for service at the front in less than four to six months, in which time the commissioned personnel would have adjusted themselves to their duties.

There is no use of talking about drafting reorganization bills until all minds are agreed upon some of the broad fundamental principles of organization. Much good will eventually come from the discussions which have taken place during the winter in Congress and in the Military Committees, for the military needs of the country are now more clearly and more generally understood. All concerned are working for efficiency, but unfortunately there has been conflicting views as to just what is necessary to secure it, and just what should be done to put our whole military establishment, both regulars and citizen soldiery, on a proper line of development so that both forces may be able to meet the many national duties which they may be called upon to perform. Many of these questions have been cleared up, and a better understanding of the subjects involved now exists, and there is every hope for the future. But professional officers must remember that sacrifices may be required in peace as well as on the battlefield, and all concerned must stand ready to yield when the interests of the whole army are at stake. Only in this way can Congress be informed of exact conditions and needs in the army, and thus be able to act intelligently on matters of military legislation.

PARTIAL REPORT OF COMMITTEE.

The orgainzation of the army should be determined by strategical, political, and economic considerations, with the sole view of serving the public interest. In the past, however, questions of relative promotion have largely influenced the result. Proper promotion of the officers is essential in any military system, and parity of promotion under similar conditions is necessary if we are to have an effective force. Human nature is such that all officers desire their share of promotion. The result has been, however, that these questious of relative

promotion have affected the proper consideration of all questions of organization. If an effort is made to secure an increase deemed necessary in any one arm, officers of the other arms are liable to oppose it unless by other increases, perhaps necessary and perhaps not, a parity of promotion is received. While, therefore, the question of promotion and rank is one that all officers are rightly interested in, it has interfered, and will continue to interfere, with any scientific and economical reorganization plans. It is therefore, considered an absolutely necessary preliminary to any reorganization of the mobile army to place promotion on an equitable basis independent of organization.

In order to accomplish this result in the simplest and most equitable manner, and with a minimum disturbance of existing conditions, it is suggested that the following rules governing rank and promotion should be incorporated in the military law of the United States.

1. Rank and command in any grade of the army below that of brigadier general shall be determined by length of continuous commissioned service as an officer of the Regular Army. The date of commencement of continuous service shall be known as the "date of precedence." In all grades below that of brigadier general all officers of the Regular Army shall be arranged in the order of their dates of precedence, and those appointed on the same date in the order of their appointments: *Provided*, That the Secretary of War shall assign constructive dates of precedence to all officers of the following classes who occupy anomalous positions on the lineal lists of their several arms.

(*a*) Those officers of Cavalry, Field Artillery, Coast Artillery and Infantry who were appointed under the act of February 2, 1901, and who had served as commissioned officers in the Regular Army or Volunteers prior to such appointment.

(*b*) Those officers who have lost rank by reason of the sentence of court-martial or as the result of examination for promotion.

(*c*) Those officers who have voluntarily transferred from one arm of the line to another or from a staff department to an arm of the line.

Each officer of class (*a*) above excepted shall be assigned a constructive date of precedence which will place him in the same position relative to officers of his own arm or corps as he now occupies on the lineal list of his arm or corps, and with reference to officers of other arms or corps whose dates of precedence may lie between that of the officer next above him and the officer next below him in his own arm or corps, he shall take precedence in accordance with total length of commissioned service in the Regular Army and Volunteers, and his constructive date of precedence shall be fixed accordingly.

Each officer of class (*b*) and (*c*) above excepted shall be assigned a constructive date of precedence which will place his position for rank and command next below the officer who immediately precedes him on the lineal list of his own arm or corps on the date of the passage of the act.

2. The order of promotion in each arm, department or corps shall remain as now provided by law, subject to the exception described in paragraph 3, below, which applies to original vacancies in the Cavalry, Field Artillery and Infantry.

3. Whenever any part of the Infantry, Cavalry or Field Artillery is increased or the number of officers in any of these arms is increased the original vacancies above the grade of second lieutenant due to the inrcease shall be filled from the next lower grade in the three arms, the number of officers promoted from each arm to be proportional to the number of officers of that grade in the three arms; *Provided*, That the the order of promotion in any arm shall be in the order of the lineal list of that arm, as now provided by law; *Provided further*, That, so far as practicable, officers shall be promoted in their own arm; *Provided further*, That when an officer is nominated for promotion into an arm other than his own he may waive such promotion, and in this case the vacancy shall pass consecutively to the officers next below him in the lineal list of his own arm; *And provided also*, That whenever an officer is promoted to another arm under the provisions of this rule his position for subsequent promotion in that arm shall be fixed by his position on the list for rank and command as determined by the date of precedence defined in paragraph 1 above.

4. Whenever any part of the Infantry, Cavalry or Field Artillery is reduced or the total number of officers in one or

more of the three arms is reduced the surplus officers should not be absorbed in the arm or arms in which the reduction occurs, but should be prorated for absorption throughout the three arms; *Provided*, That whenever any officer is transferred to another arm under the provisions of this rule his lineal position for promotion in that arm shall be fixed by his position on the list for rank and command as determined by the date of precedence defined in paragraph 1 above.

COMMENTS ON THE PROPOSED RULES FOR RELATIVE RANK AND PROMOTION.

Rule 1.—This rule does not affect promotion in any way, but provides that all officers shall take precedence in their respective grades in the order of their actual seniority, and not according to the date of last commission. On July 23, last, Captain W——. of the Cavalry, was promoted to the grade of major after twenty-three years, one month and twelve days of commissioned service. Major W——. is junior in rank to Major R——. of the Medical Corps, who, on the date of Major W——'s promotion, had served nine years, eight months and twenty-three days. Major R——'s seniority is based on the fact that his commission as major antedates that of Maj. W.—— by nine days, and this notwithstanding the fact that Major W——. had served as a commissioned officer more than twice as long as Major R——. The proposed rule would not expedite Major W——'s promotion, nor would it retard that of Major R——. It would simply provide that after arriving at the same grade their precedence should depend upon actual seniority. Major R——'s rapid promotion has been due to special provisions of law, under which medical officers enter the Army with the rank of first lieutenant and are promoted to the grade of captain in five years after first commission. (The period is now three years.) These provisions are designed to compensate for the fact that such officers must acquire a special professional education before they can enter the Army. The proposed rule for relative rank would not interfere with such special rules of promotion, but would simply provide that after arriving in the same grade officers should take precedence in the order of actual seniority.

Among Major W——'s seniors under the present rule of precedence is Major C——, of the Coast Artillery, whose seniority is based on the fact that he was promoted to the grade of major sixteen days befor Major W——'s promotion, notwithstanding the fact that he was actually Major W——'s junior as a commissioned officer by nine years.

The difference in length of service in this case is due to the fact that under present conditions promotion in the cavalry is relatively slow, while promotion in the Coast Artillery is relatively rapid. The proposed rule of seniority would not affect promotion in either arm, but would simply tend to adjust relative rank on an equitable basis when officers arrive in the same grade. Relative rank determines the right to command the right to choice of quarters, and precedence on boards and other duty, where officers of the different arms are required to serve together. Among officers in the same grade seniority for the purposes above indicated should be determined by actual seniority.

Rule 3.—This rule applies only to Cavalry, Infantry and Field Artillery. These are the combatant arms of the mobile army, and the rule is proposed in order to eliminate all questions of individual promotion from the problem of reorganization of the mobile army. With this rule in effect it is expected that questions of legislation affecting the mobile army can be considered purely on their merits from the standpoint of the public interest.

NOTES ON THE NEW RUSSIAN CAVALRY DRILL REGULATIONS.

By Captain N. K. AVERILL, U. S. Cavalry, Military Attaché.

EARLY in 1912 appeared the new Cavalry Drill Regulations for the Russian cavalry, a work involving several years of preparation, based on their experiences in the Russo-Japanese War, and having many new features.

As this new Russian Cavalry Drill represents the latest thought and opinion of the largest cavalry in the world on purely cavalry work, some notes on the same, indicating the main points of differences between their work and ours may be of interest. Such a review will have to be covered by sections, and for this paper I have taken the preliminary introduction and the subject of command.

FOREWORD.

"The Cavalry Drill Regulations, while giving instructions for the field service of the cavalry and indicating the proper formations and movements to be used in different cases, demand, nevertheless, that cavalry commanders pay special attention to the bequest of our great Emperor Peter I—'Not to hold to the letter of the regulations, like a blind man to a wall.'"

These general instructions are further emphasized in the introduction which states—"Therefore, each cavalry commander is *bound* to conform his actions to the actual conditions, even departing, in necesary cases from the letter of the regulations. Everything not foreseen by the reuglations is left to *the initiative of those who execute the action*, therefore the interference of a chief is needed only when the actions of his subordinates are clearly erroneous."

COMMANDS.

The commands are given by voice, personal example, signals, trumpets, whistle, orders and by optical signals.

The use of a trumpet is limited to the chief of a section acting alone.

Important cavalry units are generally governed by orders (not commands). In battle commands can usually be used only in small subdivisions. A commander of a regiment will frequently be obliged to have recourse to orders.

A junior officer commands only his own party, calling it by name or number, and even in these cases signals take the place of commands whenever possible. Commanders of platoons when the squadron is in close order command solely by means of signals.

As can be seen from the above extracts, the first great point of difference in the Russian cavalry work and our own is the silence of the same. Compared with the frequent bellowing of some officers,the trumpet calls repeated at times, the repetition of the command by the junior officers and the general noise of our regimental drill, the first thing that strikes one, seeing a squadron or regimental drill here, is the air of peaceful quiet which prevails, the absence of practically all noise except the horses' hoofs. This is of course due to the use of signals by all, from the colonel down.

SIGNALS.

The following signals are especially noteworthy:

1. The saber held aloft, vertically is a sign of attention.

2. All changes of gaits or direction, halts and abouts are indicated by the personal example of the leader.

4. A pretence of sheathing the saber means for the squadron formation in platoon column; for the regiment, formation in line of columns.

5. Taking off the cap and rapidly lowering it to the right stirrup means dismount.

6. The lowering of the uplifted saber is the signal for execution.

The lack of noise and the use of signals are necessarily correlated, one being the complement of the other. As the Russian signals may be made by personal example, by the saber, by the cap, or in time of campaign, by the arm, it can be seen that all commands are covered by the use of signals either singly or in combination. It is a very pretty sight to see the regiment at work here at a full gallop and never a command.

TRUMPET.

The use of the trumpet must be limited to those cases where other means of issuing commands may be insufficient.

The calls—"Form on Front Echelon," "The Rally," "The Assembly," "The Retreat," are repeated by all the trumpeters in the ranks.

The use of the trumpet being limited to the chief of a section acting alone, and then only when it is impracticable to use other means of command, one rarely hears the trumpet in the drill. The idea seems to be that the trumpet, when used in action, is to indicate some sudden emergency, when all the trumpeters repeat the call.

THE WHISTLE.

The whistle may be used to attract the attention of the men in small commands acting alone. When dismounted the whislte means "cease firing."

ORDERS.

An order must be brief and clear. Orders have to be largely used in battle, when commanding a regiment or larger unit.

The man to whom the order is given (orderly), on receiving the same, must immediately repeat it and after having transmitted it will, on returning to their commander, again repeat the same reporting: "I have transmitted to so-and-so, such-and-such an order."

OPTICAL SIGNALS.

These are given by means of flags, optical instruments or other means and are used when the cavalry is in large

masses, deployed over a large extent of ground, and they may be used especially in dismounted action.

CONCLUSIONS.

The above are the salient points of the introduction and and system of giving commands in the new Rsusian Cavalry Drill, and they are of interest in so far as they differ from our own.

When the time comes, as I believe it surely will, when we adopt a double line formation for mounted work, it will be necessary to change our drill and the ideas in this, the latest of foreign cavalry work by the largest cavalry in the world, will at least be worthy of careful consideration by all our cavalrymen, and especially by the cavalry board entrusted with the drawing up of our new drill regulations.

I would, therefore, in conclusion, invite particular attention to the following: First, the maxim of Peter the Great and the idea emphasized in the introduction: "Not to hold to the letter of the regulations like a blind man to a wall;" second, the silence of the cavalry drill here and the universal use of signals; third, the large use of orders in battle order for a regiment or larger units, and the adoption of a particular manner of sending them verbally.

SECOND PAPER.

THE GAITS.

The gaits of the Russian cavalry are five, the walk, trot, gallop, field gallop and full speed. The ordinaly rate of march is five and one-third miles per hour, by alternate walk and trot, each of one verst (one verst equal two-third mile.)

Of the gaits above mentioned two, the walk and the trot, are the same as ours, the gallop is ten and one-half miles per hour, the field gallop is sixteen miles per hour, and the full speed is the limit of the horse.

The main point of difference is, therefore, the division of the gallop into three classes. Of these the first, the ordinary

gallop, is much slower than our own, being really little more than a canter of ten and one-half miles an hour; the second the field gallop, is a full gallop of sixteen miles an hour; the third, is the charging gait.

While the ordinary gallop may seem very slow, and impossible to maintain I have yet to see the first horse here out of gait. While this statement may seem almost incredible, in all the drills at which I have been present, I have not seen a single horse trot when he should be galloping or vice-versa; and this in itself is the best commentary on the Russian system of training horses.

CHANGES OF FORMATION.

The following general rules for changing formation are of interest. "All changes of formation and all movements must be executed in the simplest way so as to secure the quickest possible execution.

"When a unit moves in close order, the chief leads it personally, indicating the direction and the gait by his personal example. He is followed by the leading section to which the others conform their movements.

"When forming line from column and in all changes of formation of the rear units, if the gait be not indicated the formation is executed at an increased gait when marching, and at a trot if at a halt. When forming column from line, if the gait be not indicated, the leading unit, if moving, continues at the same gait, or at a walk from the halt."

These general principles would seem worthy of notice as tending to simplify all questions of gait, and for all ordinary purposes they make any command for the gait unnecessary.

DRESSING.

"A platoon in line acting alone dresses *always* on the center rider who must keep in rear of his commander.

"A squadroon acting alone, in line or in line of columns, dresses on the center; if necessary to dress on a flank this must be indicated in the command; in column of platoons the platoons always dress on the center.

"A regiment acting alone, in line, in mass, or in line of

columns, dresses on the center squadron; if necessary to dress on any other squadron, this is indicated by the command.

"Larger combinations (brigade and above) at a halt dress in place; when moving they follow one of the regiments or brigades indicated by the commanding general.

"The commander of the leading or base unit leads the same in the trace of the senior commander, at the appointed distance or in the direction indicated by him."

MOVEMENT AND HALT.

"The commander of the leading or base unit is answerable for the maintenance of the direction and of a regular and even gait.

"The command of execution '*March*' is given when the gait is to be increased, but is omitted when the gait is to be decreased." For example at a walk to increase the gait the command is "*Trot*"—"*March;*" but when at a trot to decrease the gait the command is simply "*Walk.*"

To halt the command is: "*Squadron (Regiment, Brigade)*" "*Halt*"—"*Dress.*" The command halt is given, according to gait at which moving, at from five to fifty paces from the line where the unit is to halt. From these distances the formation must gradually decrease the gait to a walk and then halt; the offices come up to the line, halt and quickly dress; the formation halts in rear of the line of officers, and at the command "*Dress*" approaches quietly at a walk to its proper distance in rear of the officers and dresses on the center.

The question of alignment is thus seen to be very simple. The dress is always center, unless for some special reason one of the flanks be designated. With the platoon, the platoon commander is always the guide; with a squadron the captain is the guide; with a regiment, the colonel; and the subordinate chiefs keep their proper distances in rear. For an illustration, take a regiment at drill: the colonel leads, at the appointed distance in his rear approximately seventy-five yards come the line of captains, the guides for their squadrons (troops); in rear of the captains come the line of platoon commanders, one of whom leads the base platoon and in his rear comes the center trooper on whom the others dress. In

other words, a command for dressing is almost never heard, the officers are the real guides and not a soldier, the maintenance of direction and gait rest on the officer leading the base unit. The same principle is carried out in halting a command, the officers establishing the line, and but one command is heard for the alignment—"*Dress*," which is of course made on the center.

CONCLUSIONS.

In the above review the following are of particular interest: first, the use of two gallops a slow and a fast one; second, the general rule that all movements are to be executed in the simplest possible way; third, the general rule that in forming line the gait is always at a trot; if from the halt. or at an increased gait when moving; fourth, the officers are always the guides and the dress center. The simplicity of this fourth point would be especially worthy of adoption in our new Cavalry Drill.

THE NEW CAVALRY EQUIPMENT.

By Captain EDWARD DAVIS, Thirteenth Cavalry.

THE extracts from the final report of the Cavalry Equipment Board which have thus far appeared in print have been rather fragmentary, have not dwelt suffi iently upon some of the more important articles and have failed somewhat in accuracy. Having been called upon frequently to answer questions about the new equipment, it has occurred to me that the publication of a few photographs with certain accurate comments would be of interest to officers of the mounted service.

It is the hope of many officers that the War Department may yet follow the example of General Sherman who, while Commanding General of the Army, published in General Orders No. 76, 1879, a brief digest of all the recommendations of the Equipment Board of 1878 together with the comment of the Chief of Ordnance, the Quartermaster General, the Commanding General, and the final action of the Secretary of War. Thus the responsibility in each instance was known to the entire service and the atmosphere delightfully cleared. Those who desired to criticise were able to do so not only with vigor but with accuracy.

It is intended in the following pages to present only a general description of some of the more important articles, with brief references to the uses they are intended to serve. It is not desired here to enter into a long statement of reasons or arguments in support of the Board's recommendations, as all of these were presented by the Board to the War Department where, it is assumed, decision will be made with due allowance for the fact that the recommendations of the Board were made after two years of constant work upon this one subject of equipment.

The Board had before it some three or four thousand documents representing the opinions and recommendations of

hundreds of officers of the mounted service. It had also, for inspection, the horse equipment of the following nations: Great Britain, Germany, France, Russia, Austria, Italy, Spain, Holland, Denmark, Norway, Sweden, Belgium, Switzeralnd, Japan and Mexico. Supplementing the Board's advantage in actually inspecting these equipments, were the reports on foreign cavalry equipment, including photographs, drawings, compilations of statistics, etc., provided by the American military attachés at London, Berlin, Paris, St. Petersburg, Vienna, Tokyo, Peking, Buenos Ayres, Chili, and Peru. Further evidence was found in the proceedings of earlier boards on cavalry equipment, notably those of 1884, 1878, 1874, 1872, 1859, 1857 and 1847. These documents constitute the main portion of the recorded history of American cavalry equipment. Consultation was also had with experienced and successful business firms and manufacturing institutions engaged in the production and sale of first-class saddlery and kindred articles. These men of commerce, were as a rule quite eager to meet the governments representatives more than half way and gave many very valuable suggestions. In its actual work of design and development of equipment, the Board had at its disposal the resources of the personnel and plant of the Rock Island Arsenal and the active and generous support of the Chief of Ordnance.

THE SADDLE.

As was anticipated, this article with the possible exception of the rifle carrier, proved to be the most difficult problem before the Board. Without doubt the most interesting feature of this saddle is its adjustability, which is attained by joining the side bars to the bases of the pommel and cantle arches by hinges instead of by the usual rigid joints. In a later paragraph this feature will be discussed with regard to the mechanical side of the question.

The idea of an adjustable saddle is not original with the Board, in fact it is not of recent origin, one having been patented in the United States by W. E. Jones, (sometime Lieutenant U. S. Army) as early as 1856. This Jones saddle failed through the mechanical insufficiencies of the period and the impractical feature of hinges at the top of the pommel and

cantle arches as well as the base. For some years there has been a Netherland and Austrian and a Russian adjustable saddle, while Great Britain has a 1911 model of this type. Cap-

CUT No. 1.—SERVICE SADDLE.

tain H. A. Sievert Ninth Cavalry, U. S. A., a'so has developed a saddle with hinged bars. It is evident that there is now a general movement among the various nations towards the use

of a military saddle tree with lateral adjustability obtained by hinged side bars.

The Seat and General Features—Cut 1.

One sees in the photograph a composite of several excellent saddles. The pommel is possibly more like the German saddle, the cantle resembles the French officer's military saddle, while the dip or curve of the seat is very much like that of the British service saddle. This dip, however, was so shaped and the stirrup loops so located as to enable the rider to most easily assume the seat which is now being taught at the Mounted Service School, Fort Riley. The cantle hinge is rather noticable in the photograph. Doubtless some officers fear that the hinge feature of this tree will result in the seat being unduly raised above the horse's back. On the contrary, the seat of this saddle at its lowest point is, by actual measurement of new saddles, one-half inch nearer the horse than that of the French officer's saddle ordinarily seen at the Mounted Service School. Under the seat, shown in the photograph, is a ground seat of sole leather and under this two strips of the best English straining web, all being supported by a steel frame which is shown in a later photograph—Cut No. 3. The side bars are seen to project well to the rear. This gives an ample support for the cantle pack and the bars are turned up sufficiently on the end to prevent their boring into the horse's back. There is a metal cantle pack support, not shown in the photograph because it is folded back under the saddle. For field purposes it would be extended and for ordinary use folded back out of sight and kept up off the horse's back by its strap.

The skirt is made rather wide from front to rear so as to afford ample protection, and its length is gauged so as to avoid undesirable contact of upper edge of legging or boot with lower edge of the skirt. The stirrup strap is one and three-eighths inches wide and the leather reduced in thickness as far as considered wise. The buckle is as small as practicable and is assembled to the strap so that the latter hangs with the flesh side out, a measure which adds to the life of the leather.

The stirrup is that now used by the field artillery, being of nickel steel with the sanded oxidized dark finish. Polishing

this stirrup should be prohibited. To clean, merely wipe with an oiled rag. The steel stirrup permits better horsemanship and more comfortable riding, lasts longer, has less bulk, weighs less, costs less, and looks better than the present issue stirrup or any other similar type of hooded stirrup.

The Board realized that the elimination of the hooded stirrup would cause much adverse criticism on the part of a considerable number of excellent officers who are tenacious in their support of this article. These officers desire a hood as a protection against thorny brush and extremes of heat, cold and rain, and they are correct in asserting that the hood does protect against such conditions. The desired protection, however, is more appropriately and just as fully gained by suitable wearing apparel, while the stirrup ought to serve a fixed and independent purpose, *i. e.*, as an aid to horsemanship. Such use is not properly attained by the present service stirrup.

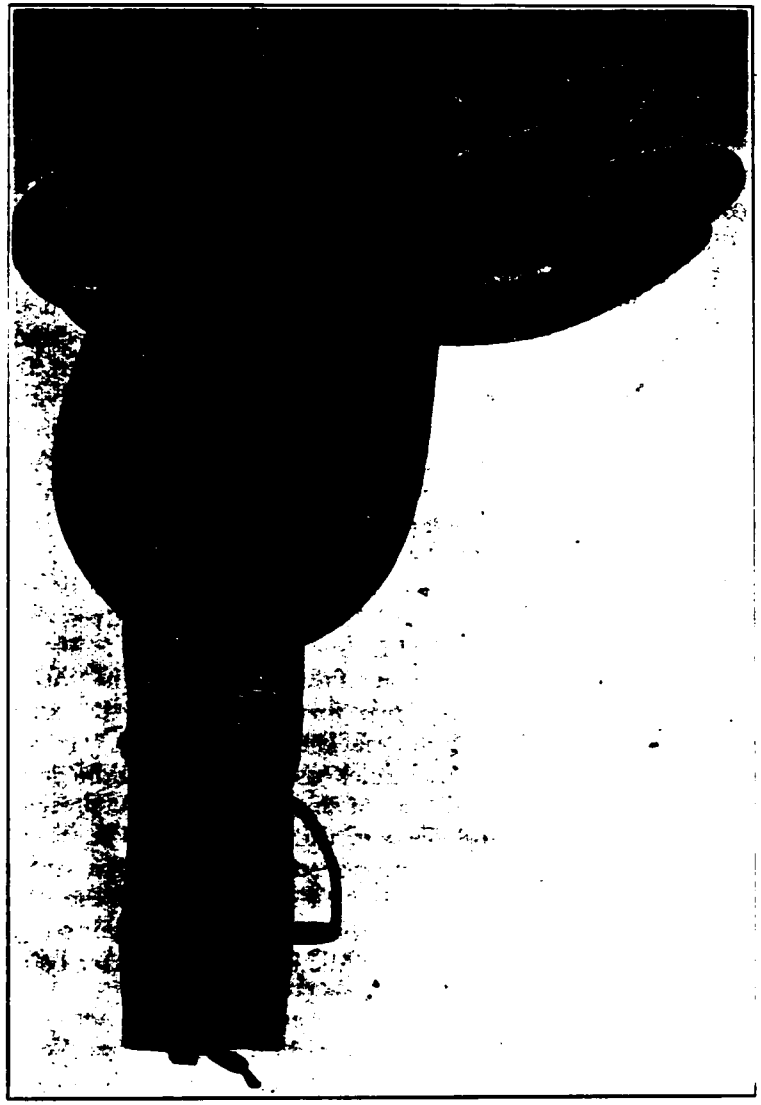
The Board is convinced that the new stirrup will win its own way and need not be supported by words when once it is put into general use. As the effort to remove the hood from the stirrup dates as far back as 1868 and was favorably endorsed by the Equipment Board 1878, it will be admitted that there is nothing new or radical in this idea.

