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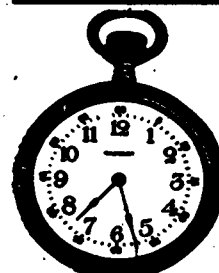
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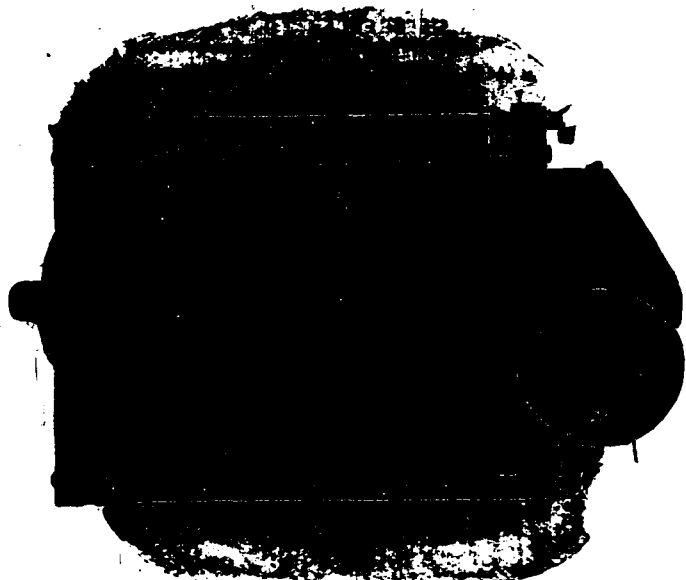
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No. 100

CAVALRY INSTRUCTION.*

BULLETIN
No. 18.

WAR DEPARTMENT,
Washington, October 3, 1912.

With a view to standardizing the instruction imparted at the Military Academy and at the various service schools on the subject of the employment of Cavalry, the following is announced as the policy of the War Department in respect to the use of that arm:

1. Mounted action is the main role of the cavalry arm and its organization, armament, and instruction should be with a view to rendering it effective in such action.

Dismounted action is, however, a very important role of the cavalry, and neither an organization nor the method of instruction which fails to provide for the effective use of cavalry dismounted will enable it to perform fully its functions in war.

2. The organization should be such as to permit of the greatest mobility, which is the essential quality of the cavalry, while providing units of great smashing power in the charge and a sufficient number of rifles to make effective its use when required as a dismounted force.

3. Cavalry must maneuver freely and widely without fearing too much for its rear; and being often at a distance from the main body of an army, its commander must be clothed with authority to conform to actual conditions.

*Reprinted by request of the Chief of Staff of the Army.

4. While the chief task of the cavalry is to assist the other arms in accomplishing the common object, its role is often of primary importance. The action of cavalry must be bold and daring; it must, whenever practicable, assume the initiative, seeking out the enemy and placing him upon the defensive.

5. The principal weapon of cavalry in mounted action is the horse and the force of impact should be utilized to the utmost. The terrain and nature of the operations will determine which of the other weapons must be used.

6. When circumstances permit, cavalry opposed to cavalry should fight mounted, thus retaining the mobility and power of maneuver necessary to its security and success.

7. The historical value of cavalry, including the experience and evolution of our own and that of other countries, must be carefully studied, and due consideration should be given to the greater magnitude of our future cavalry operations as compared with our experiences since the Civil War.

8. The use to which cavalry should be put in campaign is summarized as follows:

- a. To seek and destroy the enemy's cavalry.
- b. Screening, contact and reconnaissance.
- c. Seizing and holding important advanced or isolated positions, thus delaying the advance of the enemy until the arrival of the other arms.
- d. To operate on the flank and in rear of the enemy.
- e. Raids and other enterprises require great mobility.
- f. The mounted charge at the opportune moment against Infantry or Field Artillery.
- g. Energetic pursuit of a retreating enemy or covering retreat of its own forces.
- h. When none of the above roles has been assigned to it, cavalry may go to the assistance (dismounted) of hard pressed infantry to fill gaps in the firing line.

By order of the Secretary of War:

W. W. WOTHERSPOON,

Major General, Acting Chief of Staff.

Official:

GEO. ANDREWS,

The Adjutant General.

THE STONEMAN RAID.