The foot staple which is seen on the pommel and the leather loop which appears on the upper forward corner of the skirt are used to secure the pommel pockets to the saddle. It will be observed that the foot staples used on this saddle have smooth sounded corners instead of sharp corners as at present.

The seat, jockey and skirts of this saddle are to be of imitation pigskin. Including stirrups, stirrup straps, coat straps and girth, this saddle weighs 2 lbs. 14 oz. more than the McClellan. This excess will be about neutralized if the hair pad is adopted in place of the present saddle blanket, the latter being about 2 lbs. heavier than the former.

Felt Pads, Stirrup Loops, Girth, Girth Attachments. Cut No. 2.

Under each side bar and attached thereto by leather pockets, the board has placed a felt pad one-half inch in thickness. These felt pads serve the following purposes: 1. Create friction to help keep the saddle in place without tight cinching.



CUT No. 2.—SERVICE SADDLE.
(Showing girth, girth attachment, girth adjuster and stirrup strap loop.)

2. By cushion effect, assist in relieving the horse from the jolts and jars of the weight of the rider and equipment. 3. Can be cut away at some point or points and built up at others by inserting any appropriate and convenient material between the pad and the bar, thus facilitating a cure for cuts, wounds or sores while on the march. The pad is sufficiently inexpensive to warrant this. 4. Gives the saddle a certain degree of longitudinal adjustability by equalizing small irregularities and by reason of the possibility of cutting away and filling in when extremes of longitudinal conformation are encountered.

These felt pads are not experimental. The cavalry of several nations use them and they have been urgently recommended by officers of our army. Felt is preferable to the leather or cloth covered padding sometimes used, because it is less expensive and easier to keep in good condition and correct form.

In this connection it is instructive to note that the saddle from which General McClellan almost certainly patterned his model, was fitted with cork strips under the side bars so that a certain degree of lateral adjustability or a variety of fits was possible. With regard to the use of these strips of cork, General McClellan remarked "The most important feature of this saddle is the manner of arranging it so that a single size may be used for all horses, or for the same horse when their condition changes." The reason for the apparent omission of these pads in the original design of the McClellan saddle and the neglect of the principle thereafter is not of record.

The photograph shows a stirrup bar of the safety loop pattern. The stirrup loop is placed so that the stirrup will hang in the position which is recommended by our leading instructors in equitation, viz.: Well under the rider.

The convenience of this safety loop as a means of removing the stirrup from the saddle for ordinary purposes is probably a more useful feature than is the provision for safety itself. A special feature is the ring on the end of the safety gate. A thong may be tied into this ring to facilitate opening the gate.

The girth consists of thirty-five strands of cotton, braided, sash cord, olive drab in color, and finished at the ends with two buckles so designed that they carry the cord direct without any

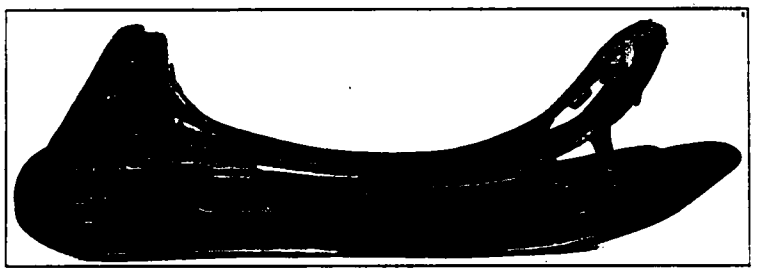
reinforcement or chapes of leather. A swivel buckle in the center of the girth, on the under side, permits the attachment of a strap, by means of which the devices for carrying the rifle and saber are steadied. Three sizes of girths, *i. e.*, 28 in., 32in. and 36 in., were recommended. This girth holds well, is cool and soft to the horse, and will cost less than the present issue. Experienced dealers and manufacturers state that the trade demand is proof to them that cotton cord is preferable to linen cord.

The girth straps are also shown in Cut No. 2; the front strap attached to the loop on the front hinge, the rear strap attached to the frame itself. The two straps pass through the loops of a leather flap, or girth, adjuster which bears small metal studs by means of which the straps may be fixed at certain points. This permits the girth being adjusted to horses with different shapes of barrel and will also allow the saddle to be moved forward or back as may be necessary. In other words the girth can be carried to the front or rear as desired. This principle was tried out on a number of saddles on a march of 500 miles and gave excellent results. This device appears in a less satisfactory form on the latest model of British army saddle with adjustable bars.

The present quarter strap method of attaching the saddle to the horse unnecessarily constricts his body. The backbone is an elastic column and in proportion as this elasticity is interferred with so is there interference with the horse's balance as he carries his load, and a decrease in the freedom and strength of his strides and leaps as he takes the increased gaits. The quarter strap as attached to the McClellan saddle conveys the grip of the girth to points which are too widely separated and thus encases the horse in a straight jacket which seriously counteracts the elasticity of the backbone by interfering with the horizontal and vertical movements of the elements thereof. To remedy this the Board decided to materially lessen the distance between the points of attachment of the girth straps. This feature is apparent in the photograph.

The Tree.—Cut No. 3.

To carry the seat of this saddle, the Board designed a flanged steel frame, formed by dies to insure economy in manufacture; with a cross section throughout the frame that gives the maximum of strength with a minimum of metal. This metal frame is attached to the wood side bars and is supported by four metal hinges, the two in rear having projecting loops for the sustaining straps of the rifle and saber carriers while the two in front have similar loops for the front girth straps. The hinges are a simplified and strengthened pattern of a type which the Board tried out very thoroughly without developing any structural weakness. The shape of the frame and the height of the hinge are designed to give the necessary clearance



CUT NO. 3.—SERVICE SADDLE TREE.
(Frame of steel with wooden side bars attached by hinges.

above the horse's back without raising the rider further from the horse than is advocated by the best instructors in equitation. The pommel arch, while lower exteriorly than that of the McClellan saddle, is noticeably higher interiorly. It is also of good width thus allowing ample space for the accommodation of the horse's withers.

The metals used in the frame are as follows: The frame proper, flanged steel, copper plated bronze finished; the hinges and their loops, cast bronze, copper plated and bronze finished; the cantle roll support, (see photograph No. 13) sheet brass and steel; girth strap loops, cast bronze, copper plated and bronze finished; stirrup loops drop forged steel, bronze finished; all foot staples cast bronze, bronze finished.

The side bars are to be of clear straight grained, thoroughly seasoned bass-wood. In finishing, the side bars are dipped in raw linseed oil and then given one coat each of orange shellac varnish and spar varnish.

The shape of the side bar was decided upon after a study of plaster casts taken from the backs of live horses, together with an examination of the best features of certain foreign side bars. The length of these side bars is sufficiently great to utilize all the available bearing surface of the horse's back longitudinally. The width of the side bars is such as to best utilize the lateral supporting surface of the back, without approaching too close to the backbone and without interfering with the rider's seat. The interval between the side bars is sufficiently wide to avoid a pressure that would restrict the free movement of the horse's vertebræ at any point.

Adjustability.

Each side bar turns freely on the axis formed by its hinge centers, being checked in its rotation by contact with the steel frame. Thus if the stripped tree is placed on the ground the side bars will rotate to a horizontal plane. So also if the stripped tree is raised and pressure applied on the outside of the bar, it will turn inwardly very close to the vertical, *i. e.*, until it comes in contact with the frame. Thus when the saddle is placed upon the horse's back, the side bars take the same slope as that of the horse's back. There are no pins or screws to hold the side bars at any given angle. All the weight in the seat of the saddle is transmitted to the bars through the hinges. The pull of the girth, of the stirrups, and of the rifle and saber as well as the bearing of the skirts is likewise transmitted either through the hinges or along a line coincident with the axis thereof. This arrangement permits the bars to conform freely to the horse's back.

The lateral adjustability of this tree, as developed along the lines above discussed, has three great advantages, *i. e.:* 1. It will fit any saddle horse, in so far as his lateral proportions are concerned, unless his back be positively deformed. It will be capable, therefore, of almost universal use, though issued in but one size, whereas rigid saddles obtainable in several sizes still fail to fit many horses. 2. It will continue to fit the back of any one horse when he changes in flesh, as he will with variation in degree of work and condition of nourishment. 3. When, in saddling, the girth is drawn into place the side bars of this saddle move automatically on their hinges, into a position corresponding to the lateral slope of the horse's back. This keeps the saddle perfectly in position and at the same time a degree of motion is permitted the side bars which makes the saddle an elastic burden for the horse, instead of a rigid box or a straight jacket. While this degree of motion is imperceptible to the rider in so far as any movement of his body is concerned, it is a comforting accommodation to the bony and muscular structure of the horse.

The Board is not aware of any well founded disadvantages pertaining to this tree. Structurally it is as strong as necessary, including the hinges and all other parts. Some have claimed that a horse under adverse conditions will lose flesh at the withers in greater proportion than he will along the back where the cantle ends of the side bars rest, and that this will interfere with the fit of the bars, probably producing serious results. The answer is that this has not happened during the Board's very considerable course of experimentation, nor has it happened apparently during the British government's successful tests of 400 trees identical in principle with this one. Furthermore, the premises as to disproportionate loss of flesh, above alleged, are in the nature of suppositions and would, in any event, convey more serious results in the case of the ordinary rigid saddle than they would with an adjustable tree.

After the British test of 400 saddles, almost identical with this one mechanically, it was authoritatively stated that "this saddle was the best ever issued, in every respect, in the British Army."

Coat Straps.

These are broader and stronger than those now issued and are of the double buckle pattern on the pommel and the single buckle on the cantle. The double buckle strap permits the separate carriage of two distinct packages in one roll. This feature is noticeable in the photograph of the pack saddle. (Cut No. 13.)

Cost of the Saddle.

The McClellan saddle, complete for cavalry, *i. e.*, one tree, sheep skin lined and leather covered, with stirrups, stir-

CUT No. 4.—OFFICER'S SADDLE.

rup straps, cincha and coat straps, is listed in the Ordnance Price List, Revised March 1, 1910, at $22.40.

The proposed saddle, with the same components as listed above will cost approximately $21.00, a small saving as compared with the McClellan saddle. The price of the proposed saddle, above stated, is based upon an estimate which was made after careful consideration of the material determined upon and the method of manufacture contemplated

OFFICER'S SADDLE.

Cut No. 4.

This saddle is identical in principle with the service saddle heretofore described and differs from the latter only in the shape of the seat, which is flatter and longer, the shape of the pommel which is slightly cut back, the finish and design of certain minor metal parts and in the use of pigskin in the seat of the saddle. The skirt and jockies are to be imitation pig skin. The stirrups are the same as those on the service saddle, but they are of the bright finish instead of the sanded oxidized dark finish.

The shape of the seat and the hang of the stirrups were determined upon after consultation with Captain W. C. Short, Captain Guy V. Henry, and other instructors in the Mounted Service School. In addition to the features of the seat which were deemed correct by the members of the Board and by the officers consulted, certain advantages pertaining to several foreign saddles of the flatter type, were incorporated.

The estimated cost of this saddle, including stirrups, stirrup straps, coat straps and girth is about $25.00.

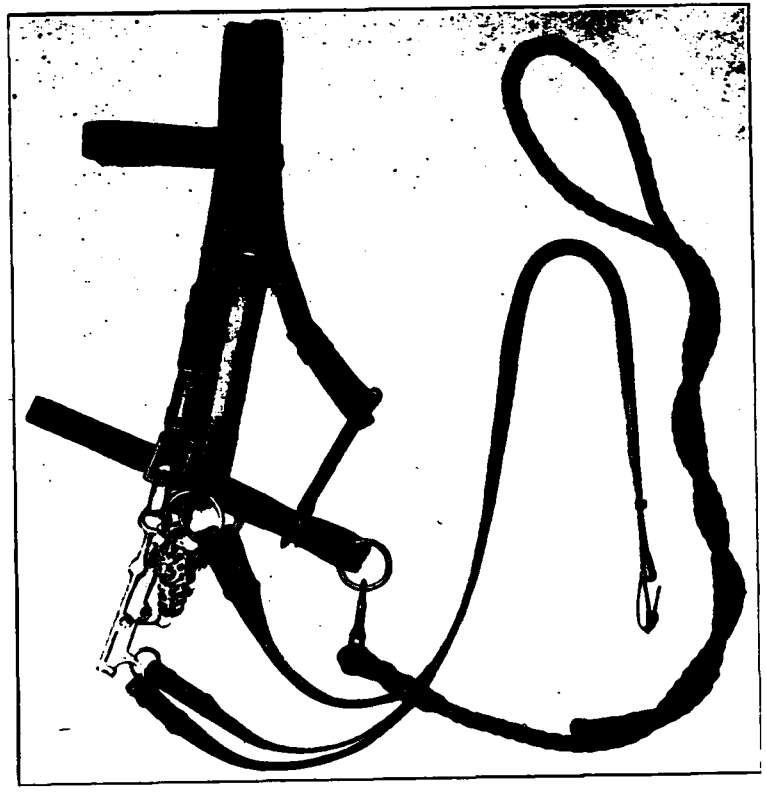
THE BRIDLE.

Cut No. 5.

The proposed bridle is of the combination halter-bridle type and is intended to supplant the present bridle, halter and watering bridle. It weighs complete, five pounds and four ounces, while the articles which it is intedned to supplant weigh eight pounds and eleven ounces. The bit and bridoon make this bridle suitable for the refinements of horse training and horse control, while at the same time the arrangement and attachment of the bits are such that it can be used with the curb bit only or with the snaffle only when so desired. The

bits are readily removed when unbridling, or for watering and grazing purposes, and are as readily replaced.

Other features of this bridle may be summarized as follows: 1. Headstall permitting ready adjustment to secure good fit for heads of different sizes. 2. Noseband transferring pull on



CUT NO. 5.—THE HALTER BRIDLE.

halter rope to horse's nose with consequent pinching effect. 3. Bit and bridoon straps permitting adjustment of bits to correct position for different sizes of head and allowing bit and bridoon to be readily attached and detached. 4. Reins lighter and more pliable than at present, with buckle on bridoon rein and sliding loop on bit rein. Bridoon rein heavier and larger

than bit rein and having end expanded to keep it in the buckle loop more securely. 5. Bit and bridoon of non-corrosive metal and the same in all respects as models of 1909, except that the branches of the bit are increased slightly in thickness at the mouthpiece, tapering from this point to the ends of the upper and lower branches so as to preserve present form. This additional strength is deemed necessary. 6. Curb chain increased in strength to approximately 1,500 pounds pull and made in single mesh instead of double as at present. Chain permanently attached to bit on the off side. Hook on near side only. This will prevent the numerous losses of chains now observed in the service. 7. All buckles have rounded corners and are as small as practicable. Studs substituted for buckles in attaching reins and bridoon straps to bits. 8. Halter tie of black rope and attached to halter by snap hook. Length over all 100 inches. A paraffin treatment gives pliability and water proof quality.

The black rope halter tie is more serviceable, possesses greater strength and presents a better appearance than a leather tie. The length of 100 inches is advantageous and, furthermore, is necessary in order that the free end may be fastened around the horse's neck and secured near the breast with a roll and stop instead of being tied to the saddle, a method rendered impracticable by the position of the pommel pockets on the new saddle. It is not feasible to provide leather halter staps of this length without splicing. Halter ropes can be reblacked, when necessary by troops.

The link is omitted because it is unnecessary. When troops dismount to fight on foot, horses should be linked by passing bridoon rein through the halter ring of the adjacent horse and securing it by slip knot as now authorized by Cavalry Drill Regulations.

Small detachments of two to ten men, and larger bodies at times, can secure their horses advantageously by "coupling" them, as this eliminates the necessity of horse holders. (Photograph No. 16). The horses can only circle around when their heads are thus tied by the reins, using a slip knot and securing to far side of cantel of the other troopers saddle.

While this bridle is intended to be used as a halter in the field, it is not to be so used in the stable and corrals in garrison, but should be kept by the trooper, to whom issued, with the rest of his equipment. A web stable-halter has been provided for stable and corral use in garrison. The halter-bridle can thus be kept very presentable and one of the objections to the present halter eliminated.

All the various objections which are urged, by some, against the bit and bridoon, the double rein, and the halter bridle combination were investigated and very carefully weighed by the Board before arriving at a decision to adopt the halter-bridle here presented.

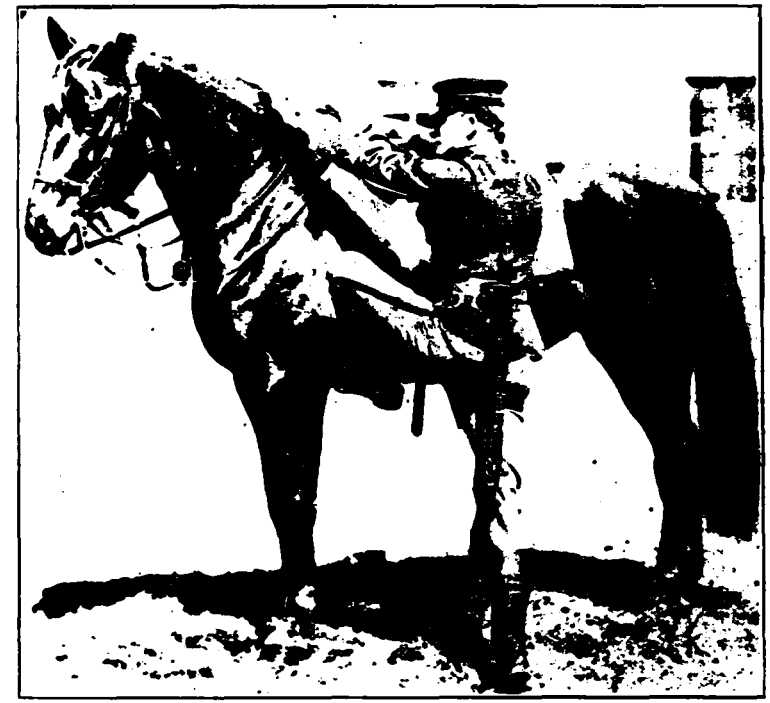
THE RIFLE CARRIER.

Cuts No. 6 and 12.

It will be observed that when the trooper is mounted, Cut No. 12, the butt of his rifle rests in a boot on the rear side; this boot being of leather and attached to the saddle by a strap which passes through a metal loop which is a part of the near cantle hinge. The weight of the rifle is supported by this boot, not by the soldier. A thick felt pad in the bottom of the boot helps to dissipate the jar of the rifle and two flat side-springs grasp the stock sufficiently to keep it from jumping up and down in the boot. The boot can be raised or lowered when necessary to obtain the proper adjustment for men and horses of different size and conformation. The boot is kept from shifting and flopping by a strap device which buckles into the girth. The breech mechanism of the rifle is kept from rubbing the corona or pad by the standing part of the carrier.

From the trooper's belt—Cut 6, projects a leather lined steel ring through which the muzzle of the rifle passes, the latter being thus checked in its lateral motion or wobbling at this point. The ring is collapsible and can be folded down flat against the trooper's body when not in use. The leather lining of the ring protects the hand guard of the rifle from injury, being aided in its function by a leather stock cover which also causes the rifle to play smoothly up and down through the ring. This stock cover does not interfere with aiming nor has it any other disadvantages. It is readily removed if so desired.

From the lower edge of the cartridge belt, under the ring, a leather strap passes downward, terminating in a snap which engaged the trigger guard. This strap supports the rifle when the trooper is dismounted; the ring, above mentioned, keeping the piece nearly vertical. (Photograph 6.) By this method of carrying the rifle mounted, the piece is so secure and undisturbed in its position that one at first has the sensation that his rifle has disappeared, and turns to assure himself that it is still there. In mounting and dismounting the trooper practically disregards his rifle. It follows his movements.



CUT NO. 6.—PREPARE TO MOUNT.

As shown in Cut No. 6, at "Prepare to Mount," the trooper with the new rifle carrier simply steps back and assumes the position now prescribed, paying no attention to his rifle. At

"Mount," the trooper rises to his saddle and the rifle follows him. As he settles himself in the saddle, he grasps his rifle with the left hand just above the bolt and inserts the butt into the boot, possibly carrying back the left foot at times to steady the boot. At "Prepare to Dismount," the trooper, with his left hand, grasps the rifle just above the bolt and with a sharp pull lifts the rifle out of the boot. He then dismounts, as now prescribed except that, after his right leg clears the horse, he places his right foot against his left foot standing momentarily with his left foot still in the stirrup. After hesitating slightly in this position, it will be found that the rifle has steadied itself by the trooper's side and does not flop or bang about, as the trooper descends to the ground.

This method involves no loss of time as compared with the present system of pulling the rifle out of the boot after dismounting and reversing this process before mounting, while it is decidedly superior in that the trooper has his rifle with him at all times, no matter how suddenly or unexpectedly he may be separated from his horse. It also removes the rifle from under the trooper's leg where the large bunch makes good riding very difficult. Furthermore, it is believed that the proposed method will considerably reduce the number of sore backs which are now attributed, by many, to the wobbling and jumping of the rifle as now carried. Under the most favorable circumstances the present rifle scabbard permits the rifle to sway and bang about most objectionably. There is nothing about the new carrier which will injure either the front or rear sight or the sight cover.

Experience with the proposed method has shown that the soldier can walk about and do various sorts of work while still carrying the rifle attached to his person. By this it is not meant that he will march any distance with the rifle thus attached, but he can saddle and unsaddle, move about the horse, carry water or forage short distances, etc.

With this method of carrying the rifle, the position of "advance rifle" can not readily be taken. This position is not deemed important as our troopers are not instructed to fire from the saddle.

This rifle carrier includes a safety device which will operate in case the trooper falls off in a limp condition to the near side; for instance, when wounded or stunned. It has been found in

CUT NO. 7.—TROOPER MOUNTED.
(Showing saber and saber carrier.)

practice and is apparent from the photograph that when the trooper falls from his horse in any other direction or under other circmstances, as when a horse is bucking, the upward course of the trooper's body will pull the rifle out of the boot.

THE SABER.

Cuts No. 7 and 8.

The saber designed by the Board is a cut and thrust weapon, being about thirty-eight inches long, over all, and weighing two pounds. While the opinions of experts in dismounted fencing were considered it was borne in mind that a cavalryman's saber was desired. In endeavoring to produce a saber well adapted to both cutting and thrusting, the Board combined the best qualities found in sabers especially designed for cutting and other sabers especially designed for thrusting. The point of the blade is on the median element thereof, thus favoring accuracy in thrusting, and the blade for some distance back from the

CUT NO. 8.—SABER AND SCABBARD.

point is double edged in order to facilitate penetration. It was recommended that this saber be issued sharp and kept in that condition. The steel guard is dark finished, presents and unbroken surface to cuts and thrusts and gives ample protection. The grip is of wood, shaped to the closed hand and covered with shark skin wired down.

This saber is a service weapon and it was recommended that paragraph 1544 A. R., 1910, be amended so that this saber and its scabbard can be drawn by officers from stores as is now the case with the rifle, revolver, etc. It was also recommended that the present officer's saber and scabbard be retained for use in garrison.

Recently, items have appeared in service periodicals mentioning a new saber developed by the Ordnance Department. Inasmuch as the Board's model of saber was worked on by the Ordnance Department for almost two years, it is supposed that the saber recently mentioned in service periodicals is the one recommended by the Board or a slight modification thereof as it is not thought that the Ordnance Department has designed and produced an entirely new saber within the comparatively few weeks which have elapsed since the Board's model was produced.

The Saber Scabbard.—Cuts No. 7 and 8.

The saber scabbard is of wood treated with oil and covered first with raw hide and then with waterproofed olive drab canvas, this canvas covering being woven after the manner of hosepipe covering, the seam being thereby eliminated with consequent gain in wearing quality and appearance. The mouth of the saber scabbard is a dark finished, bell shaped, metal funnel, the opening being two and one-half inches by one and three-eighth inches inside measurement. The opening in the mouth of the present service saber scabbard is one and one-fourth by one-half inches. The increased area in the mouth of the scabbard facilitates returning the saber, and the change in shape combined with the dark finish of the metal gives an acceptable appearance. The dark finished metal tip of the scabbard is drawn down and reduced so that it forms a point which fits into the grommets of the shelter half, the intention being to dispense with the shelter half pole and to use the saber in its scabbard, guard down, as a substitute for the pole.

The Saber Carrier.—Cut No 7.

With a view to removing the saber from its present objectionable position under the trooper's leg in order also to partially counterbalance the weight of the rifle, the Board arranged to suspend the saber carrier from a loop on the offside cantle hinge corresponding to the point of suspension of the rifle carrier on the near side. The saber hangs in two leather loops which are swivel attached to the base-piece of the carrier and permit motion forward and backward in a vertical plane with-

out lateral sway or wobbling. This device permits the saber to swing back easily should its lower tip strike, for instance when a horse takes a jump, and likewise the saber will swing to the front should it be struck by a passing trooper or horse coming from the rear. A stop on the swivel prevents the saber from turning so far that it will fall out of the scabbard.

This saber carrier can be raised or lowered on the horse's side and in this way made adjustable to horses of different height and conformation of girth. At its lower end it buckels into the carrier strap which connects with the rifle carrier on the near side and by its attachment to the girth steadies both rifle and saber carriers. When the rifle carrier is not worn the saber carrier buckles directly to the girth.

Photograph No. 7 shows the saber carrier used in combination with the intrenching tool carrier which is the shovel-shaped pouch seen under the saber scabbard. The picket pin is also shown in this photograph strapped to the outside of the saber scabbard.

By suspending the saber from the cantle on the offside it is nearer the trooper's right hand and can be more readily drawn. It can also be more effectively drawn, with practice, because there need be no disturbance of the bridle hand as is now inevitably the case when the saber is drawn.

SWORDSMANSHIP.

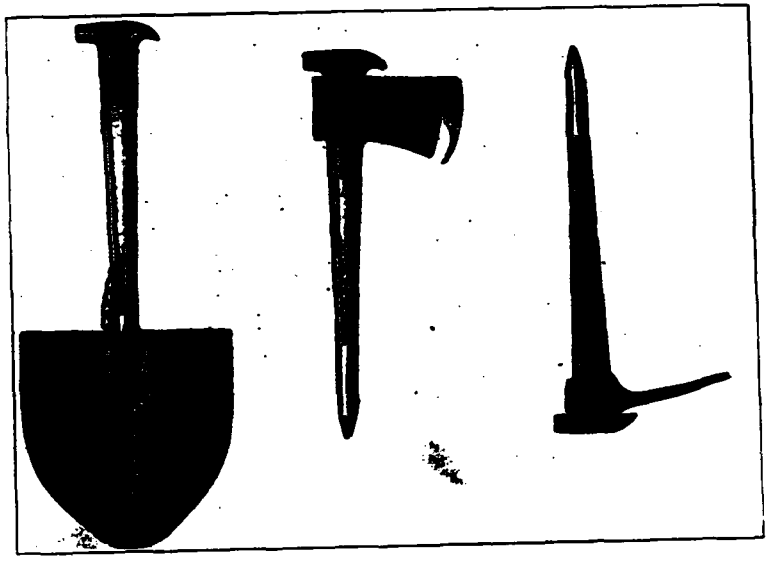
While the Board viewed the proposed saber as a most effective weapon, it also expressed the opinion that an improved saber will be of no great value to our cavalry unless the present condition of instruction in swordsmanship is radically improved. It recomended a scheme by means of which competent instructors can be produced, and suggested that a system of rewards for swordsmanship be established by creating competitions similar to those which now stimulate rifle and pistol practice.

INTRENCHING TOOLS.

Cut No. 9.

After careful consideration of the methods by which American cavalry has gained its greatest successes in the past, and a study of the conditions which will most likely be met in

the future, together with an investigation as to the trend of opinion among other leading nations, the Board took what is deemed by some a radical step, *i. e.*, the recommendation of an individual intrenching tool for cavalry. Photograph No. 9 shows the picket pin assembled as a handle to the shovel, the hatchet and the pick. The shovel weighs one pound, the pick nine ounces, and the hatchet one pound four ounces; an average weight of tool corresponding to the weight of one extra horse-



CUT NO. 9.—INTRENCHING TOOLS ASSEMBLED.
(With picket pin for handle.)

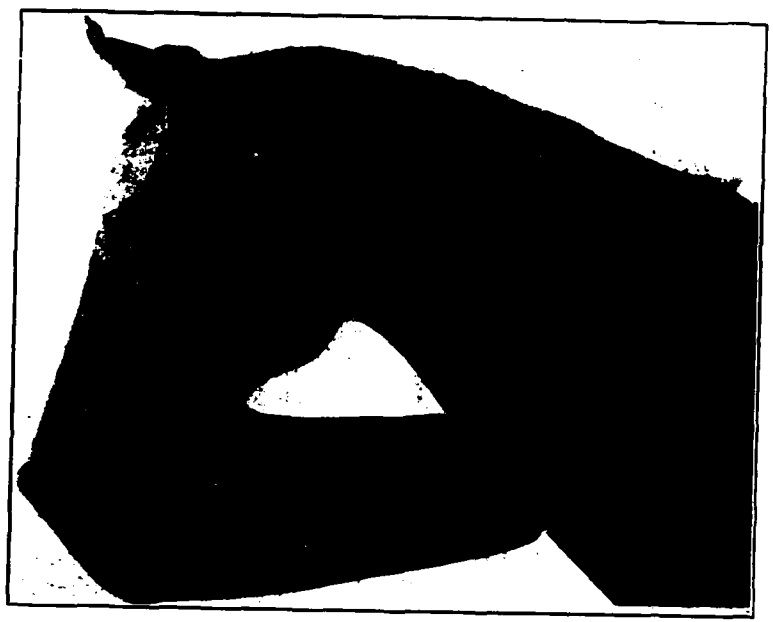
shoe; the Board's recommendation being to carry one extra horseshoe instead of two as at present. This weight is carried on the offside at such a point that it aids in counterbalancing the weight of the rifle. The proposed distribution of the tools is one hatchet to each duty sergeant and three shovels to one pick proportionately throughout the remainder of the troop.

To intrench will be nothing new in the history of the American cavalry; many such instances occurred during the Civil War and later on the plains. In Europe, where a few years

ago even dismounted action by cavalry was held in little favor, rifle fire and individual intrenching tools are now receiving serious consideration.

Intrenching Tool Carrier.—Cut No 7.

This carrier is a stiff, shovel-shaped leather pouch which hangs from the offside of the saddle, being attached to and fitting snugly under the saber carrier. It is detachable and need not be carried should occasion dictate its omission. A pocket in the outer half accommodates the shovel, the pick or the hatchet.



CUT NO. 10.—FEED BAG.

A pocket on the horse side of the pouch accommodates the extra horseshoe and also contains a small leather case carrying ten non-corrosive horseshoe nails. The pouch is securely closed by a flap.

THE FEED BAG.

Cut No. 10.

The old issue nose bag is an expensive article because it permits the horse to waste considerable grain and it wears out

quickly. The waste of grain is also objectionable because the horse is deprived of just that much nourishment and frequently worries and frets and tosses his head in an effort to get at the grain. Insufficient ventilation is another objection to the old nose bag.

The feed bag recommended by the Board, is a canvas cylinder open at one end, but arranged on the horse with its long axis nearly horizontal instead of nearly vertical as is the old nose bag. This spreads the grain over a greater area in the bag and permits the horse's nostrils to have free access to the air. By a strap fastened over the head, the front end is suspended just under the horse's mouth, while a strap passing over the horse's neck brings the rear end of the bag against the neck higher than the front end. The horse simply stands still and eats, the grain gradually shifting to the lowest point. The horse soon realizes that his grain is accessible and becomes comfortable.

When occasion demands, eight to ten pounds of oats can be carried in the feed bag in the shape of a roll on the pommel, but for greater security and convenience an insert sack, called the grain sack, has been made. Photographs 11, 12 and 13 show the feed bag, with its insert grain sack, used as a grain roll on the pommel. The insert grain sack is an elongated cylinder to be made of light unbleached sheeting or of burlap and of dimensions permitting its insertion, full of grain, into the feed bag. Its open end can be securely closed by a cord which is conveniently attached and it is fitted with another cord by means of which the grain can be divided into two parts. It will contain eight pounds ordinarily, but its capacity can be stretched to ten or twelve pounds, depending upon the bulk of the grain. While it is intended as an insert to the feed bag, this latter article can be arranged as heretofore mentioned so that it will carry grain without the insert sack. It will then be possible, if necessity demands, to carry both these sacks filled with grain, one on the cantle and one on the pommel, thus doubling the supply.

The proposed feed bag makes a good water bucket when such an article is required: thus the trooper even when alone is never without facility for watering his horse as long as the

trooper himself can get down to the water hole or other point inaccessible to the horse.

THE NORMAL EQUIPMENT.

Cuts 11 and 12.

This is the equipment recommended for troops when they are accompanied by field trains, viz.; on ordinary practice

CUT NO. 11.—NORMAL EQUIPMENT.
(Showing rifle carrier on near side—saber projecting below on off side—grain on pommel and rain coat on the cantle.)

marches in time of peace and for certain service in time of war. Its weight is seventeen pounds less than the full equipment which is now prescribed for the occasions above mentioned: to be exact, the total weight of all the articles of the Normal Equipment—calculating the weight of the trooper, stripped. at 150 pounds, is 245 pounds and 7 ounces.

CUT NO. 12.—PACKED SADDLE WITH NORMAL EQUIPMENT.

The photograph shows the feed bag, carrying three pounds of grain—noon feeding—on the pommel just above the pommel pockets. These pommel pockets contain the canteen, cup, wire cutters, meat can, knife, fork, spoon, (these articles of the mess kit are enclosed in a canvas pouch which can be removed and washed) horse brush, curry comb, grooming cloth, four ounce can of leather oil, 2 oz. tin of saddle soap, and in winter time ice

calks and extractor; a separate pouch in the pommel pocket also holds a cooling strap which is a substitute for the surcingle. Another compartment will hold the trooper's pipe, tobacco, etc. On the cantle we see the rain coat and lariat. The following articles will be carried in the field train: rations, bed blanket and shelter tent, including the toilet and other articles prescribed for the cantle roll.

FULL EQUIPMENT.

Cut No. 13.

This equipment is intended for use when the troops are on active service and are separated entirely from the field

CUT No. 13.—SADDLE PACKED WITH FULL EQUIPMENT.
(Viewed from above.)

train. It includes all articles prescribed by the Field Service Regulations for all situations.

The photograph shows the full equipment viewed from above. The rain coat is seen strapped in front of and tight up against the grain roll and the pommel pockets. The shelter half is carried on the cantle together with the lariat. Here may be seen in the photograph the cantle roll support previously mentioned. The bed blanket is under the saddle and on top of the saddle pad. Considerable experience has shown that the bed blanket may be caried here without becoming soiled or otherwise rendered objectionable to the trooper.

While the present cavalry pack has served its purpose fairly well, a desire for improvement has long been in evidence, and various rearrangements have been tried out from time to time. However, no combination of the articles of equipment now issued has satisfactorily overcome all the defects of the present pack which are chiefly: 1. Lack of compact and tight assemblage, resulting in flopping, rattling and looseness of parts. 2. Lack o proper weight balance along lateral, longitudinal and vertical lines: the lateral misbalance, probably contributing to sores at the pommel and cantle end of the saddle while the longitudinal and vertical misbalances interfere with the horse's stability in leaping and running. 3. Too heavy, not only as to certain artic es themselves but too many articles carried on the horse's back on many occasions when they ought for economy and efficiency be carried in the wagon train. 4. No proper provision for carrying an ample reserve of grain—well balanced on the saddle. 5. No proper provision for carrying rations, mess kit, etc., dismounted when the trooper is required to leave his horse for an appreciable period. 6. Unnecessarily crude in appearance, a man of experience has remarked, with reason, "a trooper with the present full packed saddle looks like a prospector in the early days."

The articles of the proposed equipment have been developed with a view to packing properly on the saddle, as well as serving their separate purposes. It will be seen from an examination of the photographs that there are no loose parts of the proposed pack, Normal or Full, to flop or rattle. Pommel and cantle packs are tightly strapped Canteen and cup are

stowed away in pommel pockets. The lariat and picket pin are secured out of the way.

The proposed pack as contrasted with the present, brings the center of the pack weight nearer the center of gravity and the center of motion, by reducing the weight proportionately on both pommel and cantle, and increasing the seat load. In addition to this longitudinal correction of balance, a lateral concentration of weight has been effected by placing more weight proportionately along the center line and reducing it along the sides.

The center of gravity has been lowered and weight and bulk effectively distributed by taking the bed blanket out of the cantle roll and placing it under the saddle. It is protected from the sweat of the horse and of the rider's legs by the corona or saddle pad and the saddle skirts respectively. Enlisted men who have tried it state with few exceptions, that they prefer the blanket under the saddle rather than in the cantle roll.

The weight of all the articles of the trooper's equipment as proposed by this Board in the Full Equipment, (262 pounds, 3 ounces, allowing 150 pounds for the trooper stripped) is but eight ounces less than the weight of all the articles of the trooper's equipment as now authorized, but the new equipment includes the following separate additional essentials with their added efficiency: *i. e.*, intrenching tool 1 pound, 1 ounce; picket pin case, 4 ounces; wire cutter, 12 ounces; oil for leather, 5 ounces; saddle soap 2 ounces; grain sack, 3 ounces; bandoleer, 1 pound, 5 ounces (the issued bandloeer is not serviceable for cavalry); bayonet, 14 ounces; (total 4 pounds, 14 ounces.)

Bearing in mind the great importance of the above mentioned articles to the cavalry service, their total weight, 4 pounds, 14 ounces, seems entirely justified. In designing the various articles of the equipment an earnerst effort was made to reduce the weight but it was the Board's experience that weight cannot be sacrificed if serviceability is to be expected.

It is not practicable to further reduce the weight of the articles which form the trooper's full pack, if efficiency and durability are to be maintained. It is practicable, however,

to place a part of the pack in the wagon on many occasions. There is sufficient room in the wagon if it is properly loaded. Every effort should be made to preserve the trooper's horse as a charger instead of wasting him as a freighter.

FULL EQUIPMENT, DISMOUNTED.

Cut No. 14.

This equipment is contemplated only for occasions when the trooper dismounts with the expectation of going into action

CUT NO. 14.—DISMOUNTED TROOPER WITH FULL EQUIPMENT.

for a period of several days or when he is actually serving as infantry. It is intended for only such unusual service. The ration bags are taken off the saddle and assembled into a knapsack, the meat can, knife, fork and spoon being placed in the rear compartment thereof. The canteen is transferred from the pommel pocket to the belt, hanging therefrom at the right rear just behind the pistol. The intrenching tool, having

been taken from its carrier and assembled to the picket pin handle, is carried suspended from the belt at the left side. The blanket, with or without shelter tent and other contents of the cantle roll as occasion may dictate, is rolled and placed contiguous to the top and sides of the knapsack with its ends drawn against the same. The bandoleer is worn under the knapsack. This full equipment, dismounted, weighs, including the clothing on the trooper's person, fifty-six pounds nine ounces. Before going into action, however, the cavalryman, serving as infantry, would further reduce this equipment to a fighting equipment which weighs forty-six pounds, two ounces.

ARMAMENT.

The convening order excepted the rifle and pistol from the Board's consideration, hence no action was taken with regard to the design or style of these weapons. Upon the Board's being asked to express its opinion as to the desirability of discarding the pistol, the majority of the embers expressed themselves as being decidedly in favor of retaining that weapon.

The design of the new saber has already been discussed. As to the question of retaining or discarding the saber, the Board assumed the ground that this weapon is the arm "par excellence" when large bodies of cavalry meet large bodies of cavalry in shock action. While many assert that such encounters will be rare it is foolish to say that they never will occur again. We must, therefore, be equipped properly for the inevitable fight of cavalry against cavalry.

The recommendation of a bayonet for cavalry arouses stout opposition in some quarters and cordial approval in others. A considerable proportion of the opposition is undoubtedly due to the fact that the proposal came several years before people were prepared for it, and at a time when an enthusiasm for mobility, pure and simple, had attained a most commendable momentum. This interest and pride in a maximum mobility is one of the best things that has ever happened to our cavalry and it will be found that those who advocate the bayonet are among the most sincere and persistent champions of the renewed interest in the horse. The two ideas are deemed consistent, not antagonistic. Despite theory, the experience of

the Russo-Japanese War proved that artillery and rifle fire alone will often fail to drive troops from trenches. Only the bayonet will oust them. Our cavalry, by its mobility, in the future as in the past, will find prizes within its grasp but possession can no longer be obtained by fire alone. The bayonet will be necessary.

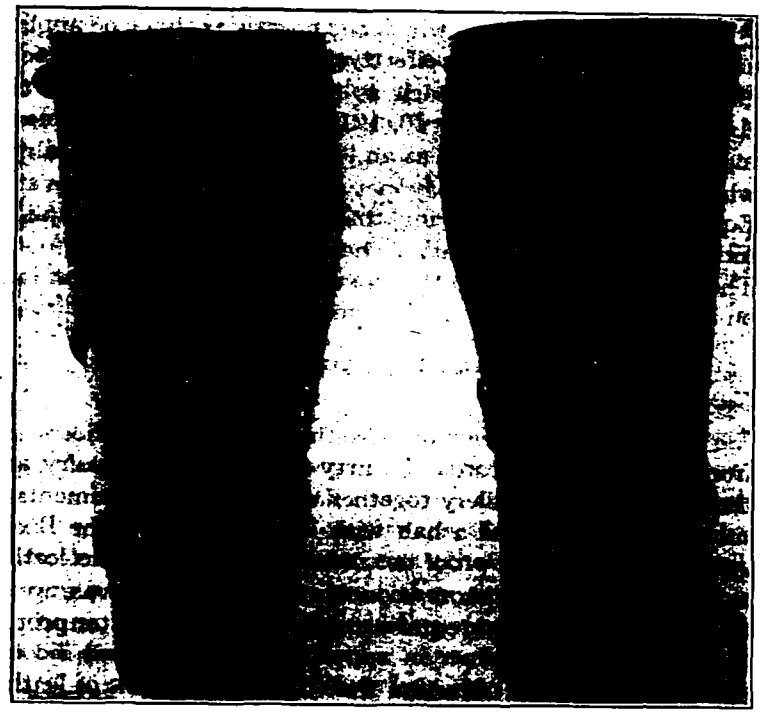
This is a question to which the negative cannot be applied unthinkingly, nor can it be effectively combatted by anonymous and twisted quotations, such as that which appeared in the *Army-Navy Journal*, July 20, 1912. The author of the communication was referred to as an "indignant officer of cavalry" who was opposed to the bayonet and who quoted the Cavalry Equipment Board as saying that "the greatest accomplishments of the American Cavalry have been in scouting on foot." The Board made no such statement. The gentleman was long on indignation and short on information.

LEATHER LEGGINGS.

Cut No. 15.

From the statements of more than 400 cavalry officers and from the clothing records of thirty-five troops of cavalry and three batteries of artillery together with its own experiments of more than a year and a half with leather leggings, the Board gained proof—actual proof not mere opinion—that the leather leggings is decidedly more economical than the canvas, wears longer, less frequently requires replacing, affords better protection and is far handsomer in appearance. The Board did not accept as valid, the objection that the deterioration of leather will render impracticable the storage of a reserve of leather leggings. If a reserve of leather leggings is an absolute essential we should also have a reserve of shoes, saddles, bridles and other articles made chiefly of leather. Such a reserve has not been found impracticable. The leather in the leggings will not deteriorate more rapidly than in the other articles. As a matter of fact the mounted service would be delighted to get this leather legging even though but a few troops and batteries could be outfitted per year. The canvas legging has been well weighed in the balance and found wanting, particularly those issued in years just recently past.

Several reliable firms agreed to make the leather legging at a maximum of $2.00 per pair and of these offers some were as low as $1.55 per pair. The material estimated on is collar-leather and the design permits machine stitching virtually throughout.



CUT NO. 15.—LEATHER CAVALRY LEGGINGS.

OFFICER'S SABER CARRIER.

Cut No. 17.

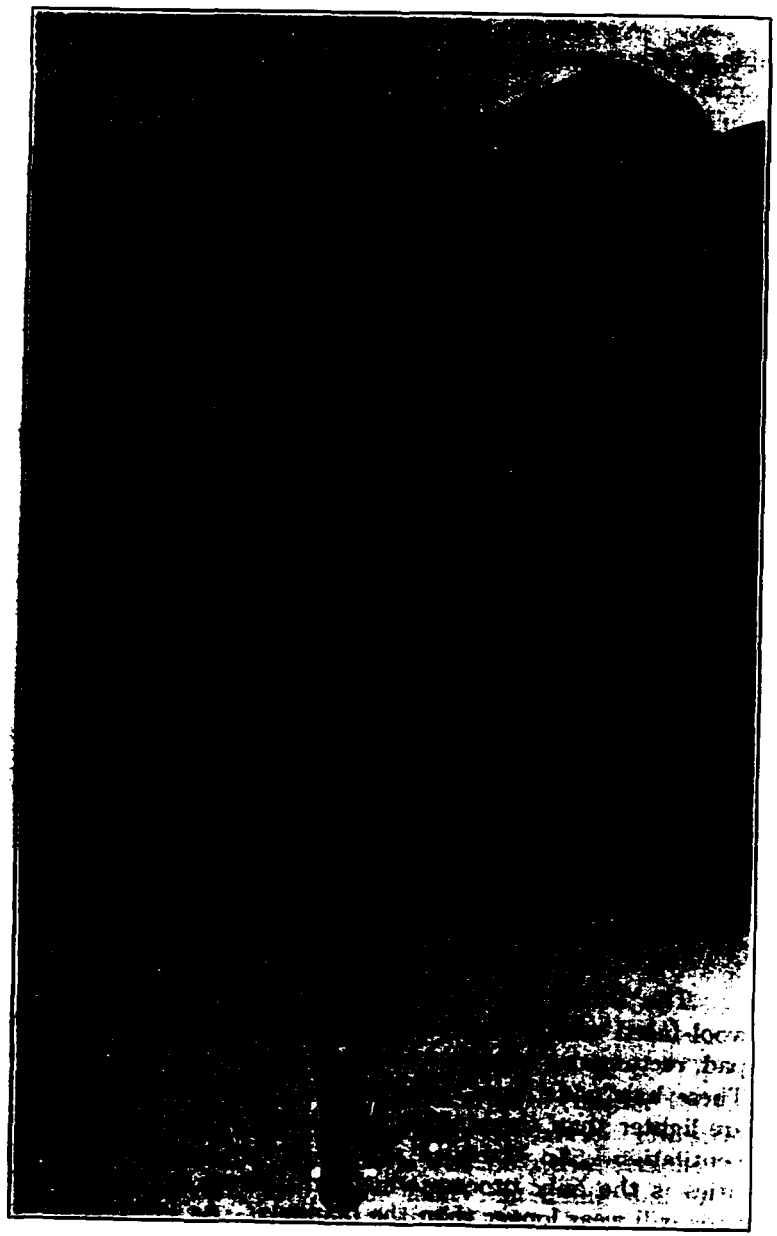
This device resembles the proposed saber carrier for the trooper. Two leather strap loops hold the saber. The strap loops are mounted on a metal frame which is swivel attached to the broad depending strap, the latter extending diagonally from cantle hinge to girth center. A saber of the officer's present type is seen in the carrier, but the strap loops are capable of adjustment to receive the service saber which would be carried in exactly the same manner.

In the photograph—No. 17, there is also seen the officer's hair pad, so shaped that it follows closely the general outline of the bearing surface of the saddle and skirts. The material is horse hair and much is promised in efficiency, durability and appearance.

CUT NO. 16.—HORSES COUPLED.

SERVICE SADDLE PAD.

The Board developed a corona, composed of layers of wool faced with cotton sheeting next the horse; a horse hair pad, rectangular in plan, and a goats hair pad of similar shape. These hair pads have thus far given excellent results. They are lighter than the blanket, cost less and afford much better ventilation. An extended service test of considerable quantities is the only process which will prove whether the hair pads will wear longer than the blankets. As to superior dura-



CUT No. 17.—OFFICER'S SADDLE WITH SABER CARRIER.

bility, however, with the information now available, a professional gambler would probably bet on the hair pads.

GUIDON.

A yellow guidon with black insignia was recommended and the spear head of the staff was changed in design so as to gain strength.

REMARKS.

The abve discussion covers only a portion of the Board's recommendations and it is greatly regretted that time will not permit a description of other interesting and important articles. Some of the equipment recommended has already been adopted but, in the interest of business precaution, in view of the large sum of money involved, the Board recommend that the saddle and its more important appurtenances be given a regular service test for six months or a year before undertaking general issue. If all goes well this test will begin in October, as it is understood that the necessary sets of equipment will be completed by that time.

Reprints and Translations.

CAVALRY IN WAR.*

By Major NICKOLAUS RIEDL, Ninth Austrian Hussar Regiment.

ANY one who has studied the military literature of the past decade will have learned that the general concensus of opinion seems to be that at the present day cavalry may be unable to play a decisive role in battle, considering the improved modern fire-arms and that many renowned writers have expressed the view that cavalry, in consideration of the enormous progress made in fire-arms and aviation, has entirely played out its rôle. Critics are found who even advocate the total abolishment of that branch of the service.

Cavalry officers, on the whole, have shown little inclination in the past to carry on a paper war. Still, in more recent times many efforts have been put forth by cavalry officers to combat these erroneous ideas; and thus what is discussed in the following will hardly be new or original, but rather a compilation of the views of prominent cavalry officers, illustrated by military historical examples.