BY MAJOR GENERAL GEO. B. DAVIS, U. S. A., (RETIRED).

THE operations which I shall attempt to describe in this paper were of considerable importance as they presented the first conspicuous example of the separate employment of cavalry on such a large scale as to enable it to rely entirely upon its own resources, and to operate at a considerable distance from its supporting infantry. This form of employment was not entirely new. During the preceding year General Stuart had conducted two brilliant expeditions against the enemy, in one of which he had passed completely around the Army of the Potomac; but these operations had been otherwise barren of results, save to show that there was a field of employment for mounted troops that had not yet received the attention which it deserved.

In the operations upon which the cavalry of the Army of the Potomac was about to engage something more was intended than had been accomplished by General Stuart; for it was General Hooker's expectation that General Stoneman's command was so formidable in point of strength that, on reaching the rear of the Army of Northern Virginia, he would be able to check its expected retirement in the direction of Richmond until it could be supported by the main body of the Army of the Potomac. But this expectation, as we shall presently see, was not to be realized.

In the first year of the war it had been easier to raise regiments of cavalry, than to recruit the organizations of infantry which constitute the substance of an army in the field; and the States, after the first enthusiasm for enlistment had passed, were anxious to fill their quotas with mounted troops. As a result many cavalry regiments were raised and accepted before the War Department realized its mistake and reached the conclusion—to which it adhered with some consistency to the end

of the war that no more mounted regiments would be authorized or accepted as a part of any call that might be made upon the States for volunteers for the period of the war, or for a shorter term of enlistment. The Army of the Potomac received more than its share of these organizations which were employed upon all sorts of duties, none of which contributed materially to the success of its military operations. But efforts to correct these conditions were put forth at a much earlier date than is generally supposed, and the grand division organization of the Army of the Potomac under General Burnside shows a cavalry division of two brigades, under General Pleasanton, as forming a part of the Right Grand Division; while a brigade of four regiments under General Averell was attached to the center, and a brigade of five regiments under General Bayard to the Left Grand Division. We have here the equivalent of two large cavalry divisions as the possible nucleus for the organization of a cavalry corps.

While it may be conceded that each of the Grand Divisions, composed as it was of two corps of infantry, would need as large a force of cavalry as had been assigned to it in the Burnside organization, in the event of field operations being undertaken, the conclusion cannot be escaped that cavalry so attached however efficiently commanded, was in no condition for work at a distance from the main body of the organization of which it formed a part. And the substantial merit of General Hooker's reorganization of the arm will be found to consist in the idea that the cavalry of the army was to be so organized as to be entirely sufficient to itself, and able to operate independent of the infantry, and, if need be, at a considerable distance from it.

In order that the cavalry might be employed in large bodies it was first necessary that it should be given an appropriate organization, and placed under the control of able and experienced commanders. The tendency to organize the cavalry into larger units than regiments had been apparent at a relatively early date, going back, indeed, to the Peninsular Campaign of the preceding year. Nor was cavalry wanting in brave and resolute commanders. Buford had shown his skill and resourcefulness as the commander of a cavalry brigade in the Virginia Campaign of 1862, and Pleasanton, Gregg and Bayard

had rendered intelligent and useful services with similar commands in the same theater of military operations. But the brigades were attached to other organizations, and were too small for independent undertakings. It should not be lost from sight, also, that the spirit of self-confidence, which is so essential to separate cavalry operations, had yet to be developed. It has been said that the cavalry of the Army of the Potomac "*found itself*" in its combats with the enemy in central Virginia in the spring and early summer of 1863. And this statement is true. Brigades and divisions under Buford and Gregg, Grimes Davis, Averell and Pleasanton showed, on many brilliant occasions, that they were no longer afraid of the enemy, and that the redoubtable Stuart was to have his hands more than full in the brief period that was to elapse before he was to be removed by death from the scene of his brilliant activities.