The first and most important principle in every war is "*to conquer the enemy.*" This principle is as old as the hills, though its application has not always been the same. There were times when war was carried on for one individual's particular object—that ceased in the era of giant armies; and thus the will to conquer received the modification "*conquer quickly.*"

*Translated from *Kavalleristische Monatshefte* by Harry Bell, M. S. E., U. S. Army.

Strategical and tactical measures have to conform to that modification and will have to be employed always in conformity with the principle *viribus unitis* in such manner that all the means at the disposal of the nation, especially all forces of the army, are utilized in strictest conjunction to attain the final success.

EMPLOYMENT OF CAVALRY PRIOR TO BATTLE.

Reconnaissance.

Two armies, engaged in mobilization, are close to each other on the frontier. Concentration is in full swing. Our cavalry closes the frontier and prevents hostile patrols from crossing, which have been sent by their army to reconnoiter our conditions; it endeavors, by similar means, to gain and furnish information concerning the enemy's distribution of forces, progress of his concentration, etc. Balloons and aeroplanes, provided wind and weather conditions are favorable, assist and supplement these endeavors of the cavalry. They will furnish us at least some information concerning the location of the hostile cavalry, the defeat of which must be our first objective in order to gain a free road for our patrols and detachments, for reconnaissance and battle operations of our cavalry.

Thus, large cavalry engagements are to be expected in first line, in which our endeavor must be, by rapid concentration of large forces, to destroy, first, parts and later the entire cavalry of the enemy. This undoubtedly will frequently lead to engagements with fresh, and probably well intrenched hostile infantry and artillery; and to break their resistance it may become necessary sometimes, probably oftener than we may expect, to resort to the dismounted fight in conjunction with our horse artillery and machine guns. Our rapid and far reaching movements will allow us to attack the infantry from all sides and defeat it. These introductory engagements will have a great moral influence, and frequently a tactical influence, in the subsequent battles.

On April 24, 1877, four Cossack regiments, carrying the declaration of war, crossed the Russian frontier and rode via Bolgrad across the Barbon bridge some eighty kilometers to Galatz, captured that city and occupied

the Sereth bridge—so important for the army; they held this position for four days against the attacks of the Turks, until arrival of their own infantry.

On July 5th of the same year General Gurko rode with forty-three and a half squadrons and a few auxiliary detachments from the Danube toward Tirnowa, attacking and capturing that political and strategical place by dismounted Cossacks on July 7th.

In the first day of February, 1900, Lord Roberts sent the newly formed cavalry, division, French, from his zone of concentration (between the Modder and Orange Rivers) for the purpose of relieving Kimberley. On February 15th French encountered the Boer position at Klip Drift; that position was four kilometers in extent and garrisoned by 900 Boers with three guns; he charged and pierced it without difficulty. The road to Kimberly was thus opened.

ATTACK ON THE HOSTILE MAIN BODY.

The introductory actions of the cavalry, for the purpose of defeating the hostile cavalry, of successful reconnaissance and of other strategical import, are followed by the attack on the hostile main body from all sides. The main purposes of reconnaissance which in most cases can be accomplished only through battle, is to ascertain the location and route of approach of the hostile front and flanks in general; to establish and retain connection with our own detached groups, or, in short, to surround the opponent with a circle of smaller or larger reconnaissance detachments, which circle will at the same time serve as a screen for our measures, provided we have first succeeded in gaining the upper hand over the hostile cavalry.

An excellent example of this is furnished by the operations of the Fifth and Sixth Cavalry Divisions, later also by the Guard Cavalry Division of the Prussian Second Army at the commencement of concentration in the Palatinate up to the day of the battle at Vionville and Rézonville.

COMMENCEMENT OF THE BATTLE.

If the cavalry has thus prepared the expected battle, it will have paid well for itself, by having unburdened the infantry from the onerous duties of security and reconnaissance during the march and during rests and having furnished the highest leader material with which to arrive at a clear decision. Thus the infantry can save its powers while marching, can rest tranquilly and can in fresh shape enter the battle which now-a-days may be expected to last for days.

The strategic reconnaissance of the larger cavalry bodies changes automatically into the near reconnaissance, and later on into the battle reconnaissance; cavalry, in the start in front, has now no longer sufficient room and, *pursuant to orders of the commander-in-chief*, takes station at points from where it is to participate in the decision. Errors committed in this regard can never, or at least only with great diffculty, be rectified. The gravest error in this regard is to insert the main body of the cavalry between the infantry.

For its operations cavalry requires freedom of movement. Consequently its proper location is on the wings, or if our advance is made in several columns or groups, at those points from where it can observe the commencing battle from covered position and from where it can effectively interfere according to necessity.

Napoleon always concentrated his cavalry at the point where he sought the decision. Then he utilized it according to need, either to prepare the success (Wagram, 1809), or to participate in the decision (Borodino, 1812), or to prevent reverses or catastrophes (Aspern, 1809), or to gather the fruits of the victory after decision had fallen (Jena, 1806).

Holding to the maxim that cavalry should always be in front, opportunities will very frequently arise in the introductory battles, at the commencement of a large battle, for cavalry surprises, which may become of decisive import in the further course of the battle.

At Somosierra, November 30, 1808, the main column of the French army, two infantry and almost three cavalry division (10,000 troopers) under personal command of Napoleon, engaged eighteen Spanish battalions which held the steep heights on both sides of the Somosierra Pass, while sixteen Spanish guns were posted across the road in four batteries in such manner that they completely commanded with their case shot the defile.

Naploeon personally reconnoitered with field glasses the hostile position, convinced himself of the fact that the road led through an absolute defile, and then issued orders to the commander of the advance guard cavalry (General Montbrun) to have the Polish Chevauxleger squadron (150 troopers) attack the hostile battery in sight. The intrepid General Montbrun took the liberty of declaring that the charge would be impossible. Napoleon repeated his orders. Lieutenant Colonel Kozietulski started the attack, and after seven or eight minutes (the charge covering more than 2,500 meters) the defile and four batteries were taken by *one* squadron. The losses were nominal considering the success. The French infantry ascended the heights

without encountering any material resistance and lost but 100 men, while the squadron under Kozietulski lost 6 officers, 80 men and 35 horses killed or wounded; but it captured 15 guns, 1 color and 200 prisoners.

This valorous achievement of the Polish cavalry is duplicated by the well known charge of the fifteen squadrons under Colonel Pulz at Custozza, June 24, 1866, on the east wing of the battle about to commence. With a loss of 19 officers, 360 men and 490 horses this division prevented any further participation during the battle of two entire infantry divisions (Bixio and Umberto), approximately 30,000 men.

MOMENTS FOR LAUNCHING CAVALRY CHARGES DURING A BATTLE.

How, when and where masses of cavalry or smaller cavalry groups shall be inserted during a battle depends on the qua'ity of th · cavalry, on chance, on luck, and primarily on the ability of the leader. No hard and fast rules can be laid down for it. The battle of Liao Yan, to cite a modern example, offered more than one opportunity for efficient cavalry leaders.

I will here call attention to the fact that the general opinion is that *frontal* attacks by cavalry in open terrain, precluding surprises against unshaken infantry and artillery is folly and should be resorted to and carried out only in extreme cases. Even Seydlitz resorted to such an attack only once, at Zorndorf (1758), where, in spite of victory, he lost more than 1,300 men, or twenty-one per cent.

On the other hand, the effect of modern fire-arms makes itself felt directly only on the limited zone of the battlefield, but not in the extended zone of the modern battle. In the latter, therefore, cavalry which is imbued with the true cavalry spirit will always find well paying objects for attack.

Out of a mass of examples I shall here only cite Colonel Edelsheim's charge at Magenta (1859), the battles of the Reserve Cavalry Divisions Holstein and Coudenhove at Königgrätz (1866), the charges of the Brigades Bredow and Barby and those of Colonel v. Schmidt at Vionville (1870), and the audacious charge of Bechtolsheim at Custozza (1866).

Considering the enormous extension of modern battlefields it will hardly be probable that a decision can be arrived at at only one point of the field. Defeat at one point of an extended battlefield will no longer effect the whole as heretofore, as for instance at Gravelotte or Königgrätz. Therefore all arms must asist with combined forces in the decision and must carry the defeat of the enemy, from the point where he was

beaten, to those parts of his force which still hold their ground. Cavalry is especially suited for this on account of its mobility, of course, with proper assistance of artillery and later on by the infantry after it has regained its breath.

One arm alone will never achieve the decision in a modern battle. Infantry alone will hardly be able to thoroughly beat the enemy by itself, and it is just as impossible for cavalry to beat an equal opponent unaided. In any case, cavalry must do its *full* duty wherever inserted, either in the decisive battle or in the pursuit. "The work of cavalry is not one of mercy or compassion." (Prince Frederick Charles.)

A model for all times to come will always be the working together of all arms under Napoleon as well as under Archduke Charles in the battle of Wagram; of the Germans in the battle of Vionville and of the Austrians in the battle of Custozza.

Saving the cavalry until the close of the battle, to have it ready for the pursuit, would be a wrong speculation. Fleeing infantry can be pursued at the trot. The fleeing enemy is more played out than our horses in all probability.

Had the six Austrian strong cavalry divisions been ordered to interfere during the decisive battles for the Swiep forest at Königgrätz (1866) *no one* can tell what the outcome would have been that day. Only *after* the decision had fallen, the Austrian infantry was saved from annihilation by the interference of the First and Third Reserve Cavalry Divisions in the center and by the First Light Cavalry Division (Edelsheim) on the south wing, the latter division resorting to dismounted fire fight. The Reserve Cavalry Divisions Coudenhove and Holstein lost in this 72 officers, 1,260 men and 1,900 horses. The brigade Bredow lost at Vionville 16 officers, 370 men and 400 horses and succeeded not only in saving its own infantry, but assisted greatly in the decisive victory.

Cavalry must be in readiness for immediate action not only to independently utilize every favorable opportunity offering itself for surprising the enemy, but mainly to help its own infantry and artillery over crises. Then, of course, no sacrifice is too great. Why should there be such a hesitancy to offer up our cavalry? There are many opportunities for battle and activity between sacrifice and inactivity. Prince Frederick Charles said that cavalry is too costly to *not* utilize

it. We must demand the impossible of this arm of the service, because otherwise it would be only a costly luxury.

Did not the death ride of the Prussian First Guard Dragoon regiment at Mars la Tour fully pay the costs by creating a breathing space for the parts of the Tenth Corps just arriving on the battlefield?

RAIDS DURING BATTLE.

During the modern, long continued battle an efficient reconnoitering detachment, going to the farthest zones in rear and flank of the enemy, will succeed in ascertaining where the ammunition, subsistence and sanitary columns are located which are to replenish the fighting line. Plenty of opportunities will offer themselves to destroy such columns and create thereby situations where the hostile fighting line, being without ammunition, or being starved, will evacuate its position to our infantry at the critical moment. The numerous telegraph and telephone lines in rear of the hostile front will offer excellent objects of attack by smaller, rapidly moving bodies of cavalry. Such destruction may paralyze for hours the hostile leadership and artillery fire. Thus we have the tactical duty of worrying the flank and rear of the enemy and thereby force him to make detachments by unexpected attacks on his reserves.

On June 24, 1866, Captain Bechtolsheim in command of three platoons Uhlans dispersed the approaching Italian Infantry Brigade Dho in such a manner that it did not come into action that day. Loss of the Uhlans: two officers, eighty-four men and eighty horses.

Finally, each concentration of larger masses toward the battlefields creates situations in which an efficient cavalry body will succeed in keeping detached columns sufficiently far from the battlefield to delay their participation in the decision or to entirely prevent it.

Such a situation happened to the Austrian army July 3, 1866, at noon at Königgrätz.

DECISION FOR INTERFERENCE OF THE CAVALRY.

As a general rule, the large bodies of cavalry stationed on the wings of the battle front, often several cavalry divisions, will be concentrated there in one body, are much too far from

the highest commander to receive special orders covering each case. It is thus absolutely necessary that all bodies of cavalry used on one wing be placed under one commander.

This is clearly shown by the events in Bohemia and Italy in 1866, as well as by the cavalry action at Vionville. The example of the glorious victory of Custozza, Colonel Pulz, who, though junior in rank to other officers was entrusted with the command of the body of cavalry operating on the right wing of the battle front, is instructive. At Königgrätz, unfortunately the opposite was the case. There each cavalry division operated independently in spite of the fact, or possibly because of the fact, of Benedek having placed all of his cavalry behind the battle front to remain "at his disposition." Half of these cavalry bodies joined the retreat without having made a single charge.

Provided the cavalry has been assigned its correct place by the commander-in-chief, the cavalry leaders will find plenty opportunities to arrive at decisions as to when and where to interfere. If a cavalry leader waits for orders from higher authority for that, he will always be too late.

At the opening of the campaign of 1805 Napoleon possessed excellent cavalry commanded by young officers educated in their profession, who possessed the confidence of the men and who operated on their own responsibility.

Of the Prussian cavalry leaders of the year 1806 the British Brigadier General Remington says that "they were peace generals who never took the initiative and who always avoided to leave their well worn ruts. They were fine men and very smart on parades. They were seldom on horseback and when they had to be, they chose quiet, tractable animals. They were fat, old, slow-going gentlemen, entirely unsuited as cavalry leaders, because it was impossible for them to sit eighteen hours in the saddle on the hot summer days. Thus 225 Prussian squadrons, in which the spirit of Seydlitz and Ziethen still lived, were swept off the face of the earth by the young, active French cavalry." Fieldmarshal Archduke Charles supports this view by saying: "The good Prussian cavalry was lamed by incompetent leaders and faulty dispositions."

Napoleon issued instructions that infantry officers were never to try to prove to their cavalry that their attacks would prove fruitless. That would lame the offensive spirit of the cavalry arm.

FACTORS INFLUENCING THE CAVALRY ARM. KNOWLEDGE OF THE TERRAIN.

Modern battlefields are not target ranges. Forests and villages, hills and valleys, wire entanglements and defiles cannot be seen as readily on the battlefield as they can on the war game map. Knowledge of the terrain in which a cavalry

leader has to maneuver his command is of greater importance to him than it is to the infantry commander. Woe to the cavalry, should it unexpectedly encounter difficult or unsurmountable obstacles in a charge. For this we have horrible examples in the very death rides of the Cuirassier Brigade Michel and the Cavalry Division Bonne-main at Wörth and of the Cavalry Division Margueritte at Sedan in 1870.

The desire of having freedom of movement toward any side must cause the cavalry, as long as it stands in readiness for action, to take proper steps to gain the most exact knowledge of the terrain over which an attack will probably be made. Nothing undermines the trust of the men in their leader and nothing shakes the moral element, which is the very foundation of modern cavalry, more than the knowledge of having been *uselessly* sent into death and destruction.

Each cavalry charge, which comes to a standstill in the rapid fire of unshaken infantry must end with annihilation; the utmost rapidity of movement can be achieved only when charge can be made without stop and without change of direction in the zone of the enemy's fire.

The advance preparations for the charge must be made thoroughly down to the very last details so that when the moment for the charge has arrived, the decision is materially simplified and consequently more quickly arrived at and the execution will be in accordance with the leaders wishes. Here and there a few valuable cavalry lives may be lost before the charge, but they must be sacrificed for the welfare of the whole.

PROBABLE EFFECT OF FIRE.

Tacticians of the present day, who probably never saw a charge, calculate the effect of fire on oncoming cavalry according to the results of the target range. Is this not a wrong calculation? The few military historical, available data of recent meets show different results. Thus I can confine myself to cite these here and will refer to the interesting essay by Lieutenant Eyb published in 1908 in the *Kavalleristische Monatshefte* concerning theoretical calculations. Eyb calculates as follows the losses of a body of cavalry which has approached to within 600 paces

of an unshaken infantry, but which has been under fire for some time, based on experience on the Bruck traget range:

Nine per cent. of the animals and five per cent. of troopers killed; twenty-seven per cent. of the animals and twenty per cent. of troopers wounded.

These results are based on both infantry and cavalry being numerically equal. Actual events show more favorable results.

At Sedan, where the Germans fired on the French during the battle, like into a sack, there was one hit to every 375 rounds fired.

In the battle at Valestino (27 April, 1897) the seven squadrons (400 troopers) under Colonel Ibrahim Bey had a loss of only 30 dead and 100 wounded, though they were under cross fire of unshaken infantry in trenches and three batteries, which fired case shot, during the most dangerous part of their charge, that is at short range. In spite of that murderous cross fire the Turks finally charged and stormed, dismounted, the attack objective, the infantry trenches—dismounted, because their horses had completely given out.

In the above mentioned charge of General French on the Modder River 1900 the losses of the cavalry division (3,600 sabers) were 16 dead and wounded and 30 horses, that is less than one per cent. And in addition, the opponent consisted of world renowned Boer sharpshooters.

During the days of Sandepu (27 January, 1905) the Second Daghestan Cavalry regiment charged victorious Japanese infantry (about two battalions) establishing itself in the village Landungou and supported by eight guns; the charge commenced at about 3,000 paces. The charge, executed under the most unfavorable conditions, came to a stand at wolf pits, wire entanglements, and a natural, unsurmountable ditch at close range of the firing infantry. The regiment retreated the way it came, losing heavily. Total loss: three officers, sixty-three men and sixty-two horses. One squadron advancing on the flank, had but one man wounded. In spite of a hot fire lasting fifteen minutes, the loss was but sixteen per cent. The charge was made at the trot.

Bagraton describes a charge of several sotnias of the Fourth Ural Cossack Regiment against two companies Japanese at Zinzajpao. The Japanese were driven back, losing 100 dead, 57 wounded, 39 prisoners, while the Cossacks lost 1 killed, 7 wounded, 12 horses.

These charges all were made without possibility of surprise and against more or less intact, and even victorious infantry. Thus the infantry will first of all have to bring proof that its fire is actually annihilating at all times. Unfortunately there are no experiences in regard to machine gun fire. In war they undoubtedly will play an important rôle. Still, cavalry must not ask what arms the opponent has, all it has to ask is: "How shall I attack to prevent the opponent from profiting the least from the fire effect of his arms."

PHYSIOLOGICAL EFFECT OF FIRE.

Much has been written, especially by the medical profession concerning the humane wounds caused by the jacketted bullet. Experience now has shown that even serious or mortal wounds do not place men and horses immediately *hors de combat*. Hits in the brain or back bone, in the full stomach or heart are as a rule mortal; hits in bones as a rule make the man or animal immediately unfit for further service; but hits in the lungs, muscles or intestines cause relatively slight wounds and lead to unfitness for immediate battle only after some time has elapsed. French experiments gave the result that eighty per cent. of mortally wounded horses were able to cover two kilometers at the gallop and that the largest part of them died only after some hours. Of interest is the report of the Prussian Lieutenant v. Salzmann concerning the wounding of his horse in an engagement with the Hereros, which latter used the dumdum bullets in part. His horse was hit at a range of 100 meters, reveiving three bullets almost simultaneously from the left, the first piercing the croup, the last one the heart. In spite of this the horse carried its rider more than 1,500 meters out of the danger zone before falling down and expiring.

I may be allowed to cite here also an event occurring in the battle of Custozza. My father, serving as captain in the Bavarian Hussars in the Brigade Bujanovic in the charge against Villafranca, suddenly encountered, in the pursuit of Italian troopers and accompanied by but a few Hussars, heavy infantry fire at the edge of the village of Villafranca. He was wounded and his horse was shot in several places. After it had carried its rider for quite a distance out of range of the bullets it fell dead, burying its rider underneath of it. With sixteen bullets in its body it had covered more than two kilometers before falling!

The inference is easily arrived at: In a charge covering more than 1,000 meters the larger part of seriously wounded horses would carry their riders still to the infantry and only play out when the objective has been reached, when the enemy has been ridden down.

The Italian War Office appears to have come to the same conviction, based on experiences of the Tripoli campaign, for

it is stated in newspapers that it is the intention of the Italian government to change the caliber of the small arms and to abolish the jacketted bullets.

SURPRISES.

Wherever cavalry intends to operate it should endeavor to surprise the enemy. It will surprise him *morally*, if he shows no resistence although he had time therefor, because his nerves gave out and prevented him from coming to a decision to action.

In the campaign of 1866 in the Tyrol, Lieutenant Torresani, reconnoitering with a patrol of eight troopers, unexpectedly encountered a strong column of Garibaldi's force. Deciding on the spur of the moment, he charged the head of the column, dispersing it; then he quickly faced about and received a badly aimed fire only shortly before his disappearance. Only one horse was slightly wounded in this affair.

We can also imagine how easily cavalry can come by fortunate circumstances, into situations where it can surprise *physically*, *i. e.*, where the firing opponent is unable on acount of sufficient time to fire the necessary number of rounds to drive off the cavalry. Such a case probably can happen only to very small bodies of cavalry against infantry (charge made by Bechtolsheim at Custozza in 1866), while larger bodies of cavalry can count only on *moral* surprises, from which, however, more frequently happens the more the hostile infantry and artillery is shaken in its powers of resistance.

A case of physical surprise by larger bodies of cavalry happened under my personal observation during the cavalry maneuvers of 1889, in which I served on the division staff. Two cavalry divisions stood opposed to each other at cannon range. Our division was in a position behind a forest and had the duty of favoring the retreat of our infantry. Between our and the opposing division was bottom land covered with corn, which our division commander decided to cross in mass formation to attack the opposing division in flank and unexpectedly. The formation probably was not happily chosen, the regiments marched in column alongside each other.

The hostile division commander at once perceived our critical situation as we moved in a flank march in a dense mass across the lowland. He immediately launched one of his brigades against us on the shortest road and that brigade came so rapidly that only the regiment riding on our flank found time to deploy; the regiment next to it engaged only in part, and the other brigade simply remained still and did nothing. During this cavalry battle, which resulted in our defeat in spite of our numerical superiority, the other hostile brigade attacked our unprotected infantry in rear.

PSYCHOLOGICAL EFFECT OF MODERN BATTLES.

Whoever has closely followed the reports and accounts of the battles of several days' duration in Manchuria, gains the impression that infantry and artillery suffered from extreme tension of nerves in the first hours and days of a battle. Officers and the best men had fallen, a shot up mass of men, among them many cowards, still held the positions, in trenches, for days without food. Ammunition commenced to run short; complete apathy set in, as has frequently been observed to happen here and there in maneuvers during exhausting marches and engagements. Absence of leaders, mixing up of different organizations, psychic and physical exhaustion and hunger, changed even the best of troops into mobs. Should then the cry be raised "*cavalry is charging us*," is it to be wondered at that every man's heart jumps into his mouth and that the human machine gives out completely? Is it any wonder then that in the fear and surprise most if not all of the rifles are fired into the air without proper aim? Is it any wonder then that the men no longer can work their rifles properly, can no longer calmly insert cartridges in their magazines when the cavalry charge overwhelms them?

And those are the times when cavalry reaps the benefit and pay for its weeks of endurance and hardships in the reconnaissance service, and when it can gain time for its own weary infantry to again concentrate for renewed efforts and advance.

Each and every cavalry charge on a large scale attracts the attention of all parts of the battle front which may be struck by the charge. Even if the charge miscarries our infantry has an opportunity during its execution to better its position and thus the charge does its part in preparing the subsequent victorious decision.

The charge executed by Bredow's six sqadrons sufficed to lame several infantry and cavalry divisions for some hours, although no fresh cavalry bodies followed up that charge.

The psychological effect on the infantry will, of course, not be the same along the entire battle front. To perceive the proper moment for a charge on some part of the battlefront and to be able to utilize that moment is a most necessary qualification for an efficient cavalry commander. And just because

it is a difficult matter to perceive when the proper moment has arrived, we have so very few historical examples of fortunate and decisive cavalry charges against infantry. The more destructive modern fire-arms prove to the moral and physical force of the battling arm, the more frequent will chances offer themselves for cavalry charges, and one who then hazards all, will win. The success attained well pays for the necessary blood expended.

When Prince Frederick Charles issued orders in the evening of the 16th of August, 1870, to the Brigade Schmidt (Third and Fifteenth Hussar Regiments) to charge northeast, he justified his decision with the words: "I want to prove to Marshal Bazaine that I have won the battle." When the Hussars a few minutes later dispersed the hostile squares, just as darkness set in, the Germans for the first time heard the cry "*sauve qui put*" of the brave enemy, whose officers even were carried away by the resulting panic.

It should not be neglected here to call attention to the fact that the technique of the infantry battle has completely changed at the present day. Napoleon expended masses of infantry, occasionally several divisions, for the decisive attack; later on the battalion became the tactical unit; after the Franco-Prussian campaign it was held that the company commanders had won the campaign, and today we expect things of the individual soldier, which we did not expect from any one less than a general in olden times.