The order of reorganization was issued on February 5, 1863.* The unwieldy arrangement of grand divisions was swept away, leaving the army corps, seven in number, as the largest units of infantry organization in the army at large. The cavalry was given a corps organization and placed under the command of General George Stoneman who had but recently been assigned to the command of the Third Army Corps. Stoneman was an officer of dragoons who had had considerable service on the Indian frontier before the outbreak of the war. The good reputation for efficiency which he had gained there had been substantially added to during his service as chief of cavalry and as an infantry commander in the Army of the Potomac. The division commanders were wisely chosen; Pleasanton was already in command of a division, Buford, Averell and Gregg were in command of brigades, and Buford was assigned to the most important of the smaller organizations—the "*regular*" or "*reserve*" brigade which was at first regarded as a separate command, but was subsequently assigned to the first division under Pleasanton.

At the beginning of April, 1863, General Lee still confronted the Army of the Potomac in the trenches from which General Burnside had vainly attempted to dislodge him in December of the preceding year, and the condition of the army and the ground

*War Records, Vol. XXV, Part II, p. 51.

was such, in early April, as to suggest the propriety of a forward movement. General Hooker determined to take advantage of the favorable weather situation by an operation in the nature of a turning movement, which was to begin on April 13th. His plan was to leave Sedgwick with the 6th Corps, supported by Reynolds and Sickles, who was to cross in the vicinity of Fredericksburg and assault the enemy's position at Marye's Heights and Salem Church. While the attention of the enemy was thus engaged, he proposed to move up the river with the remainder of the army, including Reynolds and Sickles, who had been withdrawn from Sedgwick's command, and place himself on the left flank and rear of the Army of Northern Virginia, passing the river by pontoon bridges at the nearest fords.

In the general plan of campaign thus outlined the cavalry was to play a new and important part. After defeating a mixed force of Confederate cavalry and infantry that was posted in the upper reaches of the Rappahannock and Rapidan, Stoneman was to pass, by a wide sweep to the south and west, to a position between General Lee's army and Richmond, destroying the principal railroads and bridges, especially such as formed a part of General Lee's lines of communication.*

There are two routes by which the Army of the Potomac might have approached Richmond; one by Culpeper and Gordonsville was, and still is, the one favored by strategists; the other by Fredericksburg was chosen by the several commanding generals of the army, from Burnside to Grant, under some pressure from the administration, as the one least calculated to endanger the safety of the city of Washington. Burnside, on assuming command in 1862, had withdrawn from McClellan's position at Warrenton and, transferring his army to Fredericksburg, had met with a crushing defeat, and Hooker, somewhat against his judgment, had adopted substantially the same line of operations. As an Union advance into the open country toward Gordonville was always possible, General Lee had occupied that region by a force of cavalry sufficient to resist the advance of the enemy, should he attempt a movement in that direction. So that Hooker had to deal with the main body of General Lee's army in his immediate front and, with

*War Records, Vol. XXV, Part I, pp. 1,065-1,067.



SKETCH MAP OF NORTHEASTERN VIRGINIA.

the cavalry, at times supported by infantry, which formed a constant menace to his right flank. It was with the force last described that General Stoneman had to deal. But General Stoneman's instructions contemplated something more than this. He was to place himself in General Lee's rear, in a position in which he would be able to hold the Confederate army in check until reinforcements could reach him. Nothing came of this, as we shall presently see, although Stoneman kept the tryst and, with diminished numbers, stood ready to delay any of the forces of General Lee that Hooker might drive in his direction.

During the inclement season that operated to prevent the execution of General Hooker's plan during the last half of the month of April, the cavalry corps had succeeded in establishing itself on the line of the Orange and Alexandria Railway, with headquarters at Warrenton Junction. The weather having shown some signs of improvement, General Stoneman was directed, on April 27th, to repair to Warrenton, on the following day, where he was to receive his final instructions from the commanding general of the army of the Potomac. These required Stoneman's command to cross the rivers somewhere between Rappahannock and Kelly's Fords. After the crossing had been accomplished the command was to be divided, one portion taking the route to Louisa Court House, by Raccoon Ford, while the other was to complete the operations, already begun, along the line of the Orange and Alexandria Railway. The instruction contemplated a junction of the cavalry with the main body of the army, but were not explicit as to where the meeting should take place, further than to suggest the line of the Pamunkey River as an immediate objective, where General Stoneman was to take up a position with a view to prevent the retreat of the Confederate army in that direction should the Army of the Potomac succeed in accomplishing its defeat in the operations which were about to begin in the vicinity of Chancellorsville. As will presently be seen, the fortune of war prevented the junction of the two commands, which were only united, at the close of the campaign, when the Union army had retired to its old camps on the north bank of the Rappahannock, in the neighborhood of Falmouth.