The simple soldier is expected to know all about the terrain: to be able to judge distances with due regard to all factors; to correctly estimate the proper rate of fire, saving or expending ammunition; to observe the enemy's and his own fire effect, etc., and withall keep a clear head! After long and exhausting marches in long columns on dusty roads, after marching across rough country with heavy pack, after long work with the spade, in which latter work he is supposed to be an expert, after remaining for hours under hostile fire, of the intesnity of which we can form but a poor opinion based on the ammunition expended in the last war, he is supposed to have an efficient, calmly working heart, though his stomach often repels for the want of nourishment and though thirst brings him near utter exhaustion! Are not all these things psychological and physiological moments which more than ever heretofore promise a future to a brave and heroic cavalry?

AFTER THE DECISION HAS BEEN MADE.

The maxim, so frequently treated of in theory: *"Pursuit of the retreating enemy or salvation of our army after a lost battle"* appears to be hard of execution in practice. At least the history of the latest campaigns cites but a few successful pursuits operations on a large scale. Attempts to save the army were either superfluous because the enemy did not pursue, or they mostly ended with complete annihilation of the cavalry which sacrificed itself.

Classic examples of pursuits are Napoleon's operations after Jena (1806) and those of the allies after the battle of Waterloo (Belle Alliance 1815), which ended with the complete dispersion of the hostile army.

The pursuit after Königgrätz was far from being carried out energetically, prevented, however, by the correct utilization of the Austrian cavalry divisions. After the large battles of Metz and Sedan no pursuit took place because the hostile army was bottled up.

The Russo-Japnese War did not show anything much in this respect, as neither after Liao Yan nor after Mukden were there sufficient Japanese cavalry available and as the infantry of the victor was so exhausted, on account of the battles lasting several days, that no thought could be entertained of a rapid pursuit in spite of the desires of the highest leaders.

The salvation of the Austrian Army at Königgrätz, achieved with the greatest bravery, was affected by only one-half of the available cavalry. Only the First Light Cavalry Division (Edelsheim) and the First and Third Reserve Cavalry Divisions (Holstein and Coudenhove) were used and prevented for the moment the Prussians from pressing after the debris of the army fleeing across the Elbe, while three divisions accomplished the retreat with the infantry, without having been in battle

On the other hand, the charges of the Cavalry Division Bonnemain and of Michel's Brigade at Wörth, as also the audacious charges of Gallifet at Sedan, show clearly how salvation attempts should *not* be made.

An excellent example of how cavalry as a part of a smaller force can save its infantry from destruction is found in the battle of Melilla, (20 September, 1909). Ninety Alfonso Jägers charged the Moors attacking the rear guard battalion and bring them to a stand; a second charge of not more that forty Jägers cuts the Moors away from the infantry and the third charge made by but eighteen Jägers, causes them to flee. This squadron stood for fourteen hours without food, feed or water in torrid weather, charged three times in the deep sand, and had but eight killed and seventeen wounded. Its own battalion was saved and the enemy lost 100 wounded; wounds caused by the *arme blanche*.

After the decision has fallen we must demand of the cavalry that it remains in close touch with the retreating enemy, that it drives him on the evening of the day of battle and in the subsequent nights from his camps or cantonments and thus

increase the general dissolution to annihilation. What matters a few hundred played out horses, if we can thereby spare our own army another bloody battle. But as a rule we do not know the degree of the enemy's dissolution, because, as is clearly proved by the battles of Wörth, Vionville, Liao-Yan and Mukden, contact with the enemy was lost in a very short time. That the cavalry under such eminent leaders as were the victors in the just mentioned battles omitted this first duty after a gained victory is proof how difficult it is to hurry played out troops after a fleeing enemy.

Had the Japanese known conditions with the Russian army after Mukden as we know them today from Ullrich's *"Baptism of Fire of the Russian Army in the Campaign of 1904–5,"* they undoubtedly would have inserted the very last man and horse of the combined Brigades of Akiyama and Tamura to annihilate the Russians.

If we have no longer any large cavalry masses at our disposal for the pursuit, smaller bodies of cavalry will perform the same service in certain respects, by swarming around the fleeing enemy like wasps, stinging him wherever possible, allowing him not a minute's rest and exhaust him completely physically, until our own infantry, refreshed in the meantime, again comes up and takes over the pursuit.

ATTACK FORMATION OF CAVALRY.

Although it would be interesting to form a theoretical picture of the formations in which cavalry attacks infantry and artillery, nothing would be served thereby

I am of opinion that every efficient cavalry leader improvises the formation for the charge or mounted attack in each single instance according to the situation as found. Only the enemy's situation, the terrain and condition of our troopers can say where the charge will suffice or whether dismounted fire action has to be resorted to in order to screen the cavalry's preparation for the mounted attack, or whether the dismounted fire fight should be had in combination with the mounted attack. The first requisite for *each* formation of attack is that the form of deploying assures the highest celerity and power of shock.

Our most important and most costly arm was, is, and will always remain the quick and obedient horse. Any cavalry leader who is ignorant of fully utilizing this arm and who does not bring it to its fullest account wherever possible, will have but little use also for repeating carbines, machine guns and rapid fire artillery, because he will finally transform his cavalry into mere mounted infantry.

Ability of quick motion of cavalry has very materially increased in the past fifty years; it undoubtedly can be still more increased. Rapidity goes hand in hand with increasing betterment of horse material. It is the duty of a cavalry genius to utilize both for the annihiliation of the hostile battle front. Wave after wave must be thrown in succession against the hostile fire; the first wave to shake the opponent, the second to frighten him, the third to cause him to flee, when he sees these waves engulfing him from all directions.

Sufficient room for the attack by masses of cavalry will be found in every field of battle. A brigade requires approximately 1,500 meters, a division, which must be formed with great depth, hardly more than 2,000 meters.

In 1862, Stuart attacked at Old Church in column of fours; Bechtolsheim at Custozza in column of platoons; Pluz at Custozza and Bredow at Vionville in line; French at Clip Drift in three lines, the first line deployed as skirmishers. On September 7, 1757, Seydlitz stormed, at Pegau, the bridge across the Elster with dismounted Hussars and immediately thereafter defeated the hostile cavalry with his troopers by coming unexpectedly out of that village. A few weeks later, November 5th, he screened his departure by five Hussar squadrons fighting on the Janus Hill east of Rossbach and then charged in full force the superior cavalry of the allies which was marching along without apprehension, defeated it and then turned against the nearest infantry, compelling it to flee. At Jicin, the Division Edelsheim fought dismounted independently, holding a hostile infantry division for hours.

Examples regarding the operations of the cavalry in the battle of Liao-Yan from August 29th to September 5th would form a chapter by themselves. We will briefly state that the faulty utilization of the cavalry in the Russo-Japanese War were the principal reasons for the failure of this arm and that the phases of the modern battles did not condemn that arm to inactivity.

From all this we draw the following conclusions:

The *very best* leader is just good enough to lead a large body of cavalry. Over production in this respect is not to be feared. Every trained tactician will know how to utilize cavalry, but only an actual, competent cavalry general can lead it. Such men are a scarce gift of God.

Cavalry must be equal to all demands in war in respect to organization, training and equipment and it must try to keep up with the progress of the other arms in the tactical field by increased fostering of the cavalry spirit, which never precludes utilization dismounted. Fostering the cavalry spirit in the troop, in the regiment, etc., must receive the place which is its proper due. The moral qualities of troops and their confidence in their leaders counts more than a double superiority, according to the lessons taught by the Russo-Japanese War.

Cavalry, which believes itself invincible, and is thus filled with the true cavalry spirit, will always be victorious, still the thunder of cannon, in the roll of rifle fire, in the clatter and rattle of the mêlee it should always have in its mind and hear General Wrangel's words: "A body of cavalry, which consecrates itself to death, can not be stopped by any earthly power and its victory is just as certain as the night is followed by day."

THE IMPORTANCE OF CAVALRY.*

By FREDERIC H. VON BERNHARDI, General of Cavalry, (Retired) German Army.

THE fire of modern rifles and guns has deeply affected the tactics of the three arms, as we have seen. While it has altered only the form of fighting of infantry and artillery and the manner of their tactical employment without touching the impotrance of both these arms as a whole, and within the army, it has had a far greater influence on the cavalry. Not only the *tactical formations* used by cavalry in action have

***Extract from a recent book by General von Bernhardi entitled "On War of Today."**

changed, but its *employment* is altogether different. Whereas, its importance rested in former times chiefly on its decisive participation in battle, its importance today is founded on *strategic* action. But in that sphere of action the value of cavalry has extraordinarily *incresaed* just owing to these very conditions of modern times, as will be seen, if we examine them with an unbiased mind.

The opinion is generally held, it is true, that the cavalry has lost almost all its importance in the face of modern arms and armies of masses, and this opinion is apparently confirmed by the experiences of the latest wars, in so far as indeed the cavalry has played a very inactive rôle in modern campaigns, with the exception of the South African War; but this circumstance cannot at all be considered decisive for the future, for they were quite peculiar conditions which caused the cavalry to make such a poor show in recent times. One main point above all was of decisive importance for this.

The effect of modern firearms, with all its consequences, has, as we have seen, caused occasions for successful charges against firearms to be of very rare occurrence in the latest wars, and they will be rarer still in future. Such charges have, however, positively ceased to be of decisive importance in battle, by reason alone of the comparative small numbers of cavalry. Owing to the enormous size of modern armies and the extent of the battlefields, a successful charge of even so large a body as a cavalry division could no longer bring about a decision by itself. But the cavalry has nevertheless hitherto stuck to the fiction that its relation to the other arms was still similar to what it was formerly—that an action of the three arms combined was possible even to-day, as in the days of Frederic and Napoleon. The cavalry looks now, as it looked then, upon a charge in battle as its paramount duty; it has almost deliberately closed its eyes against the far-reaching changes in warfare. By this it has *itself* barred the way that leads to great successes. The responsible military authorities has failed in the same way. Very reluctantly the cavalry was armed with firearms, at first even with quite useless weapons, and it is but very recently that the German cavalry got an efficient rifle; its use is still looked upon as quite a subordinate matter. The

tactical exercises of cavalry divisions are still carried out as of old; we still cannot bring ourselves to enter heart and soul upon the tasks imposed on us by the new order of things. Superior commanders, too, are still imbued with obsolete ideas, and employ cavalry according to these ideas. The Emperor's "maneuvers" in 1909 furnish an interesting example of this. Cavalry owes its decline to all these circumstances. But whether it will gain in future the place due to it will, above all, *depend on whether the rank and file will resolve* with open eyes *to break with the ideas of the past*, and *devote themselves to the tasks of the present without reserve*.

The German cavalry need not, for all that, give up the hope of successfully charging infantry and artillery. Anyone who wished to deduce from my remarks that I thought the time for such charges was a thing of the past would completely misunderstand me. I am rather of the opinion, and have always stood up for it, that modern infantry will sometimes present a favorable object for a charge, especially when it is a question of infantry of the second and third lines. If such infantry is demoralized by the dissolving influences of modern action, is out of hand of the commanders, and no longer fires deliberately, it will easily enough become a prey of a bold cavalry charge from various directions if the ground offers at least some advantages. Such situations are sure to arise even to-day, especially in pursuits. The enemy's artillery, standing far behind the foremost fighting line, can also often be attacked by cavalry, though not in front, yet from the flanks, and especially in rear, if the enemy has used up his reserves, or, as a modern writer has it, if there are no reserves at all, and have been replaced by "motors full of ammunition."

Obsolete, I only hold to be that opinion which thinks that the *main task* of our cavalry is to co-operate directly with the other arms and to charge in battle; which desires to subordinate all action of cavalry to this task, treats fire-fight of cavalry merely as a last resource, and would like to restrict the strategic freedom from that arm by constant deference to its possible employment on the battle field.

If the cavalry takes the field in a future war with notions

of that kind, it will *certainly not* give us that advantage which we otherwise can expect, and have a right to expect from it.

The relations of cavalry to the other arms, and altogether to the conduct of war, have, as a matter of fact, completely altered. *An action of the three arms combined in the old sense,* as is still hovering before the mind of our cavalry soldiers as a delusive idea of bygone times, is *no longer feasible at all.* The participation of cavalry in the decisive action of infantry and artillery is no longer necessary. All the more important it is to be absolutely clear on the tasks which a future war will demand the cavalry to solve, and on the mode by which these tasks must be solved. The superior commanders and the cavalry itself must learn to deal with these problems, and prepare themselves to carry them out, if the cavalry is to continue to be a useful instrument of war in the future.

Reconnoitering and *screening* must be mentioned first of all in this connection. Both have eminently gained in importance under modern conditions. Advantageous as it is to have as accurate and as early information as possible on the enemy's measures, and to screen our own concentrations and movements with the object of surprising the enemy and increasing thereby the chances of success, the advantages will be all the greater when great masses are concerned. The larger the armies are which are being moved, and the longer it therefore takes to concentrate them or change their direction of march, the more important it becomes to reconnoiter in time, so as to be able to initiate early enough the measures which may have become necessary through the facts ascertained by reconnaissance. Modern arms indirectly influence reconnaissance in so far, too, as, owing to the long range and effective indirect fire of artillery, we must deploy for action sooner than formerly. It will be very exceptional for superior commanders to reconnoiter personnally before such deployment. They are thus almost entirely dependent on the results of cavalry reconnaissance, not only for their operations, but also for their dispositions for battle. This makes cavalry reconnaissance all the more valuable, but also calls for greater efficiency of that arm.

The cavalry must precede the armies as far forward as possible, to beat the hostile cavalry and push it back vigorously, so as to allow our own patrols to approach rapidly the hostile columns and discover their movements. So long as an efficient hostile cavalry is in the field, our own will be hampered in all its enterprises, and accordingly obtain little information. We must further bear in mind that the enemy's cavalry may decline to fight with cold steel, using the carbine instead, and be supported in this action by detachments composed of all arms. The cavalry must therefore, be prepared to undertake independent operations of an extensive nature, and be able to beat by dismounted action strong hostile forces, or to turn them. If it can do both, then, and only then, will it carry out its object.

Offensive power is, however, not enough for cavalry; it must have also learned to push out its reconnoitering bodies rapidly and systematically, and to send back as fast as it possibly can to the head quarters concerned the early information it had obtained. Great horsemanship, combined with daring boldness and vigilance of patrols and reconnoitering squadrons, are necessary to attain these objects; all mechanical means must, moreover, be used to promote rapidity of gaining and transmitting intelligence of decisive importance. The army cavalry must therefore be equipped and conversant with wireless telegraphy, telephones, signalling apparatus and flying machines, the uses of which have already been discussed in another chapter. It may also be advisable to use signalling balloons, with the object of conveying to the reconnitering squadrons orders and other communications. If we make such a balloon ascent at a certain hour of the night from a preconcerted spot, the reconnoitering squadrons and other detached bodies will be able to discover it easily, and read the flashes given by the Morse code. If this system answers well at trials made in peace-time, each cavalry division could be equipped with a small balloon of that kind. It would render good service in clear weather. The cavalry must also keep as much as possible in constant touch with any dirigible arisships that may be avilable. The airships must arrange their action so as to work ahead of the cavalry, and furnish it with intelligence about large concentrations of the enemy or their approach, to enable the cavalry to adopt its measures accordingly. These

ships must therefore beat the enemy's airships and flyers, and start early to meet them with that object. To insure co-operation in reconnaissance on land and in the air, will often be advisable to place the cavalry and airships under one uniform command. The intimate co-operation of these two arms will best insure success. We will also be obliged to attach to the cavalry specially designed guns to support our airships in their fight against those of the enemy, or to fight them independently.

Early reconnaissance is particularly important to that party which has resolved to remain on the *defensive*, strategically or tactically. That party has then surrendered the initiative to the enemy, and must conform to his will. It cannot arrange for suitable measures of defense until sufficiently informed as to the grouping and main direction of attack of the enemy; it runs the risk of being too late with these defensive measures; if it does not receive correct intelligence about the enemy's measures in ample time. At the same time, it will be its concern to screen the position of its own reserves, so as to deliver a counter attack by surprise. *The assailant*, on the other hand, who seizes the initiative and imposes his will on the enemy is in the first instance, interested in *screening* his concentration, and his main direction of attack so as to act by surprise, and thus make it impossible for the enemy to adopt his counter measures in time. But it is also desirable for him to gain a knowledge of the strength and grouping of the hostile reserves, so that he may not come unexpectedly on stronger forces than he had anticipated. In this way the cavalry has always to face the double task of simultaneously reconnoitering and screening; and it will often have to decide on which of these activities it has to lay the greatest stress. When screening, it will, above all, be a question of warding off with firearms any hostile attacks, because effective screening is generally only possible by defensive action in combination with ground. Sometimes only when advancing must we try to screen offensively by boldly attacking every hostile party, down to a single patrol, pushing them back, and endeavoring to caputre the enemy's dispatch riders. If screening is to be supported by airships and flyers, it can only be done offensively by attacking the hostile ærial fleet and trying to render it harmless.

When we are reconnoitering and not screening, we must always try to come to close quarters with cold steel, as we wish to attain our object quickly, and must therefore decide an action rapidly, and that can only be done by charging. In case of need only, when there is no other course open, must we have recourse to the carbine. Since both parties have an equal interest, as a rule, in gaining rapid success, we are justified in assuming that during the first period of a war there will be great cavalry charges, and that only that party will have recourse to firearms which, from experience, has become aware of the enemy's superiority when charging; the party using its fire arms must then be beaten by dismounted action as well. From this it follows that cavalry, intent on carrying out its duties, must also prove superior in dismounted action, so as not to lose in fire action the superiority it has gained with cold steel.

In addition to reconnoitering and screeening, the cavalry must at all cost *act on the enemy's lines of communication.* This is of the utmost importance in modern war. The larger the armies, the less they are able to live on the country; the quicker and the further the fire arms shoot, the more ammunition will be spent. In equal measure grows the importance of supplies and of the lines of communication; the interruption of regular supplies may prove then all the more fatal. Here, therefore, is a field for the cavalry to achieve far-reaching successes. Even tactical decisions may be effected, at least indirectly, by the enemy's supplies of ammunition being cut off directly in rear of the battlefield.

In view of these dangers threatened by cavalry, both parties will take pains to guard in sufficient strength with troops, at least of the second and third lines, those communications which may be endangered. It will, therefore, not be easy for the attacking cavalry to carry out its mission. It will not only have to beat the enemy's cavalry which will certainly oppose it off the field, but it must also opearte independently on the flank and in rear of the enemy for days, and perhaps for weeks, entirely separated from its own army, and be able to capture

by swift attack any supply columns on the march or while parking as well as depots on the lines of communication. The cavalry must therefore be specially equipped for these duties, and have substantial fighting power, not only mounted, but above all dismounted. If its own strength is not sufficient, cyclists must be attached to it, because a *combination of cavalry with cyclists* will undoubtedly prove altogether extremely effective.

Fears have been expressed that enterprises against the enemy's communications might jeopardize the participation of cavalry in battle, and thus, of course, its participation in pursuit or covering retreat as well. The German cavalry training, too, warns, as it were, against these kinds of enterprises, because the cavalry might be diverted from what is still considered its paramount duty—namely, charging in battle. Views forming the basis of such regulations are in no way in harmony with the requirements of modern war, and completely misjudge the relative value of employing troops. I think, moreover, that the objection of raids diverting a well-led cavalry from its proper duties is perfectly untenable. If the raid is made in a decisive direction—that is to say, in a direction in which the commander-in-chief has decided to bring about the final issue; if the cavalry commander is kept constantly informed of the intentions of general headquarters and on the general situation, which seems feasible by wireless telegraphy or by some other means, he can easily move towards the enemy's army when the crisis is approaching and appear on the day of battle on the flanks and in rear of the adversary like Stuart at Gettysburg. The raid itself will lead him in the decisive direction.

He who wants to keep the cavalry always in close proximity to the flanks or even behind the battle front, will never derive any advantage from that arm under modern conditions; the cavalry will in that case, like in all recent wars, except the American Civil and South African Wars, stand idling about on the battlefield vainly waiting for its chances to come. Freedom and movement together with every kind of action are the life and soul of that arm, which is bound to decay if it does not succeed in adapting itself to modern requirements.

The cavalry in the North American War of Secession, approaching its tasks with an unbiased mind and not being hampered by tradition and routine, soon found the right way for great activity. The South African War, too, is very instructive in this respect. General Buller, who seems to have been still imbued with perfectly antiquated ideas about cavalry, always wanted to have that arm on his flanks to cover them, even when they were not at all threatened; he thus hampered all freedom of action of cavalry. The consequence was that his cavalry did nothing. General French, on the other hand, took the opposite stand. Extensive raids around the enemy against his flanks and rear was the principle of his action, and he would have done even more than he did in this direction, had not General Roberts repeatedly clipped his wings and held him tight, and had not the horses completely broken down. But the fundamental ideas of his cavalry leading were undoubtedly right, strategically as well as tactically. A warm adherent to cold steel and ever ready to charge, he still knew the full value and importance of the fire arm, and never hesitated to attack dismounted whenever it suited the case.

But it has not only been asserted that raids against the enemy's lines of communication will jeopardize the cavalry's participation in battle—it has been further asserted that these kinds of enterprises are not at all possible under modern conditions. The numerous lines of communication defence troops, and the extensive telegraphic system of European theaters of war, would make it always possible to concentrate superior forces against such cavalry and paralyze its action. I think this view is wrong.

Certainly, at the beginning of the war occasions for such enterprises will be rare. When the French army is concentrating on one line from the Belgian to the Swiss frontiers, we cannot dispatch a cavalry corps on the French lines of communication. But when, during the course of the war, different and separate army groups will be forming—as will always be the case—a suitably equipped cavalry will certainly be able to operate against the enemy's flanks and rear. If we study the campaign of 1870–71 from this point of view, we will not be

long before we arrive at this conviction. Of course, the troops employed on such a raid must not only have considerable fighting power, but must also be equipped with columns and trains capable of moving as rapidly as the troops themselves, making them, for some time at least, independent of the country, as well as of their own lines of communication. By destroying the enemy's railway and telegraph lines, as well as by spreading false intelligence, the raiding-corps must try to keep the enemy uncertain about its activity, and render his concentration for a counter offensive difficult. By demonstrative movements and rapid marches, sometimes carried out at night, the corps must deceive the enemy, escape his countermoves, and unexpectedly appear where the blow is least expected. It is of course, altogether presumed that these demands are met when cavalry is employed independently in this way, as well as in reconnaissance and pursuit. If these demands are satisfied, the raids will prove feasible too. Their importance is generally underrated. I do not only think them possible, but a downright necessity, as we shall see when we deal with the strategic operations; and I believe that raids will not only favorably influence the decisive issue in battle, but also lead the cavalry in a favorable direction on the battle field itself.

At the *final issue of battle* the cavalry divisions can also take their due share only if they are able to act with firearms in consideragle strength. There being no longer any question of cavalry co-operating constantly and closely with the other arms in the way it is still done with infantry and artillery, the cavalry, combined into large masses, must try to intervene from the flanks of the line of battle, and to become effective chiefly by the direction of this attack. This must be made against the flanks and rear of the enemy. Its mobility enables the cavalry to envelope the enemy's flanks and penetrate to his rear. It must not be afraid of abandoning, then, altogether its own lines of communication for the time being. It will always be able to regain them again. If it is opposed by the enemy's cavalry, that cavalry must be attacked without hesitation, beaten and pursued with portions of the force. This is presumed for all further enterprise. If it is successfully accomplished, then the road is open to great achievements. The

moment has now arrived where the cavalry can render invaluable services to the other arms, though not in direct co-operation, by drawing upon itself hostile troops and preventing them from intervening in the decisive issue. The victorious cavalry will first employ its artillery, machine guns, and, if need be, its carbines against the enemy's flanks, reserves, artillery and ammunition columns, and use every opportunity for acting offensively, mounted and dismounted, without, however, engaging in an obstinate fight against superior numbers. Its mobility enables it here again to get away and rapidly appear at another place. The cavalry must perpetually try to threaten and damage the enemy where he would feel it most, but must reserve its main fighting power for the moments of the crisis. At these moments it must not mind heavy losses if it can effectively contribute to gaining victory. It will resolutely attack and push back in good time the detachments the enemy has pushed forward for protecting his flanks and rear, and thus have the road clear when the final crisis arrives. It is then of great consequence that the cavalry should act effectively at all costs, and to intervene in the decisive combat itself by charging, if that can be done, otherwise by fire action.

The cavalry of *the defense* will first of all try to capture the assailant's artillery or to engage it, paying at the same time special attention to his heavy artillery. It will throw itself on the attacking infantry as soon as that is preparing for assault, which can be noticed by the increase of fire and by the resolute advance of reserves that may be available still. It depends on circumstances whether the cavalry makes use of the charge here or if dismounted action. It will also have to intervene sometimes in relief of its own infantry when that seems to grow weary. The cavalry of the *attack*, on the other hand, will not only act offensively against *those* portions of the hostile artillery which are firing on the attacking infantry, but do all that is in its power to prevent reserves from intervening in the fight, and, if possible, to bring to bear reverse fire on the defensive line itself. Occasions for charging infantry will be rarer for the cavalry of the attack than for the victorious cavalry of the defense.