The bad weather which had so seriously interfered with the movements of the cavalry, and had prevented the main body of the infantry from moving at all, continued during the crossing of the rivers and finally compelled Stoneman to start on his journey with a diminished force of artillery and without wagons or pack animals. The discouraging climatic conditions which attended the beginning of the march do not seem to have extended to the spirit of the officers and men of the command of whom General Stoneman says in his report: "I take the occasion to say that from that time to the completion of the expedition I never, under the most trying circumstances and the most discouraging prospects, saw a look, or heard a word from officers or private soldiers that indicated doubt or fear, nor, during the whole trip, did I hear a murmur or complaint. Each appeared to vie with the other as to how much, instead of how little he could do to forward the undertaking, and to look upon the expedition as his own personal affair. All felt as if they were going forward to the accomplishment of an object of the greatest importance to the army and the country, and they engaged in it regardless of the future or the consequences."

Excluding the division of Pleasanton, which remained at Falmouth, the two divisions which accompanied General Stoneman at the beginning of the movement consisted of 9,895 men,* accompanied by Robertson's and Tidball's batteries of horse artillery. On April 30th, Averell's division was ordered to continue his work along the upper waters of the Rappahannock. On the same day Stoneman himself, with Gregg's division, Buford's brigade and Robertson's battery, some 4,500 strong, with only such supplies as could be carried on the saddles of the officers and men turned in the direction of Raccoon Ford with a view to a crossing at the Rapidan. Assuming that the ford would be defended, Buford's brigade crossed at Mitchell's Ford, some miles below and, by a flank movement, caused the defenders of the ford to seek safety in flight. The crossing was completed at about 10:00 o'clock on the night of April 30th, when it was learned that General Stuart had crossed at Somerville Ford the same morning and had passed in the direction

*War Records, Vol. XXV, Part I, p. 1,067.

of Fredericksburg. Had Stoneman been a few hours earlier, or had Stuart been delayed in his crossing, a decisive encounter would have been inevitable.

On reaching the south bank of the Rapidan, Stoneman, having learned of Stuart's movement in the direction of Chancellorsville, was able to address himself to the operations of the raid, and to make such a distribution of his forces as would be calculated to accomplish the purpose of the expedition. To that end Gregg was sent in the direction of Louisa Court House, where he arrived at daybreak on May 2d. Buford, taking a more direct route by way of Verdierville, crossed the North Anna and encamped on its south bank on the night of May 1st. Gregg having the larger command was to operate along the line of the Virginia Central Railway and the upper James with a view of reaching the canal above Richmond, while Buford was to turn to the southeast where he was to interrupt General Lee's communications with that city.

After crossing at Raccoon Ford on April 30th, General Gregg marched in the direction of Orange Court House and reached Orange Spring before noon. From a captured cavalry outpost he learned that a wagon train had just passed in the direction of Spottsylvania and detached a small party in pursuit. Having received peremptory orders, however, to move on Louisa Court House this party was recalled and, leaving Orange Spring at 6:00 P. M., the command found itself in the vicinity of Louisa Court House at 3:00 A. M., on May 2d. Here preparations for an attack were made but, on advancing, no enemy was found and the Orange and Alexandria Railroad was destroyed for a distance of five miles. On the afternoon of May 2d, the march was resumed, crossing the South Anna River late in the day, and the division encamped at Thompson's Cross Roads where the headquarters of the corps had been established.

General Stoneman's plan of operations was now disclosed to his subordinate commanders. Three small columns composed of the 12th Illinois Cavalry under Lieut.-Col. Hasbrouck Davis, the 2d New York Cavalry under Colonel Judson Kilpatrick and the 1st New Jersey and 1st Maryland under Colonel Sir Percy Wyndham here separated from the main column. Wyndham marched in the direction of Columbia on the James River, where

the canal aqueduct at that point was ordered to be destroyed. Its destruction was attempted but the structure was of such a massive character as to resist all attempts in that direction with the means at hand. At Cedar Point the bridge across the James was destroyed, with four canal barges. The canal itself was cut in several places; some injury was done to the locks and gates, and considerable quantities of subsistence and other stores were destroyed. Colonel Wyndham's column rejoined the main command at Thompson's Cross Roads on May 4th after having marched fifty miles in eighteen hours.*

Gregg himself with the 1st Maine and 10th New York Cavalry moved down the South Anna from Thompson's with a view to destroy the bridges on that river between the Cross Roads and the Virginia Central Railroad. Captain Wesley Merritt of the 2d Cavalry was overtaken at the first bridge, which he had succeeded in destroying. Two bridges farther down the river were burned, the last to go being the Ground Squirrel Bridge on the Virginia Central Railway. Lieut. Col. Smith with Captain Merritt's squadron was then sent to destroy the railroad bridge across the South Anna near Ashland but, finding it strongly guarded, its destruction was not attempted. Gregg's command having completed the work assigned to it, was reassembled at Thompson's and Yanceyville on May 4th, the portion under his personal direction having marched 106 miles in 38 hours.†

Colonel Kilpatrick with his regiment, the 2d New York Cavalry, left Thompson's at 2:00 A. M., on May 3d; at daylight he was within fifteen miles of Hungarytown Station on the Richmond and Fredericksburg Railroad; as he had no means of knowing what force of the enemy would be encountered in the country to the north and northeast of Richmond, he concealed his command during the day and a part of the night. Hungary was reached at daylight of the 4th where several miles of track were destroyed. Passing to the Brooke turnpike he pushed back the defending forces under General Winder and turned down the Chickahominy to the Meadow Bridge which he burned. On the following day (May 5th) Colonel Kil-

*War Records, Vol. XXV, Part I, p. 1,085.

†War Records, Vol. XXV, Part I, pp. 1,080-1,083.

patrick surprised a small force of cavalry at Ayletts. Turning out of the valley of the Chickahominy he crossed the Mattapony, where he destroyed the ferry, reaching King's and Queen's Court House at sundown, where he was joined by a portion of Colonel Hasbrouck Davis command which had become detached from the main body. At 10:00 o'clock on the morning of May 7th he reached shelter at Gloucester Point, opposite Yorktown, having marched nearly 200 miles in less than five days.†

Lieut. Col. Hasbrouck Davis with the 12th Illinois Cavalry was to operate on the line of the Richmond and Fredericksburg Railway which constituted the principal line of supply for General Lee's command. He struck the railroad at Ashland on the morning of the 3d, where he destroyed an important bridge and a small amount of track. The Virginia Central Road was reached at Hanover Station where a trestle and the depot buildings, with a considerable quantity of stores, were destroyed. Turning in the direction of Hanover Court House, Colonel Davis marched to within seven miles of Richmond where he bivouacked, taking the road to Williamsburg early the next morning. At Tunstall's Station on the York River Railroad a train was encountered containing a force of Confederate infantry which was attacked, but without sufficient success to warrant the loss that would be occasioned were the attempt persisted in. Colonel Davis then determined to cross the Pamunkey and Mattapony Rivers and make for Gloucester Point in conformity to the spirit of his instructions from General Stoneman. The crossing of the rivers was successfully accomplished, the former at Plunkett's Ferry and the latter at Walkerton. Resistance had been encountered from time to time and some opportunities to engage the enemy had presented themselves but had been desisted from, I think wisely, in view of the fact that Colonel Davis was directed to injure the enemy by destroying his property and means of communication rather than by resisting the efforts that were put forth to stay his progress. From this point of view his expedition was successful. The value of the property destroyed in the course of his operations was estimated at over one million dollars.†

*War Records, Vol. XXV, Part I, p. 1,083.

†War Records, Vol. XXV, Part I, p. 1,085.