Another particularly important task for cavalry is to delay hostile troops hurrying to the battlefield from behind or from the flanks, and to prevent their timely arrival on the battlefield. Mobility and carbine will here be of great use to cavalry too.

Of great importance is, lastly, the co-operation of cavalry *in pursuit*. Direct pursuit in front, as will naturally follow from the nature of the fight must, of course, be chiefly left to the infantry and artillery, armed as they are today, because the bullet reaches further and surer than the swiftest charge. But to pursue along the flanks of the enemy is the share of the cavalry, which must try to forestall the hostile march-columns, break into their flanks, and head them off, especialy at places where the ground is favorable for causing the delay to the flying enemy. The victory having been bought with streams of blood, the time has now come for reaping the harvest by inflicting on the retreating enemy losses twofold and threefold the amount we have suffered. Fire and cavalry charges where the demoralization of the enemy allows it—must do here equal damage.

The fact that victorious pursuit was never undertaken by cavalry in recent times, at least not in European theaters of war, has led people to think very often that the idea of cavalry pursuit is mere theory, and can never be turned into practice. I do not share this opinion, but think that this fact is simply due to the manner in which cavalry was employed, and to its defective equipment for operative purposes.

During the wars of Frederic's time, when the cavalry fought on the flanks of the infantry and could thus easily have initiated pursuit on the flanks of the enemy, it was tied to the army owing to the system of supply, and was not prepared for independent operations. After battle it was as much exhausted as a rule, as the other arms; and after victory was more concerned with rallying, reorganizing units, and feeding horses, than with pursuing. It rarely happened, therefore, that the enemy was vigorously pursued directly after battle.

In Napoleon's time the armies were organized into smaller units, corps and divisions, and the cavalry was partly apportioned to these units, and partly retained in reserve behind the

battle lines, so as to be able to co-operate with the other two arms along the whole front at the given moment. It was very difficult, as a rule, to start from here a vigorous pursuit along the flanks of the enemy, and it was the more difficult because the generals themselves never contemplated anything of the kind in most cases.

When, afterwards, improved firearms drove the cavalry more and more from the common field of action, nobody thought, as we have seen, of drawing the necessary conclusions from this fact, but everybody stuck to the old notion of battle-cavalry. The cavalry was held back until the final crisis, in positions which afterwards made pursuit as good as impossible; and when the moment arrived to use it, it could not be done, as a rule.

The idea of pursuing with cavalry hardly ever entered the mind of any leader, particularly of modern times; the cavalry, even when it was on the spot, was not launched. I personally met with such a case. At Weissenburg a numerous and fresh cavalry was standing on the Geisberg after its capture; everybody was gazing at the retreating enemy, until, in accordance with the praiseworthy customs of peace, the "Halt" was sounded and the order issued to move into bivouac. There was, therefore, not only no pursuit at all, but all touch with the enemy was completely lost as well. It is further known that at Wörth the Fourth Cavalry Division was even forbidden to move to the battlefield. It was not until evening, when all chances had been lost a long while ago, that it was ordered up, from a long distance in rear, to follow in pursuit; its performance next day was, of course, next to nil.

Of special interest in this respect is, again the employment of cavalry in the battle of St. Quentin. On the right of the battlefield were standing the Guard Rider Regiment and the Seventeenth and Eighteenth Uhlans. Behind the fighting line of the right were distributed, in addition, three squadrons of the Ninth Hussars, seven squadrons of the Third Reserve Cavalry Brigade, the Second Guard Uhlan Regiment, and three squadrons of the Guard Hussars—in all, twenty-nine squadrons. On the extreme left were Dohna's Cavalry Brigade, (Eighth Cuirassiers and Fourteenth Uhlans); behind the left wing were

distributed the Seventh Hussars and three squadrons each of the Fifth and Seventh Uhlans—therefore, again eighteen squadrons. All these units were more or less idle spectators of the action; they played something like the rôle of Mephistopheles' knights in the Imperial Battle ("Faust," Part II). They contributed absolutely nothing to success; for the occasion to charge, for which they were lying in wait, arose for a minute fraction only. For orderly and dispatch duties, as well as for direct reconnaissance on the flanks of the army, were actually needed, perhaps, ten to twelve squadrons. It would have been very easy, therefore, to concentrate on the right a cavalry division of twenty-four squadrons, and on the left a strong brigade of three regiments, and to furnish them with some guns.

If we imagine these horsemen to be equipped with modern firearms, and led in a modern spirit, they might have achieved the most brilliant success. During the battle they could have acted already against the flanks of the hostile army, and vigorously supported the infantry. Much more could have been achieved during the further progress of events. It may be left an open question whether it might not have been possible to delay, on the German left, Pauly's Brigade, marching up from Lempire to the battlefield. But it would have been feasible, without the shadow of a doubt, to cut the French army's line of retreat, and possibly force it to capitulate. For this object it was only necessary to occupy towards evening, when the issue of the battle was no longer doubtful, the crossings over the Canal of St. Quentin, which the French army was obliged to cross. The cavalry on the left would have had only a short ride to Belle Englise, and that on the right about twenty kilometers to Lehaucourt by Hombliéres and Remaucourt. On the way it could have occupied with a detachment the bridge of Lesdun; but the French army's main line of retreat could have been effectually barred on the line Belle Englise-Lehaucourt. Nobody, however, thought of employing these horsemen in this fashion—not even a Goeben, the cavalry itself, least of all. At that time it altogether failed to have a clear conception of what it really could do and ought to do. There was only a vague idea of cavalry being a kind of battle

reserve, which could be used only in case of dire necessity. Consequently nothing was done at all.

So long as such views prevail, so long as we always want to keep the cavalry directly in hand, with the object of lying in wait for impossible occasions for charging, instead of using its full fighting power on the flanks and rear of the enemy, and placing it thereby advantageously for pursuit, so long will there be no successful pursuit by cavalry. The cavalry divisions must prepare themselves for such, fully conscious that only then can valuable results be achieved. How can it be done? The tactical preparation and brilliant execution of pursuit after the Battle of Nashville, in December, 1864, in the American War of Secession, is an instructive example of that. It will pay us to study the deeds of this kind of cavalry.

In a future European war we must also carefully prepare for supplying the pursuing cavalry, if it is to push forward boldly. It will be a further advantage if we succeed in beating the opposing cavalry during the battle itself. Should that cavalry show the same natural tendency of acting against the flanks and rear of its enemy, the consequence would necessarily be a cavalry duel, which in all probability would be fought with cold steel, since here, as well as in reconnoitering, both cavalries must aim at deciding matters rapidly. But if one side feels too weak, it will probably have recourse to the firearm so as to at least prevent—if it cannot itself act offensively—the enemy from carrying out his intentions, and thus to bring about an equalization of forces, which gives it perhaps the chance again of resuming the offensive combat with cold steel at a later stage of the fight. In this case must the enemy's resistance be rapidly broken, too. The cavalry must, therefore, always advance early in the day and try to come close to quarters with the hostile cavalry, so as to have its hands free when matters are ripening on the battle field.

The necessity is shown here again of disposing of a numerous and powerful cavalry, able to do its best in a charge or in an attack dismounted, where it should be capable of employing sufficient rifles in action; such cavalry alone will be in a position to pursue vigorously; and on the other hand, such cavalry alone will be able to oppose energetic pursuit with some chances

of success. And it is this last duty which imposes a further task upon cavalry.

When the battle has been fought; when the army which has fought has lost all moral force for further resistance, and retreat has become unavoidable, it will be the duty of cavalry to guard the flanks of the army against any enveloping pursuit.

Whatever losses it may have suffered in the course of the day, whatever checks it may have experienced, at the moment when retreat begins it must re-appear on the battlefield and act offensively, if possible, on the flanks. Nothing will cause greater relief in such moments of moral trepidation than a renewed resolve to attack; nothing will be more apt to nip in the bud any hostile attempts to envelope. But when it is positively impossible to act offensively, the cavalry must make efforts to bar defensively those roads on which the enemy is pursuing parallel to our army. Especially when the pursuing cavalry is trying to use the night for its advance, we must oppose it on all roads and paths with the carbine, and construct hasty barricades, which are best made of wire. In this way a persevering cavalry, aided by cyclists here, too, may save the retreating army heavy loss and demoralization.

It is seen, therefore, that in almost all its spheres of action the importance of cavalry in war has very much increased with the growth of the armies, though its employment somewhat differs from that of former times. But *that* army is sure to derive a great advantage which is firmly resolved to discard antiquated views, and assigns to its properly equipped cavalry those duties which modern arms and military exigencies have imposed on it.

THE CONFEDERATE CAVALRY.*

By PERCY CROSS STANDING.

1. A Survivor.—Colonel John S. Mosby.†

THE octogenarian Colonel John S. Mosby is one of the rapidly-diminishing band of survivors among leading great fighters in the American Civil War. He was, in the judgment of numerous critics and authorities on the opposing side, the most formidable partisan leader of cavalry in the service of the Confederate States in that fratricidal struggle. Colonel Mosby has been so good as to furnish the writer with certain facts concerning his participation in the defence of the Southern Confederacy which have not previously been published. He is himself a writer of grace and charm, having added to the immense literature of the Civil War a fascinating volume entitled, 'With Stuart's Cavalry in the Gettysburg Campaign.' General J. E. B. Stuart was the brilliant and chivalrous commander of the mounted troops of the Confederate 'Army of Northern Virginia,' which met its Waterloo on the field of Gettysburg in 1863. It has been generally accepted that Gettysburg was lost on account of the absence of Stuart's cavalry from the Confederate Army, engaged in an elaborate raid upon the enemy's lines of communication. Colonel Mosby, however, characterises this as 'the Gettysburg legend,' and forcibly adds: 'As I brought the information that induced General Stuart to ask permission to cross the Potomac in rear of the enemy, and was chosen to command the advance of his column, I think I have a right, as an actor in the great tragedy, to be heard.' Stonewall Jackson had been killed a few weeks previously, and Lee's defeat by Meade at Gettysburg was decisive of the fate of the Southern cause.

John S. Mosby first entered the Civil War as a private soldier, but even in that humble capacity his merits were recog-

*From the *British Cavalry Journal* for April, 1912.

†Based on facts communicated to the officer by Colonel Mosby himself.

nized by the Confederate Generalissimo in an Order of the Day. Promotion speedily followed, and the sequel to one of his finest feats of daring, in conducting a raid far within the enemy's lines, was this communication from General Lee to Jefferson Davis, the Confederate President: Mr. President,—You will, I know, be gratified to learn by the enclosed dispatch that the appointment conferred a few days since on Captain Mosby was not unworthily bestowed. The point where he struck the enemy is north of Fairfax Courthouse, near the Potomac, and far within the lines of the enemy. I wish I could receive his appointment as Major, or some official notification of it, that I might announce it to him.—R. E. Lee, General.' The 'enclosed dispatch' was in these flattering terms: 'Captain,—Your telegram announcing your brilliant achievement near Chantilly was duly received and forwarded to General Lee. He exclaimed upon reading it: "Hurrah for Mosby! I wish I had a hundred like him." Heartily wishing you continued success, J. E. B. Stuart, Major-General Commanding.'

And what *was* the 'brilliant achievement' so brilliantly eulogized by Generals Lee and Stuart? I have thought it well to relate it in the veteran Mosby's own picturesque phraseology: 'It was on March 7, 1863 that I started from Aldie with twenty-nine men. It was pitch-dark before we got near the enemy's cavalry picket at Chantilly. Here a good point was won, for once inside the Union lines we would be mistaken for their own men. We passed along close by the camp-fires, but the sentinels took us for a scouting party of their own cavalry. I had no reputation to lose by failure, but much to gain by success. I remembered, too, the motto that Ixion in Heaven wrote in Minerva's album—"Adventures are to the adventurous." There were a few guards about, but they did not suspect us until they saw a pistol pionted at them. Of course, they surrendered. Some even refused to believe we were Confederates after we told them who we were. Joe Nelson rode up to me with a prisoner who said he belonged to the guard at General Stoughton's Headquarters, and with a party of five or six men I immediately went there. An upper window was raised and a voice called out, "Who is there?" The answer was, "We have a dispatch for General Stoughton." An officer (Lieutenant

Prentiss) came to the front door to get it. I caught hold of his shirt and whispered my name in his ear, and told him to lead me to the General's room. Resistance was useless, and he did so. A light was struck, and before us lay the sleeping general. He quickly raised up in bed and asked what this meant? I said, "General, get up—dress quick—you are a prisoner." "What!" exclaimed the indignant general. "My name is Mosby. Stuart's cavalry are in possession of the place, and Jackson holds Centerville." "Is Fitzhugh Lee here?" "Yes." "Then take me to him—we were classmates." "Very well, but dress quick." My motive in deceiving him as to the amount of our force was to deprive him of all hope of rescue. I turned over my prisoner to Stuart at Culpeper Court House. He was as much delighted by what I had done as I was, and published a General Order announcing it to the cavalry, in which he said it was a feat "unparalleled in the war."'

This incident evoked from President Lincoln one of the best of the numerous *mots* attributed to him. With General Stoughton had been captured a number of horses. When Mr. Lincoln heard the news he quaintly remarked, '*Well there won't be any difficulty in making another general, but how am I to replace those horses?*'

Passing over the campaigns of Chancellorsville and Gettysburg, we came to that of 1864, when the blood-drenched country was crying out for peace. Colonel Mosby and his dwindling band of guerilla horsemen ('My command never numbered more than two or three hundred men,' he says in a letter to the present writer) encountered the army of General Phil Sheridan, then operating in and direfully devastating the rich and beautiful Valley of the Shenandoah. As illustrating the drastic methods employed by anti-partisan operators in this war of retaliations and reprisals, I extract the following from General Grant's orders to Sheridan at Winchester, Va.: "If you can possibly spare a division of cavalry, send them through Loudoun County to destroy and carry off the crops, animals, negroes and all men under fifty years of age capable of bearing arms. *In this way you will get rid of many of Mosby's men.* All male citizens under fifty can fitly be held as prisoners of

war, not citizen prisoners. If not already soldiers, they will be made so directly the Rebel Army gets hold of them. Give the enemy no rest. Do all the damage to railroads and crops you can. Carry off stock of all descriptions, and negroes, so as to prevent further planting. If the war is to last another year we want the Shenandoah Valley to remain a barren waste."

It is a matter of familiar history that the ill-starred Valley *did* remain a barren waste, but meanwhile the stories of Mosby's adventurous daring are too numerous for quotation. Once he narrowly missed capturing General Grant himself, and on another occasion he came so close to Washington during one of his incursions—actually within sight of the Capitol—that he cut off a lock of his hair and asked a passer-by to give it to Mr. Lincoln with his compliments (but 'the exchange was never effected'). Wrote one of the Northern Generals: 'Mosby is the devil. There will be no peace till he is killed.' Eventually a price was set on his head, but he vigorously and successfully defended himself from the charge of having followed any but 'regular' methods of irregual warfare. And it is significant of General Lee's high opinion of him that after the capitulation of the Army of Northern Virginia—April, 1865—Colonel Mosby was placed in command of what remained the Force of the Confederacy until the final laying-down of arms, comporting him with dignity and fortitude in what must have been a trying position. Many years afterwards, during Mr. Roosevelt's time as President, the veteran lived to hold office in the United States Department of Justice at Washington.

In his Memoirs, General Phil Sheridan speaks of Mosby's whirl-wind operations in the Shenandoah Valley. He makes no complaint as to the Colonel's methods of conducting war-like operations, but, on the contrary, says, 'He was the most formidable partisan I met in the war'—and this although Sheridan had encountered both Forrest and the celebrated John H. Morgan. Thus commented President Grant after the sword had been finally sheathed: 'Since the close of the war I have come to know Colonel Mosby personally and somewhat intimately. He is a different man entirely from what I had supposed. He is slender, not tall, wiry, and looks as if he could

endure any amount of physical fatigue. He is able, and thoroughly honest and truthful. There were probably but few men in the South who could have commanded successfully a detachment in the rear of an opposing army, and so near the border of hostilities, as long as he did without losing his entire command.'

In his admirable biography of Stonewall Jackson, the late Colonel Henderson has said concerning the work of Mosby and his coadjutors: 'These operations are brilliant examples of the great strategical value of a cavalry which is perfectly independent of the foot-soldier, and which at the same time is in the highest degree mobile. Those who have never had to deal with communications of an army may be unable to realize the effect that may be, and often is, produced by such a force; but no one with the least practical experience of the responsibilities which devolve upon a Commander-in-Chief will venture to abate one jot from the enormous strategical value assigned to it by American soldiers. The horseman of the American Civil War is the model of the efficient cavalryman.'

II. JOHN MORGAN AND HIS 'ROUGH RIDERS.'

There are lessons innumerable for the cavalry officer of today in the meteoric career of General John H. Morgan, of the Confederate States service, who in the American Civil War performed feats of prodigious valor and romantic daring at the head of his corps of irregular horsemen known as 'Morgan's Rough Riders.' These troopers were undoubtedly the best mounted in the Confederate service, every one of their splendid mounts being a thoroughbred Kentucky 'blue grass' animal. And the men who bestrode them matched them, from Morgan's two 'brigadiers,' Colonel Basil Duke and Colonel Adam Johnson, to the humblest bugler in the command.

Morgan's first great feat of arms was performed in the summer of 1862. Entering the State of Kentucky at the head of nine hundred mounted men, he emerged at the close of this his first important 'raid' with no fewer than 2,000, all of them well equipped and finely mounted. In the whole operation he did not lose more than a hundered men, while in prisoners alone he took nearly 1,200. Nevertheless, after Morgan's

return to Tennessee, Kentucky reverted to the Federal power, and in June, 1863, General Morgan was urgently 'sent for' by General Bragg, commander-in-chief of the Confederate 'Army of the West.'

Bragg was confronted in force by the Federal 'Army of the Cumberland,' under Rosecrans. He wanted Morgan to divert attention, and, incidentally, to inflict damage, by means of a fresh foray—but he did *not* want the intrepid cavalryman to penetrate the enemy's lines farther than the city of Louisville, Kentucky. In fact, Bragg positively forbade a crossing of the Ohio River. Now this did not suit John Morgan at all. He told his second in command of his fixed determination to exceed orders by crossing the great river into Ohio, and on July 2d, the raiders started off—a perfectly equipped array of 2,460 horsemen, with two three-inch Parrott guns and two howitzers. They crossed the Cumberland River in fine style, brushing aside with heavy loss a determined attempt to dispute the ford. The enterprise had begun.

At dawn on July 3, 1863, the Rough Riders approached Columbia, stormed it in a wild charge, and made for the Green River. Meanwhile the federal authorities had been telegraphing all over the threatened States, and even as they marched in the night the raiders could hear the noise of the axes felling timber to obstruct their onward progress. It was now July 4 ('Independence Day)', and finding 400 infantry under Colonel Moore blocking his way at Green River, Morgan sent in to demand his 'unconditional surrender.' The colonel had the bad taste not merely to decline to accede to this cool proposition, but to put up so good a fight when Morgan's men proceeded to rush his stockade that ninety of the assailants were placed *hors de combat* inside a quarter of an hour. So the Confederate leader, not relishing this at all, left the enemy where he was and crossed the stream lower down, his next objective being the thriving town of Lebanon. This place was garrisoned by the Twentieth Kentucky Regiment; but Morgan, hearing that this force was by way of being strengthened from outside, attacked at once with the utmost fury. This time his men carried the place, but not before they had lost another fifty killed and wounded—making 140 casualties in two engagements. At Lebanon fell Morgan's brother Tom, a promising young lieutenant in the Second Kentucky. It will be perceived that Kentucky men were fighting on both sides, as, indeed they did throughout the war.

On sped the valiant and dreaded raiders, twenty-one out of every twenty-four hours in the saddle. 'Tapping the telegraph, *i. e.* taking down the telegraph wires in order to mislead the enemy by means of false messages, was a favorite diversion with Morgan. This he did with the utmost success until the Federal authorities became too wary for the ruse to be longer successful. Louisville was already in a panic, since, of course, it could not be known there that Morgan intended merely to threaten and not raid the city. 'So widespread was the effect of the raid of these 2,000 Rough Riders that in the States of Ohio and Indiana 120,000 militiamen took the field against them, in addition to the three brigades of United States cavalry.' On the morning of July 8, or less than six days from the start of his enterprise, Morgan reached the Ohio. He had done more than everything that duty and General Bragg commanded, for three states were utterly demoralized and dumbfounded at the boldness of his wonderful initiative. Not that 'magnificent' was the word applied to it by the Federal foe, for Morgan had to burn on order to render his raid a real devastation, and his men had to plunder in order to exist.

His followers proceeded to cross the Ohio at Brandenburg, with the timely assistance of two steamboats which they 'commandeered.' Suddenly, and while yet a portion of the raiders were on the Kentucky shore and others on the Indiana bank of the mighty river, a hostile gunboat appear in the offing and commmenced to shell the crossing. This was a critical moment indeed; but again John Morgan rose to the occasion. By skilled and masterly use of his four small guns he beat off the gunboat, and the crossing proceeded. Next he made for Indianapolis, the capital of Indiana; but he swerved aside so as to leave that city on his left. A running fight went on continuously now, for all the countryside was in an uproar. At a place called Corydon some sixteen of the raiders bit the dust in a vey pretty skirmish. Most of their 'blue grass' horses

were long since done for, and every available animal that had any pace in him was 'borrowed' and ridden to death.

He might even have captured the fine city of Cincinnati, for not only was it absolutely within his grasp and defenceless, but he could have utilized any number of ferry-steamers on the Ohio. Moreover, it certainly was not because his men as well as his horses were now falling out from sheer fatigue that the bold 'rebel' did *not* occupy the city. It was because, incredible though it may sound, he cherished as even bolder ambition yet!—nothing else than to press right on through Ohio and Pennsylvania, and join hands with the Confederate Generalissimo, R. E. Lee. But what would have been an absolutely unique feat of arms was arrested by the sombre news that reached Morgan at Piketon. The fortress of Vicksburg had fallen, the great battle of Gettysburg had been lost, and Lee was in full retreat. Obviously the only thing to do now was, if possible, to get back across the Ohio with the wreck of his jaded force.

This task proved, however, beyond even his superhuman powers of endurance. There was only one point at which they could recross the Ohio, and this was not reached until the night of July 18th. By that time it was held in force by the enemy, supported by several gunboats which shelled the crossing. It is extraordinary that, with his men starving and almost helpless to sit their horses, Morgan managed to hold out another week. At the ford 125 dead and 700 wounded prisoners were left, and when at last John Morgan gave up his sword to Colonel Way—whose own surrender he had, with characteristic audacity, demanded, but Way was not to be bluffed'—he had only 364 men with him. In twenty-four days the raiders had (*a*) ridden 1,000 miles through hostile country, (*b*) won several battles and skirmishes, (*c*) taken hundreds of prisoners, (*d*) destroyed *ten million* dollars' worth of Federal property.

Well may the late Colonel Henderson have remarked, in his splendid 'Life of Stonewall Jackson,' that 'the horseman of the Civil War is the model of the efficient cavalryman.'

There was an unkind suggestion at the North to hang or shoot Morgan for alleged dereliction of the rules of civilized war. But he escaped from prison and got back to the Confederate lines—to be shot dead while heroically leading a cavalry brigade at the battle of Knoxville on September 4, 1864. He had the supreme gift of leadership and of winning the confidence and love of those who followed him, *plus* his superlative powers as an exponent of the cavalry arm and its uses in irregular warfare.

THE SERVICE OF RECONNAISSANCE WITH SPECIAL REGARD TO DIVISIONAL CAVALRY.*

By Major v. CZERCHOW, Austrian Great General Staff.

COMPLAINTS over the shortcomings of cavalry in the reconnaissance service, especially in regard to the divisional cavalry, are by no means infrequent. It might be not uninteresting to seek for the cause thereof, because in doing this many a fault can be rectified. I have endeavored to combine the causes into groups, and in doing so may touch points which have, as a matter of fact, been touched on by other lecturers and writers.

1. Duty. The points and "*feelers*" of the service of reconnaissance are the patrols. While our regulations clearly define the duties of the security patrols, those of the reconnoitering patrols are defined only along general lines. Thus the expression: advance patrol, flank patrol, rear patrol carries in itself the tasks assigned to each, while the frequently occurring expression, "*information patrol*" is not so fortunate. In the sense of our regulations "*information patrol*" means a small body of troopers or infantrymen under a commander, sent out to seek the enemy or reconnoiter the terrain. The duty of the information patrol (expressed by its denomination), frequently supplemented only by designation of the road it is to take, is vague. The patrol can in most cases only perform part of its duties and if nothing more definite is required of it,

*Translated from *Kavalleristische Monatshefte* by M. S. E. Harry Bell, U. S. Army.

it will perform only that part of its task which appears to be most important to its commander. Whether this is agreeable to the intentions of the leader who sent out the patrol is doubtful and at most merely a matter of chance. The dilemma created is the more portentious because in most cases, the patrol being sent out very far, it will be found impossible to regulate its movements from the rear later on. I shall cite a few examples from which it will be apparent how many tasks may be given an information patrol, not mentioning those duties given a battle partol. These duties I will combine into three groups: (*a*) seek the enemy; (*b*) conduct when enemy if found; (*c*) reconnoitering the terrain.