Buford, whose brigade operated with General Gregg, crossed the Rapidan at Morton's Ford on April 30th, and bivouacked at Raccoon Ford until daylight of May 1st. On the second he marched through Louisa Court House to Yanceyville. Here the 1st Cavalry under Captain Lord was detached towards Tolersville and Frederickshall to destroy the bridge across the North Anna on the main road to Fredericksburg. This was completely accomplished and Thompson's Cross Roads was reached on May 3d. Raiding parties were then sent out under Captains Drummond and Harrison of the 5th Cavalry with instructions to destroy the bridges on the roads constituting General Lee's means of communication with the country lying to his left and rear. At Fleming's Cross Roads, on May 4th, Captain Harrison, whose command had been reduced to a little more than thirty men, was attacked by a considerable force of the enemy. Captain Harrison attempted a mounted charge, which was met by the enemy in considerably superior force. Harrison's charge was simply engulfed in the ranks of the enemy and the greater part of his command were made prisoners.*

General Buford speaks in generous terms of the behavior of his command during the difficult operations in which it had been engaged. "During the whole expedition the roads were in a worse condition than I could have supposed to be possible and the command was called upon to endure much severe discomfiture. The men's rations were destroyed almost as soon as issued. No fires could be lighted to cook or dry by, and the dark, cold, wet nights that the men were compelled to march wore them out, but all, without exception, were full of enthusiasm, ready for any emergency, and did their duty with hearty good will. I have not heard of a complaint or a murmur."†

General Averell with the Second Division and B. F. Davis' brigade of Pleasanton's Division, to which Tidball's regular battery of horse artillery was attached, left its bivouac near Warrenton on April 28th and reached Rappahannock Bridge after a difficult night march, at 5:00 A. M., of the 29th. As the river was not fordable at that point, the division marched to

*War Records, Vol. XXV, Part I, p. 1,087.

†War Records, Vol. XXV, Part I, p. 1,090.

Kelly's Ford where it crossed. The passage of the river was completed at 3:00 P. M., on the 29th. On the following day, Averell was ordered to move up the river in the direction of Culpeper and Rapidan Station. He encountered the enemy soon after the days march began, the contact continuing until after dark. Stuart was believed to be near Brandy Station with his entire command, but such was not in fact the case, and the efforts put forth by that officer on May 1st and the days following had nothing to do with Averell's command.

On the 30th, Averell advanced to Culpeper Court House where the rear guard of the enemy was encountered and dispersed, and a small quantity of provisions fell into his hands. The pursuit of the enemy was continued by way of Cedar Mountain in the direction of the Rapidan, and Rapidan Station was reached late in the afternoon. On the morning of May 1st scouting parties were sent up and down the river, and his position at the ford was carefully examined. It was found that the Confederate defenses were so strong and well constructed as to necessitate a formal attack in order to cross the division and carry out his original instructions to continue his operations in the direction of Gordonsville. As he was resisted in his efforts to cross the bridge, its destruction was determined on though it was of no immediate use to the enemy and might prove to be of some service to him later on. The question as to who should burn the frail structure was shortly settled by General Lee who himself ordered its destruction. Here all aggressive purpose seemed to disappear and Averell desisted from further operations in the direction of Gordonsville. He seems to have concluded to join Buford or the main body of the army as circumstances might determine; circumstances seemed to "determine" in favor of the main body and, on May 3d he marched by way of Ely's Ford and rejoined the Army of the Potomac which was then retiring from its position in the vicinity of Chancellorsville.*

This was too much for Hooker, who relieved Averell from command and placed his division under the orders of General Pleasanton. The reasons for this action are set forth in General Hooker's dispatch of May 9th to the Adjutant General of the

*War Records, Vol. XXV, Part I, pp. 1,072-1,080.

Army in which, in speaking of Averell, he says, "My instructions were entirely disregarded by that officer and, in consequence thereof, the service of nearly 4,000 cavalry were lost, or nearly lost, to the country during an eventful period, when it was his plain duty to have rendered services of incalculable value. It is no excuse or justification of his course that he received instructions from General Stoneman in conflict with my own, and it was his duty to know that neither of them afforded an excuse for his culpable indifference and inactivity. If he disregarded all instructions it was his duty to do something. If the enemy did not come to him, he should have gone to the enemy."*

Averell was an experienced soldier and, within limits, an excellent division commander. But he was lacking in aggressiveness; his division on the whole was well commanded; his dispositions were always skillful; he never met with disaster but he never inflicted serious damage upon the enemy. He was later given the command of a division of cavalry in the Valley of Virginia in the following year, but met with the same fate at the hands of General Sheridan that had attended him under Stoneman in the valleys of the Rappahannock and Rapidan.