(*a*) *To seek the enemy.* For instance, to ascertain whether or not the enemy is in B; whether or not in B, C, or D (of course only a small area); whether or not between A and B; if so, to correctly locate his position; whether the enemy has already reached or passed B; when he passes a definite point; whether from a definite point the enemy can be seen; whether to seek the enemy only in a stated direction; to reconnoiter behind an enemy ascertained to be in a certain locality; to ascertain if the enemy is being followed by additional parts of his army; to reconnoiter to where the enemy reported in B has marched; and in all of these duties ascertain the enemy's line of march, armament, strength, and at what time he reached a certain or definitely known locality, etc.

(*b*) *Conduct when enemy has been found.* The conduct of information patrols in this case is laid down in paragraph 241, of the regulations. Of course the instructions contained therein are only for general guidance, as everything depends on special conditions in which the different patrols encounter the enemy. Thus at the moment of encounter the first doubts will arise which will iufluence the conduct of the patrol. As a general rule the question then will be whether it will be more important to continue to observe the assigned line of march or the march objective or to keep an eye on the enemy. What is said next will explain this more clearly.

Shall report be made of having encountered a hostile patrol or not? Should the patrol, observing paragraph 227 of the

regulations, keep in touch with the patrol or shall it seek out the hostile main body, as laid down in paragraph 228? If the patrol received no orders covering this question, it will in the first place depend on the strength of the patrol whether or not risk detaching one of its members to carry a message back. To make a general principle of *not* reporting a hostile patrol is not to be recommended offhand. Should a hostile patrol appear from a direction in which no enemy was supposed to be, that fact may be an indication that stronger forces are following up that patrol. Of great importance also is the encountering of artillery patrols. In any case, sending back a report of having met a hostile patrol is easier than sending back any later reports, which latter will have to reckon with hostile interference. When the march direction of the two opposing main bodies are crossing each other it may happen that the encounter of hostile patrols are the only indications from which direction the enemy may be expected, as has been demonstrated in maneuvers. It is also difficult to form any judgment as to the size of the hostile force sending out a patrol by the size of the patrol encountered; in other words, do we encounter a patrol or a platoon? For instance, should our patrol work for a squadron, the encounter with twenty troopers (possibly three patrols combined) is important, as such a strong number, in an encounter between two opposing squadrons can produce a material effect by timely and (if not reported) surprising interference.

If, on the other hand, our force consists of a division of infantry and the hostile patrol comes from a direction where the enemy is known to be or advancing from, it would be bad policy to fritter away a trooper for sending a message.

In the case mentioned above (twenty troopers encountered, our strength one squadron) it would be dangerous, possibly, to keep touch with that patrol and not continue the march. A division of the patrol, one part keeping touch and the other part continuing the assigned line of march, may be the best solution of the question under these conditions.

The information patrol encounters a squadron: shall it keep in touch with it or continue its march? Only clear positive orders on the subject and proper strength, will enable the patrol commander to arrive at a correct decision. In all other

cases chance and fortune will govern whether or not he arrives at the correct decision. Should our own force consist of only one squadron or but little more, it might be best to keep in touch with the hostile squadron, for a bird in the hand is better than two in the bush. The same holds good when encountering a company of hostile infantry.

Take now the case of the patrol encountering a strong enemy on its line of march, the enemy debouching with one part of its column onto a different route of march. In this case the correct thing would be a division of the patrol; if its strength does not allow that, then only the partol commander's sagacity and training can decide which part of the enemy's column should be followed up, whether the stronger or weaker part. It may be of more importance to observe the weaker than the stronger part.

A similar case arises of the patrol encounters on its line of march an enemy who is debouching to another direction with his entire force. Should the patrol then proceed along its assigned line of march or should it follow the enemy? What should be done if this enemy is followed by another group retaining its original direction of march along the route the patrol has left?

Observation and discernment of security troops and main body is easy only in open terrain, difficult in covered terrain. If, in the desire to find the hostile main body, we attempt to break through the screen of the security detachments or to go around it, it may easily happen that we get too far to the rear and that it will be impossible, especially should the opponent consist of cavalry, to send word back to our troops in time to be of any use. For instance, if the patrol commander sees on the road a hostile regiment with one battery, formed into advance guard, support and an additional group, that group may be the enemy's main body or only a reserve for the advance guard. Should the patrol commander look for the main body following the formation he sees, it may easily happen, in a difficult terrain, that he looses touch entirely with the enemy. What he sees may also be a flank detachment.

(c) *Reconnoitering the terrain.* In this duty errors are committed in so far as the patrol receiving orders to simultaneously reconnoiter enemy and terrain, which can be done only seldom. On the other hand, there is no provision in our regualtions compelling the patrol commander to report valuable matters concerning the terrain not noted on the maps or which differ from what is shown on the map and which have come to his notice. This latter especially applies to roads, forests, and good points of overlooking the country.

If the enemy is weak and the terrain is open, two or more of the above cited duties may probably be solved by a small patrol, otherwise not.

If it is against regulations to send out an information patrol without giving it a definite task to perform, it is the more wrong to confound the expression "*information*" patrol with "*battle*" patrol. By combining a task of far reconnaissance with a merely hoped for but not definitely ordered battle reconnaissance the duties of the commander of the whole or of the group commander are transferred to the patrol commander who can, for that purpose, have neither the necessary force in men nor knowledge of the conditions in general. Most complaints of the shortcomings of the cavalry are based on bad battle reconnaissance, which matter is generallly overlooked in the orders issued by the commander of the whole.

It is not very easy to draw a sharp dividing line between far and near reconnaissance; this is not necessary, however, for they stand in close relation to each other, in so far as the tactical reconnaissance (battle reconnaissance) springs from and is based on the far reconnaissance. In any case regulations are clear enough in stating that we can not expect the information patrol to furnish the tactical reconnaissance, except in very rare cases. In addition, far more battle reconnaisance patrols than information patrols will be required.

Tasks to be given the battle reconnaissance would be for instance:

Definitely ascertain the grouping for march and strength of the enemy, especially how much he has of artillery; grouping of security detachments; time of arrival of leading elements of the hostile column at definite points in front of our troops; changes in the formation of the enemy's columns; debouchment of single units from the general march direction; number of

trains following the column; observation of the hostile cavalry; shape of battle formations; position of hostile artillery; breadth of hostile battle front; probable gaps in that front; position of the commander; of the reserves and their change of position; affairs of ammunition supply behind the hostile front, etc.

It is clear that when opposed to a comparatively equal enemy these tasks can be solved by a patrol only when the terrain is exceptionably favorable, while one information patrol can ascertain the coming up of a hostile column in any terrain.

In giving instructions to a battle patrol the space of ground in which it is expected to perform its duties should be definitely stated or some part of the enemy's force should be designated for observation. Divisional cavalry can solve the task of battle reconnaissance independently only when its commander is thoroughly instructed as to the entire situation and our intentions and when he still has sufficient patrols at his disposal. Both factors will be found present only in rare cases.

It should not be forgotten that according to paragraph 223, battle reconnaissance is to be carried out by infantry mainly and that not only in a terrain in which cavalry has difficulty in moving but also in absolutely open terrain, where the trooper would offer too prominent a target.

2. *Whose duty it is to send out a patrol.* According to our regulations this may be either the commander of the whole or the group commander, or the chief of staff. Even the patrol commander's immediate commanding officer can send out the patrol, provided the above mentioned officers have authorized him to do so—which is but seldom the case.

When sending out a patrol, the one sending it should be absolutely clear in his own mind what he wants the patrol to do. Practice shows how difficult this is; it takes much training to express a clear and definite will. It is my personal opinion that only he, who has gone through all the difficulties of a patrol commander in his subaltern days, is able to send out a patrol with definite and clear instructions; only such commanders can think themselves in the place of the patrol commander and judge what can be required of a patrol. As infantry officers have not many chances to practice the patrol service, and as the general duties of an infantry patrol are very different from those

of cavalry patrol, cavalry patrols should invariably be sent out by cavalry officers, not infantry officers. This especially applies to the far reconnaissance. For this purpose the cavalry commander should be thoroughly oriented by the commander of the whole as to the situation and intentions and should receive definite instructions as to what is desired—how he gains his ends to be left to his discretion, however.

3. *Strength of a patrol.* The strength of a patrol is not only dependent on how many reports are expected from it but also on the distance it is supposed to cover, as well as the task it has to perform. If the officer who sends out the patrol has carefully considered these points, he can accurately judge what strength the patrol ought to have. Very often he will have to reckon with the fact that the patrol will be divided before returning. I would insert here that it is advisable only in exceedingly favorable terrain to require the patrol to cover much ground when charged with reconnoitering a certain piece of country. As a rule a patrol rides along its road or somewheres where it can overlook that road; of course anything else it sees, falls into the sphere of its usefulness. But when the patrol can not overlook the space of country assigned it from its line of march it has to ride criss-cross, makes no headway and looses much time. It does not help the matter much to send single troopers to commanding heights to observe, for they can be sent only when the distance is very short.

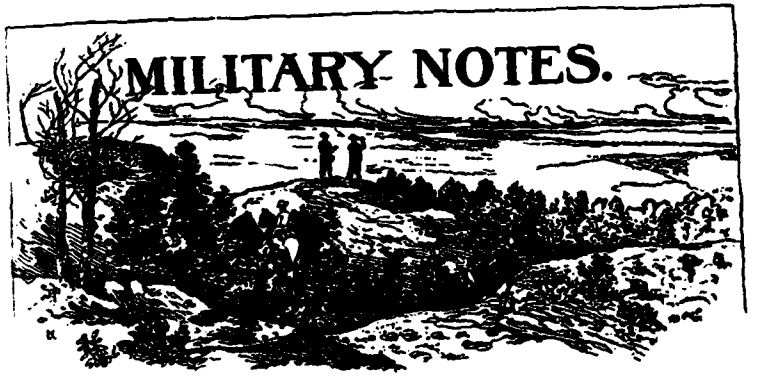
4. *Reports.* No attention is frequently paid to the important matter to whom, to where and when reports are to be sent. Message relay stations, lately inaugurated, better this condition somewhat. It is advisable to charge the patrol commander to send messages at certain times to certain places in addition to unexpected messages he may be forced to send. In case the commander of the whole diverges from the line of march, known to the patrol when leaving the command, all connection between patrol and command is lost. These two points deserve especial consideration.

5. *Limit of time for a patrol to stay out.* Very often the patrol is not instructed how long it has to stay out or how far it is to ride in the designated direction if it does not encounter the enemy. It is hardly practicable to send orders after a patrol

after it once has left the command, for it will be only by the merest chance if the patrol is overtaken. This neglect is bad, especially in our peace maneuvers. Patrols often travel very far away from the command, loose all, connection with it, and return in the evening exhausted and starved. In time of peace is advisable to either limit the distance the patrol is to cover or to give it definite instructions at what time it is to cease operations and return to camp.

6. *Screening duty.* This is the duty of the independent cavalry, of the divisional cavalry, and of all security detachments, but at no time the duty of information patrols. The latter may assist in screening by stopping a weaker hostile patrol or patrols, even attack them and make it difficult for them to send back reports. But to charge the information partol with screening is wrong, because reconnaissance and screening are diametrically opposed. Reconnaissance avoids battle; screening seeks it; screening is a stationary duty, confined to certain defined sectors, while reconnaissance must not be chained down by such commands. On the whole infantry will give better results in screening, when the terrain promises any results in screening at all. Forces utilized, therefore, are not lost, as they can be called back to participate in the battle when necessary.

7. *Training in Peace.* Reasons for failure of cavalry in the field exercises are in part to be found in the short distances separating the contending forces and partly in the limited space giving the partols in front of the infantry, and partly also in the rapid termination of the exercises. Thus the information patrols have not sufficient time at their disposal to properly observe and report; time also is lacking for the battle reconnaissance to supplement the far reconnaissance. These disadvantages can not be overcome entirely, no matter what corrective measures are taken. The distance between the contending forces has to be kept small; still patrols might be sent out early enough ahead of the infantry to catch the opponent very soon after he has broken camp or even while engaged in doing so.



LONG DISTANCE RIDES OF TWENTY-SEVEN CAVALRY PATROLS.

IN a previous report, an account was given in some detail of the ride of 186 miles in three days executed by officers patrols from twenty-seven different cavalry regiments. This year the performance was repeated with slight modifications. The distance covered was sixty-two miles a day for three days; on the fourth day thirty-one miles were covered in the morning and then at 2 P. M., the same day, all the patrols assembled at the Auteuil race track in the Bois de Boulogne and were reviewed by the President of the Republic accompanied by all the chief military personages of the government and the gentlemen most eminent in racing and horse raising circles.

Each patrol (six men) marched past in line with its officer in front, at a fast gallop, the total distance covered at this gallop being one and one-fourth miles. Four regiments from the German frontier, in garrison at Nancy, Sedan and Luneville, sent out not merely a patrol, but a whole platoon. In all twenty-seven regiments were represented, being all those stationed not over 200 miles from Paris.

I watched these patrols go by and it was altogether extr ordinary to see how fresh all the horses and men were. I could observe no trace of fatigue in either, though certainly must have been severely tried. Most of the horses were goi freely against the bit, and the officers mounts especially seem as keen and alert as if they had made only an ordinary mar

The last day's march of sixty-two miles was in a furio storm of snow, rain and wind, and the morning of the revie the thirty-one miles were made in a biting wind. The hors were beautifully groomed and the men as clean as if just o of barracks, yet no assistance had been furnished en rou Each patrol had cared for its own horses exactly as in ca paign, both on the trip and on the arrival in Paris.

In the evening a banquet was given the officers comman ing these patrols at which the Minister of War and the high mi tary and sporting dignitaries of France attended. There w no classification. Each officer received a small gold medal each man a bronze one, and each regiment a handsome bron statuette, in commendation of the ride.

These reconnaissances are without doubt of great value stimulating both officers and men to training and caring f their horses. All mounts were products of the regular remou of the Army and every man had to ride his own horse.

After a day of rest all these patrols were assembled at t Horse Show now in progress and the commemorative meda awarded.

The horses on arrival were all examined by a competen board. The newspapers state that the platoon of the Eigh Dragoons, which marched from Lunéville, shows remarkabl condition, not having a man or horse in any way injured o fatigued.

One patrol of the twenty-seven did not finish the ride fo some reason; three arrived with one member dropped on th road on account of his horse not being able to go on; all th others reached Paris complete, and it is asserted that all in juries, including sore backs, for the whole lot are of the mos insignificant nature.

T. B. M.

SABER vs. PISTOL—A SOLUTION.

THE strange swing of the pendulum of modern cavalry thought in Europe back to the lance, in place of the er, offers a solution, worthy of careful thought, to the eternal stion in our cavalry of saber vs. pistol.

All in the service know our two schools of thought on this ject, our two opinions, each absolutely fixed and sure of right. As these two opinions can never be reconciled, I ieve a solution would be welcomed by both.

Such a solution would seem to be indicated by the coming nge in the Russian cavalry, for within a year the front rank all the cavalry in the Empire will be armed with the lance well as the saber. This change will of course have a great ect on all the other cavalry of Europe, for the Russians have greatest numbers and are the only ones with experience in dern war; and since the Russo-Japanese War the greatest nges have been continually taking place in their army, this ng the latest.

The consensus of opinion here is that the lance is "par cellence" the arm for the shock action, and that its advan ages in this respect far outweigh its disadvantages in the ensuing melée; in other words the charge is either succesful or not, and for the successful side which smashes its opponent in the charge the ensuing melée will be more of a pursuing action. If the Russians can think this way, having, for the possible melée, only the saber in reserve, how much more should their opinion be considered by us who have the national weapon, the pistol, to fall back on in case of need. In fact the mere mention of our use of national weapon, in connection with the lance for the shock, produces the most favorable comment.

The possible objection that we might lose some of our mobility as mounted infantry or for dismounted action will hold no weight as can be seen by a study of the new Russian Cavalry Drill Regulations. In these, dismounted action is divided into two classes, "ordinary" and "in force;" the former

to be used under ordinary circumstances when the horses are apt to be moved, and the latter when there is no chance of the horses changing their places. In the first, two men out of three dismount and simply turn their lances over to the third man the horse holder, who passes his foot through the foot loop and his arm through the arm loop of the lances and swings all three out of the way behind his right shoulder; the same could be done as easily with four. In the second, when one man in six, or in the Cossacks one in twenty-five, is the horse holder, the lances are placed in line on the ground in front of the horses.

Besides being no handicap for dismounted action the use of the lance in place of the saber would solve two vexed questions; one the impediment of the scabbard to the use of the legs on the horse, the other, our lack of all skill in handling the saber. While the fault of the scabbard may be rectified in the new cavalry pack, I see no possible chance of our ever acquiring proficiency in the use of the saber, with our three years enlistment and the time necessarily spent in other work. Furthermore the use of the lance requires no particular skill, it being only necessary to hold it, point it and let the horse do the rest. While these two points may be of minor importance, yet they should enter into the final solution of the question.

It is true that the basis of this paper is the impending change in the Russian Army where the double rank is in use, yet I can see no possible objection to the use of the lance in single rank; and when the time comes, as it surely must, when we adopt the double line formation for mounted action, then with the lance for the shock and the pistol for the hand to hand work, we will be better armed than the European cavalry, and better armed than we now are. To prove this one need only ask the question, as true for 1, for 100, for 1,000 of for 10,000, given equal conditions which will win? The cavalry armed with the saber or pistol alone, that armed with the "saber and pistol," or with the "lance and saber," or that armed with the "lance and pistol? "One answer only would seem posible—the "lance and pistol "

Leaving aside all other questions, when the largest cavalry force in all Europe definitely adopts the lance as the most

suitable weapon for the mounted charge, and this with only the saber in reserve, I submit that the arming of the American Cavalry with the *Lance and the Pistol* is at least worthy of the most serious consideration.

N. K. AVERILL,
Captain U. S. Cavalry.

THE ARMY HORSE.

THE galloping horse, the thoroughbred, has been developed by careful breeding and by racing trials over a period of more than 150 years. The result is today a horse of quality and substance, superior in certain respects to any equine animal that has ever existed. The Arabs and other Eastern horses are the progenitors of the present thoroughbreds, but as the latter have been a continual improvement in speed and strength over the former, it would not now be wise to consider the Eastern horse as suitable sires for the class of horses required by the Army. Few people recognize the fact that the average cavalry horse must be up to carrying 267 pounds, assuming that the man alone weighs 150 pounds. All the light-weight horses, such as standard breds, saddle-breds, Morgans, and even coach horses, owe much to their superiority to the thoroughbred blood of their ancestors. The best type of the thoroughbreds would make superior cavalry horses, but to secure such in large quantities is not possible. For example, Ultimus of Mr. Keene is fifteen and three-quarter hands high and weighs 1,240 pounds. He is wonderfully muscled and is in all respects admirably adapted for weight carrying over rough ground for considerable distances at a fast pace. Among the colts at "Castleton," Lexington, Kentucky, were some that weighed 1,000 pounds at sixteen months of age. One of these superbly bred colts weighed 1,040 pounds at that age.

Mr. Thomas Hitchcock has two thoroughbred colts which at three years of age weighed 1,075 pounds and hunted the stiff Meadowbrook country, carrying considerable weight over

the high fences of that section. These same colts made an excellent showing at the Madison Square Garden in the five-foot jumping classes. They have fine loins, quarters and shoulders, also large bones and flat legs, and are extremely level-headed.

These cases are cited to show that the good thoroughbreds (not the weeds) have all the qualifications required for cavalry purposes—weight-carrying capacity, speed and endurance. The prepotency of that blood (above that of all other) and the peculiar fitness of the breed for army ends make such animals highly desirable for sire purposes. Mated with good sized farm mares the results should be fair good cavalry remounts, mated with the heaviest farm mares the results should be fair to good artillery remounts.

It is not intended to suggest that only by such means can we get desired results, but it is believed that there is no other way that would give such quick and consistent results. Good cavalry horses should have at least one-half of their blood strains from galloping stock (thoroughbreds.)

That is fundamental. For horse artillery the same requirement would be wise.

The following letter recently written by Major General Leonard Wood, Chief-of-Staff, tersely sets forth his views regarding this subject:

"Replying to your communication regarding the most suitable horse for cavalry purposes and the best way of breeding such animals, I beg to state that the primary consideration in the cavalry horse is the capacity to carry considerable weight over rough country for a long period and oftentimes at a rapid pace.

"The first condition eliminates a very light horse; the second and third require activity and endurance, and the fourth necessitates some speed. It is clear that certain types must be wholly eliminated and that suitable animals are to be found now in large numbers in very few localities in our country. This fact causes this department to take the keenest interest in the subject of breeding service horses. The temperament of these animals is hardly less important than either of the essential attributes suggested above.

"The principally recognized breeds of this country—standard, Morgan, Hackney, saddle—as is well known, are largely indebted to the thoroughbred ancestry for some of their most noteworthy traits. This fact helps to confirm the opinion that good, big graded mares, almost regardless of predominating strains, when crossed with selected thoroughbred stallions should produce fairly good cavalry horses. Probably the highest type of a charger would result from crossing a large thoroughbred mare, of excellent temperament and of big bone and muscle, with a stallion of similar qualifications. The Government cannot expect to secure such progeny as that would assure in sufficient numbers. The type of sire, however, crossed with good graded mares should give satisfactory mounts, and in general horses of much farm usefulness. If that policy of breeding were adopted by the farmers in the course of a few years the Government would be able to secure enough young horses of a proper type to satisfy its peace requirements.

"The following gives you a notion of what is now demanded of the service horse owned by officers.

"Suitable mount (charger) as published in General Orders No. 125, War Department, 1908, is hereby interpreted to mean a horse with a minimum height of fifteen hands, two inches, and with a miminum weight of 1,000 pounds. The horse should be of good appearance and of such breeding and substance as will enable him to carry his owner over humps of reasonable stiffness, including hurdles, ditches, fences and other obstacles simulating those which ordinarily would be met in going cross country.

"Thanking you for your patriotic interest in improving the horse of the country, I am, * * *"

In general, the ideal hunter, when properly schooled for military purposes should make a superior charger. Such a horse would fully satisfy all purely military requirements and would be good in the show-ring, in the hunting field, at steeple chasing, and possibly at flat racing. In a few words, the officer's charger should be of hunter type not less than half thoroughbred, 1,100 pounds or more in weight, about sixteen hands high (for officer of average height), and above all, level-headed.

Under our new system of remount depots in charge of skilled officers who have time to carefully select young horses, the service is getting better mounts than at any time within recent years; but the horses we are getting are still far from what they should be. If most of our valuable studs be shipped abroad it is clear that instead of an improvement there will be a retrogression during the coming years. That is a phase of the horse question which specially causes anxiety to the War Department.

The War Department is keenly interested in the proposition of the Agricultural Department to have the Congress enact a law whereby superior sires may be placed throughout the country in suitable districts. By this means farmers and breeders will be able to secure the services of high-grade animals at most reasonable rates, and there will be produced over the country young horses valuable for remounts. This policy is

simply carrying out what has been recognized in practically all old countries as a business measure and a necessity. Circulars 178 and 186 of the Department of Agriculture set forth the proposed plan. These circulars are respectively by A. D. Melvin and George M. Rommel, of the Bureau of Animal Industry, and contain information most valuable to all who are interested in this subject.

It is hardly worth while here to contrast the relative efficiency of two mounted commands of equal personnel but of unequal mounts. Other things being equal or nearly so, the cavalry that has the superior mounts (at the same time the conveyance and principle weapon) will easily win out.

If careful selections were made of both sires and dams of thoroughbred animals as regards substance, size, blood lines and temperament, leaving wholly aside the racing question, it is believed that within a reasonably few generations a horse highly useful for practically all cavalry ends would result. It would also be an animal of general utility purposes. This does not ignore the fact that the actual superiority of the thoroughbred has been effected by racing and consequently by eliminating those specimens that were weak from any whatever cause internal or external.

It is an unfortunate fact that the estimate of the thoroughbred by many of our officers has been made from the off-casts of the race track, the weeds that often had neither good conformation nor sufficient substance, and possibly were too nervous to support training.

Cavalry work of the future will more than ever require long, hard service, and at times fast going. Cold-blooded horses are not up to the latter. What is said of the cavalry horse, in a large measure, applies to that of the artillery.

There is a mistaken idea prevalent among officers of cavalry that the big fine hunter types in the hunting field and in the show-ring were primarily expensive animals. This as a rule is not the case, as may be ascertained by actual facts in connection with such horses as Taconite, David Gray, Overall, and many others that can be named.

If officers will purchase big, well formed, young horses, not less than half-bred, they have within their capacity the

making of $1,500 hunters and if they be specially well trained at the jumps they will have precisely such horses as now seem impossible to many of them.

It will be extremely unfortunate for the service if the officers sets as a standard for his charger the limitations of the average horse of the command he is leading or serving with. Following the principle embodied in that idea, the standard for officers' uniforms, equipment and mental preparation should be radically changed. An officer may, and will often be required to do some specially difficult and arduous piece of riding that would probably never be confided to enlisted men.

Above all, an officer's position and rank demand that his mount be larger and more sightly than that of an enlisted man. That accords with all other elements of his surroundings.

The following statement has been publicly expressed by the Chief of the Staff, who was voicing the views of the Secertary of War:

"Probably the highest type of a war horse would result from crossing a large thoroughbred of inherited excellent temperament and of big bone and muscle with a stallion of similar qualifications. Of course that is the ideal—the standard that would be set, but which, unfortunately, can probably rarely be reached. The crossing of the thoroughbred (either way) just described with any of the breeds just enumerated would also give us fine mounts far in advance of what we now secure."

In the Service Test for chargers at and near Bennings, May 18th, the horses that won first, second and third place were each carrying more than two hundred pounds and each about sixteen hands, one inch high and weighed between 1,125 and 1,200 pounds. The horse that came out first is practically a thoroughbred, the second horse is out of a saddle bred mare sired by a thoroughbred, and the third horse is about three-quarters thoroughbred.

In speaking of this test, the Secretary of War,* who was one of the patrol judges, stated:

"As a test, the ride was invaluable, and a notable success. As a race, it furnished good sport. The test brought out the best in horses and men. It was something of an experiment. Such a test has never been held here

*The Honorable Henry L. Stimson, Secretary of War, is an unusually bold rider to hounds.

before. Every horse was in condition to do better at the finish. ***The test developed that big, strong, and well-bred animals are the horses best suited for army use."***

The above represents the views and policy of the War Department.

By order of the Secretary of War,

LEONARD WOOD,
Major General, Chief of Staff.

A CAVALRY RESERVE.

1. Our militia cavalry forms but a small part of the organized militia of the country, and volunteer cavalry is slow to organize, equip and train after the outbreak of war.

Hence the necessity of listing in time of peace, persons capable with short training of acting as officers of volunteer cavalry during war.

2. The preparation of such lists under the Act of Congress approved January 21, 1903, (G. O. No. 57, W. D. 1909), has been a failure, because the examinations required are either too difficult or too academic for mature men or men of affairs; there is no certainty that persons listed will receive volunteer commissions at the outbreak of war; and in general, there is *no incentive* for the best horsemen of the country to seek to be enrolled in an eligible list of volunteer cavalry officers.

3. This may perhaps be remedied, by *issuing commissions* in time of peace to properly qualified persons as officers in the Cavalry Reserve Corps; accepting well-know horsemen who are graduates of recognized universities and colleges with a physical examination only; and prescribing for those horsemen who lack such diplomas, the examinations required by General Orders Number 57, War Department, 1909.

4. The main incentive will be the issuing of commissions, and it is believed that, considering the favorable results following the organization of a Medical Reserve Corps with its hundreds of distinguished members on active duty, it will embrace men of education and standing among the hunt-clubs, polo-clubs, riding-clubs and individual horsemen in general throughout the country.

5. Such a body of horsemen, though lacking technical knowledge of military drill and tactics, will insure for the cavalry a body of horsemen who in time of peace will be a powerful factor towards improving and building up its organization; and in war, will give a list of men of affairs, accustomed to handling men, who will be available as officers of volunteer cavalry.

6. Legislation is needed which will bring about the desired results, if practicable without extra cost to the government.

As *horsemanship* is the controlling factor, such legislation, need not and should not apply to the other arms of the mobile army, as horsemanship is of small importance to the infantry; and to the field artillery, technical knowledge of the gun far overshadows the importance of horsemanship.

The outline of a resolution for the action of Congress is appended.

Based on this Resolution, regulations should be formulated prescribing the qualifications necessary for appointment in the *Cavalry Reserve Corps*, one of which it is believed should be ownership of a charger coming up to War Department specifications.

C. D. RHODES,
Captain Fifteenth Cavalry.

AN ACT TO INCREASE THE EFFICIENCY OF THE CAVALRY OF THE UNITED STATES ARMY.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

That from and after the approval of this act, the cavalry of the United States Army shall consist of the regiments now authorized by law, and a Cavalry Reserve Corps as hereinafter provided.

SEC. 2. That for the purpose of securing a reserve corps of cavalry officers available for military service in the regular or volunteer forces, the President of the United States is authorized to issue commissions as first or second lieutenants to qualified horsemen, citizens of the United States, who are graduates of recognized universities or colleges and who shall be found physically and morally qualified for appointment; or who, lacking diplomas from such recognized universities or colleges, shall, after examination prescribed by the Secretary of War, be found physically, morally and mentally qualified to hold such commissions, the persons so commissioned to constitute and be known as the Cavalry Reserve Corps.

The commissions so given shall confer the holders all the authority, rights and privileges of commissioned officers of the like grade in the cavalry of the United States Army except promotion, but only when called into active duty as hereinafter provided, and during the period of such active duty.

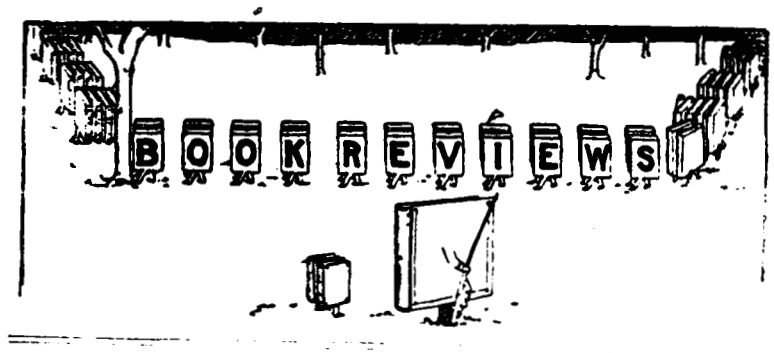
Officers of the Cavalry Reserve Corps shall have rank in said corps according to date of their commissions therein, and when employed on active duty as hereinafter provided, shall rank next below all other officers of like grade in the United States Army.

SEC. 3. That in emergencies the Secretary of War may order officers of the Cavalry Reserve Corps to active duty in the service of the United States in such numbers as the public interests may require, and may relieve them from such duty when their services are no longer necessary; *Provided*, That nothing in this Act shall be construed as authorizing as officer of the Cavalry Reserve Corps to be ordered upon active duty as herein provided, who is unwilling to accept such service, nor to prohibit an officer of the Cavalry Reserve Corps designated for active duty from service with the militia or with the volunteer troops of the United States, or in the services of the United States in any other capacity; *And provided further*, That any officer of the Cavalry Reserve Corps who is subject to call and who shall be ordered upon active duty as herein provided, and who shall be unwilling and refuse to accept such service, shall forfeit his commission; *And provided further*, That the President is authorized to honorably discharge from the Cavalry Reserve Corps any officer thereof whose services are no longer required.

SEC. 4. That officers of the Cavalry Reserve Corps when called upon active duty in the service of the United States as herein provided, shall be subject to the laws, regulations and orders for the government of the Regular Army, and during the period of such service shall be entitled to the pay and allowances of like grades in the Regular Cavalry, with increase for length of service now allowed by law, said increase to be computed only for time of active duty: *Provided*, That no officer of the Cavalry Reserve Corps shall be entitled to retirement or retirement pay, nor shall be entitled to pension, except for physical disability incurred in line of duty while on active duty.

SEC. 5. That in the organization of United States volunteer cavalry, officers of the Cavalry Reserve Corps shall receive preference in appointments to all grades including captain, first lieutenant and second lieutenant, under such regulations as may be prescribed by the Secretary of War.

SEC. 6. That all Acts and parts of Acts in conflict with the provisions of this Act are hereby revoked.



Protection in War:*

This work covers what is commonly called in this country "The Service of Security," but the author handles it on a large scale. The subject is viewed rather from the point of view of an army commander than of a detachment commander.

The author's views in regard to the handling of cavalry are of interest to cavalry officers. He describes in detail the manner in which the Germans contemplate using masses of independent cavalry in front of their armies. He calls this "the independent cavalry doctrine" and mentions General Von Bernhardi as its chief exponent. In regard to it he says (p. 82): "The doctrine is essentially German in its origin and its application to that army is possibly justified by the numerical superiority and high efficiency of its cavalry. It cannot, however, be accepted blindly by other armies, which do not possess these advantages." He comments on the cavalry duel which would probably result from an application of the German ideas, as follows: "The superior cavalry will gain much for its side by its victory. If we are sure of gaining the day in such a separate application of force, and the enemy is weak enough to give us the opportunity, we would be foolish not to

*PROTECTION IN WAR. By Major General F. J. AYLMER, V. C., C. B. Hugh Rees, London.

avail ourselves of it. * * * * * If the chances in a preliminary cavalry duel are not very distinctly in our favor, we make a mistake in entrusting to our cavalry a part of the whole result which is out of proportion to the importance of the separate force engaged. The defeat of our cavalry does not only mean the loss of so many men and horses, but it lowers the morale of the command in every grade, and decreases the value of our forces for subsequent use.

There is an evident anxiety on this point in the minds of many advocates of the independent cavalry doctrine, and expedients are suggested for minimizing the risks involved. Perhaps this is particularly noticeable in the case of the French, who may have to contend against a cavalry which is at any rate superior in numbers. Cyclist detachments, bodies of infantry carried in wagons or motors, or made extremely mobile by lightening the loads carried on the men's backs, and the celebrated *detachments mixtes* of the latest French school, are all suggested as methods of stiffening the cavalry mass."

There is also noticeable in the pages of General Aylmer's work a painful consciousness of the British inferiority in cavalry and he too has an expedient to offer. He recommends a "General Advanced Guard" composed of a division or corps of infantry with its complement of artillery and with all the cavalry that can be spared after providing for the security of the main body of the army. This "General Advanced Guard" is to operate from one to three or four days marches in front of the army. The cavalry commander is to be always subordinate to the commander of the "General Advanced Guard." The only distinction apparent between this "General Advanced Guard" and the ordinary conception of a body of independent cavalry with an infantry support is that it is given less latitude. It is made strong enough and kept close enough to the main body of the army to prevent its being destroyed before it can be supported. An action in which it becomes engaged is to be merged in the general conflict between the opposing armies.

The "General Advanced Guard" is to constitute a "Reconnaissance in Force," to ascertain the enemy's strength and dispositions and to gain the time and space necessary to enable the main body of the army to maneuver.

General Aylmer mentions the facts that the Japanese armies, although deficient in cavalry, did not make use of such a "General Advanced Guard" as he proposes; also that there is danger that the "General Advanced Guard" may be caught between two strong hostile columns and crushed. His replies to these objedtions are interesting if not convincing. The disadvantage of a "General Advanced Guard" of all arms appears to be that it would be lacking in mobility; it could reconnoiter only in one direction and it could not decline combat when in the presence of superior hostile forces as a body of independent cavalry could do.

Tripoli.* This is a small book, seven and one-half by five inches—of 118 pages which gives narratives of the principal engagements of the Italian-Turkish War in Tropoli from October 23, 1911, to June 15, 1912.

Accounts are given of twelve engagements, some of which were mere skirmishes, generally being attacks of the outposts of Tripoli by the Turks and Arabs, with few losses on either side, while others were more serious as to losses but none of them rose to the dignity of a battle either as regards the numbers engaged or the casualties. However, there were several desperate fights and in some instances there were hand-to-hand conflicts where the bayonet, saber, clubbed muskets, hand grenades and even stones were used with good effect.

Inasmuch as this is the first, so-called, war in which several modern inventions, such as the æroplane, searchlights, wireless telegraphy, motor cars and dirigibles have been used in the field in war, it is but natural to presume that much attention would be given them in a work of this kind. However, the use of the æroplane is noted only four times and then but briefly; the employment of searchlights is mentioned six times and more in detail; while mention is made of the dirigibles but twice.

*"TRIPOLI." A narrative of the principal engagements of the Italian-Turkish War, during the period from October 23, 1911, to June 15, 1912. By Lieutenatnt Colonel G. Ramaciotti, Commanding First Battalion, Second Australian Infantry. Hugh Rees, Ltd. London. Price, 2 s. 6 d.

On one of these occasions it is said that: "In this phase of the action the dirigible P 3 dropped bombs on the retiring Turks." Nothing is said as to the effect of the dropping of these bombs. It is reported that motor cars were used satisfactorily for delivering ammunition and supplies and in removing the wounded.

It is stated in this book that the Italian officers were armed with rifles and that "*War Dogs*" were employed on the line of outposts or outside of the line of entanglements of some of the out-works.

On War of To-day.* A new book by von Bernhardi. This is gratifying news to everyone interested in the cavalry service. But although his latest book contains a great deal of interesting matter relative to cavalry, it is not exclusively a treatise on cavalry. It is, as might be inferred from the name, written from the point of view of the immortal Clausewitz. The author points out that Clausewitz never completed the great work which he undertook. It may be doubted if it can ever be really completed so long as war continues to present changes in its external forms. While war remains the same in its essential characteristics, the methods of carrying it on differ from one epoch to another on account of changes of conditions which von Bernhardi discusses in a lucid and interesting way in this work. It is a worthy continuation of the work of Clausewitz and contains moreover a singularly frank description of European international politics and an able forecast of the changes which must be made even in the methods now contemplated of marching, maneuvering and supplying the immense armies which European nations will put in the field in the event of war.

The author claims that the importance and value of cavalry have increased with recent changes of conditions, but he believes that its chief rôle is in its independent employment for

*"ON WAR OF TO-DAY." By General Frederich von Bernhardi, General of Cavalry, Retired. Authorized translation by Karl von Donat. Vol. I. Principles and Elements of Modern War. Volume II to follow this fall. Hugh Rees, Ltd. London. Price, nine shillings net per volume.

the purpose of gaining strategic advantages, rather than in its employment on the battle-field. The cavalry should be employed on the flank or in rear of the hostile army and should come up in time for battle as did Stuart at Gettysburg. The disadvantages of loss of communication with the cavalry which were felt by Lee in that campaign will no longer exist because the cavalry will be able to maintain its communication with its own army by means of motor cyclists and wireless telegraphy.

An idea of the contents of the book may be gained from the chapter headings. They are: The Secret of Modern War; Constancy in War; Experience of War and Speculation; Armies of Masses, Forces and Numbers; The Modern Arms and Means of Defence; Technical Appliances in Warfare; The Importance of Cavalry; March Technics; Supplies and Lines of Communication; Methodics in moving Armies; Self-reliance; Method and Command: The Importance of Permanent Defences; The Means of Naval Warfare.

The translation is by Karl von Donat and is literal rather than liberal, but is clear and precise.

Editor's Table.

WHAT HORSE FOR THE CAVALRY?

Regarding the book under the above title, Major F. A Boutelle, U. S. Army, Retired, writes as follows:

"Mr. Spencer Borden's book, 'What Horse For the Cavalry,' is believed by the writer to be the most valuable con-

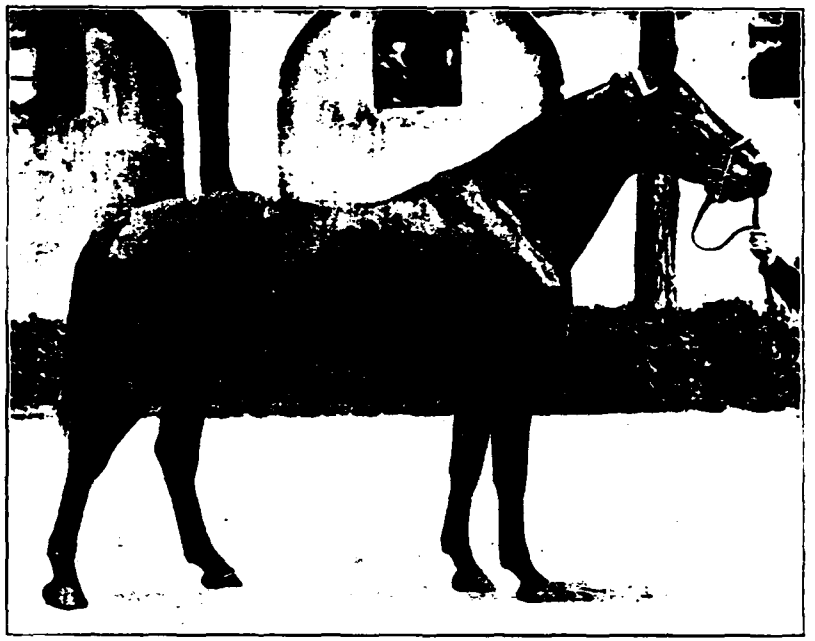
DONALD.
Morgan (America). First prize Vermont State Fair, 1910.

tribution to the cavalry horse literature of the day and perhaps of any day.

"Mr. Borden has had unusual opportunities and has seen the best horses for service of the world, with what would appear

to be the eyes of a seasoned campaigner. If he has not seen service, the army has missed a very valuable officer. It is hoped that he and others will continue the good work until the legs are written off the 'so-called' suitable horse for cavalry service which we have so often seen described."

Before receiving the above from Major Boutelle, permission had been granted for the reproduction in the CAVALRY



A Typical Nonius Stallion at Mezohegyes.

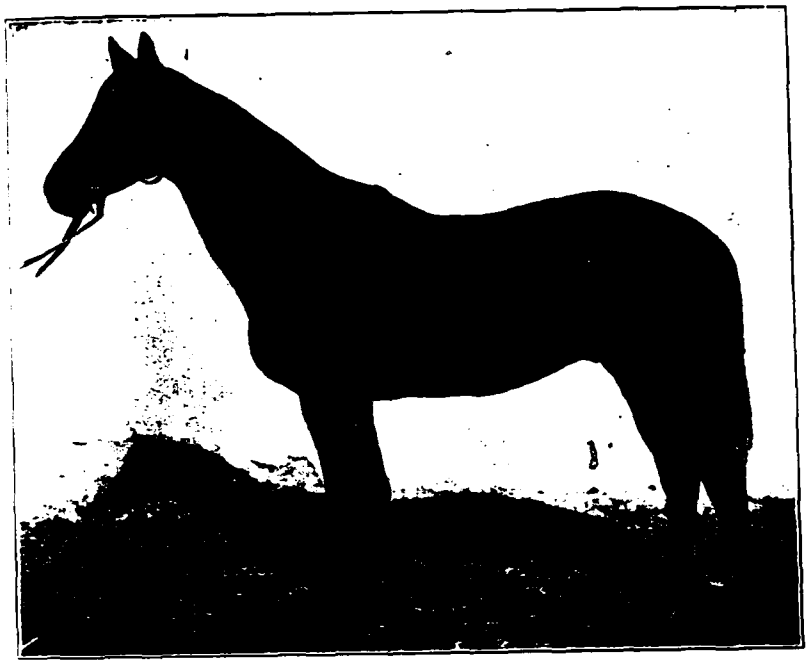
JOURNAL a few of the many illustrations contained in his book and to publish extracts from his work.

In the preface he says: "They tell us that the United States possesses more horses than any country in the world excepting Russia. The figures given are 24,016,024 horses in 1910, as against 21,625,800 in 1900, an increase of eleven and one-half per cent.

"Mr. Rommel, Chief of the Animal Industry Division of the U. S. Department of Agriculture, writing for the JOURNAL

of the U. S. Cavalry Association for November, 1911, analyses these census figures in a manner to prove that these great number of horses do not represent animals available for the Army."

He then goes to show that not one in seventy-five of the licensed stallions in the States mentioned could, by any stretch of the imagination, be considered a probable sire of a cavalry horse.



SLIEVE CALLION.
Of the Kisber Stud of Hungary.

He also says in the preface: "A horse cannot be bred and reared and trained in less than six years, one while the mare carries him, three while he grows to an age where his training can begin and two for him to mature and complete his education. We cannot go 'shopping' for horses because we have plenty of money.

"Now, a supply of horses cannot be met by any off hand

act of the will. We cannot say 'Let there be horses!' and horses appear.

"It is time Americans were wakened to the true conditions. With facilities and resources at our command this country should never have to seek a horse supply for its army outside its own borders, as would be necessary in case of war within the next ten years."

YOUNG O-BEYAN.
A pure Arab of the Hungarian Government Stud at Babolna.

He then goes on to state that nearly all European nations have some scheme of government encouragement for horse breeding to insure a good supply of horses for the use of their armies. He also describes the several great studs that he visited in Europe, he having been given unusual facilities for inspecting them on account of the letters he carried from the high officials of this country.

Speaking of the custom of docking the tails of the horses, after having extolled Kaiser Wilhelm II of Germany for his good qualities, he says:

"Nevertheless, Kaiser Wilhelm the II has allowed himself—also his father, Kaiser Frederick—to be mounted on a horse with a docked tail, on the bronze statue at the end of the great bridge over the Rhine at Cologne. This is shocking as a matter of taste and probably unprecedented in all plastic art. The writer knows of no other example.

"Who would ever think of Napoleon, or Frederick the Great, or Alexander, or Wellington, or George Washington, riding a horse with the tail of a rabbit. In our own day, try to picture Lord Roberts or Kitchener on a bob-tailed horse. However, *chacun a son gout!*

"But one cannot fail to be reminded of our own General Phil Sheridan, one of the greatest cavalrymen of all history. It is said that as he lay dying at his home in Washington, his brother came to see him one morning. Colonel Sheridan asked if there was anything he could do for the General. He replied: 'Yes, Mike, make me a promise.' 'Whatever you ask, Phil, I will try and do as you wish.' 'Well, Mike' and the weary eyes wandered out of the window and rested upon a bronze equestrain statue outside, 'Mike! When I am dead, if they put me on a horse, for God's sake see that it is a better one than that."

PROMOTION AND ORGANIZATION.

The attention of our members is particularly called to the valuable contribution in this number of the JOURNAL by Captain Moseley on the subject of "The Relation of Promotion to Organization." Coming, as it does, from the cavalry representative on the Committee of the General Staff that has had in charge, for a year or more, of the preparation of a scheme of organization for our mobile army, it should receive the earnest attention of our cavalry officers.

Regarding the paragraph which Captain Moseley quotes from the July number of this JOURNAL, and which he criticises as giving a wrong impression, the Editor alone is responsible for the language used, and in fact, for the whole editorial from which this extract is taken. However, a re-reading of the paragraph in question, in connection with the entire editorial, will show, it is believed, that the article is along the lines of previous ones on the question of "One List for Promotion," and which have had the hearty approval of the Executive Council of the Cavalry Association as well as of all cavalry officers with whom the matter has been discussed. It is possible that the objectionable part of the paragraph quoted is contained in the sentence which reads as follows: "Rumor has it that this long delay in submitting this report has been caused by a failure to reach an agreement as to how the resulting promotion that would follow the reorganization should be apportioned." Judging from Captain Moseley's article this rumor was not correct but at the same time that opinion had been expressed by several cavalry officers on many occasions.

However, to discuss the report of the committee the leading portions of which, as far as relates to the subject of promotion, have been published in the service periodicals, it is believed that the conclusions arrived at and recommended for the equalizing of promotion, whenever an increase or decrease is made in any arm of the mobile army, is correct and in accordance with the principle enunciated in the May, 1912, number of the CAVALRY JOURNAL, which is as follows:

"The acceptance of the principle that the increase or decrease of the number of officers in any arm shall be borne by all the arms, in all grades, share and share alike, officers thus transferred to another branch to rank in the branch to which transferred as they would have ranked therein had they been originally commissioned in the branch to which transferred."

At the same time it would be of interest to know how this committee arrived at the conclusion that "the practical application of the straight one list principle was found to present difficulties impossible to overcome with justice to all concerned." What are these difficulties and how can the acceptance of this principle do any injustice to any officer?

However, in the opinion of your Editor, this report does not go to the root of the evil of the inequalities of promotion in the army, although it may possibly cure some of the defects of the present system of promotion as regards the mobile army. It will still allow one officer who has through luck gained a grade over a brother officer to take precedence over him although the former may be his junior by years. There are many officers now in the service who are still captains while their classmates are majors and this rule of promotion will not prevent this happening again in the future although probably not to so great an extent as under the old system.

On the whole, this plan is a step in the right direction but it fails by a long way in curing the evils of inequalities of promotion as illustrated in the comments on the proposed rules for relative rank and promotion, page 244.

Publisher's Notice.

EMERY, BIRD, THAYER COMPANY.

It is hardly necessary to call attention to this well known firm of Kansas City, Missouri, as nearly all officers of the Army have been, at one time or another stationed in some garrison in the middle west and in consequence thereof have been patrons of this large department store.

Their guarantee that all goods found not satisfactory, even after having taken the same home or having received it by mail or express, is one of the many good points about trading at this store, which has proved to all who have traded with them, that they are reliable always and everything purchased there, by mail, or by person, is of the best quality.

It will help the Cavalry Journal if you mention it when writing.