Stuart's command during the operations which I am attempting to describe, was composed of four brigades under the command of Generals Hampton, Fitzhugh Lee, W. H. F. Lee, and W. E. Jones; two of these those of Hampton and Jones took no part in these operations. Hampton was moving up through the Carolinas and Jones was employed in the Valley; for the time out of reach of the Army of Northern Virginia. It goes without saying that the two Lees, the only brigade commanders remaining with Stuart, had their hands full in the week intervening between the passage at Kellys Ford on April 29th and the withdrawal of the Army of the Potomac to the north bank of the Rappahannock on May 5th. Their participation in the resistance to Stoneman's advance was short; beginning on April 28th and ending on the 30th with the transfer of General Stuart, with the brigade of Fitzhugh Lee, to the main body of the Confederate army at Chancellorsville.

*War Records, Vol. XXV, Part I, p. 1,072.

But little remains of the official reports of Stuart's subordinate commanders during this period, and such records as are accessible contain but very meager accounts of the efforts put forth to resist the advance of General Stoneman into the upper waters of the Rappahannock and Rapidan. Whether this was due to the weather, which, equally embarrassed the troops of both armies, or to a deficiency in strength, or to the difficulty in ascertaining the whereabouts of the enemy; or whether it was due to a combination of the three causes we may never know.

General Stuart's report contains little that is calculated to assist in the prosecution of the inquiry.* He was at Culpepper when General Stoneman's march began. When the enemy crossed at Kelly's Ford, the fact was communicated to General W. H. F. Lee who took prompt measures to resist it by a quick concentration of his command above Kellys, where an efficient resistance could be offered. During the early stages of the operations Fitzhugh Lee was held in reserve at Brandy Station. During the 28th of April, Stuart learned that the enemy was moving in the direction of Maddens, and Fitz. Lee's brigade was immediately moved in that direction. He succeeded in piercing the enemy's column and learned that Slocum's, Howard's and Meade's corps were in motion toward Germanna Ford. Upon learning this General Stuart moved in the direction of Chancellorsville, with the brigade of Fitzhugh Lee, leaving the advance of the enemy to be resisted by the brigade of General W. H. F. Lee. Stuart was in full touch with General R. E. Lee on April 30th, and continued to participate in the operations about Chancellorsville until the end of the campaign.

It is not easy to see, at this distance of time, why General Stuart, who must have been fully aware of the purpose of General Stoneman's movement, should have abandoned his operations against the Federal cavalry and moved, with the stronger of his two brigades, to the support of the Army of Northern Virginia at Chancellorsville. The army of General Lee was separated into two parts, as was that of General Hooker, but it was as easy, or as difficult, for Lee to concentrate as it was for Hooker. The march does not seem to have been ordered, or

*War Records, Vol. XXV, Part I, pp. 1,045-1,048.

even suggested by General Lee, who was not at the moment in great need of cavalry assistance. General Longstreet was absent, without his powerful aid, he had succeeded in driving General Hooker's army to the north bank of the Rapidan. In General Lee's letters to Stuart of this period, written when Hooker's plans of advance had not been fully disclosed, save such as related to General Stoneman's movement to the upper Rapidan, he displayed no anxiety for Stuart's personal presence with his command, but evidently contemplates that the operations against the enemy's cavalry will be persisted in, and speaks of efforts that have been put forth to reinforce the cavalry divisions by the brigades of Hampton and Jones. Writing under date of May 1st, General Lee says "we are now engaged" with Meade's corps, and that Howard's corps had preceded him across the Rapidan; he also asks "what has become of the other two?" There is nothing in this dispatch that would be calculated to divert General Stuart, with the major part of his command, from his field of activity in the region of the upper Rapidan.

At 1:00 p. m., on April 29th, Stuart advised General Lee that the 5th, 11th and 12th Army Corps had marched toward Germanna Ford, making it clear that Hooker was attempting to turn the Confederate position at Fredericksburg. Stuart then moved with Fitz. Lee's brigade; the Rapidan was crossed on the night of the 29th and, he reached Todd's Tavern in the Wilderness late on the following day where he reported his presence to General Lee. After taking a successful and distinguished part in the operations at Chancellorsville, where he arrived in time to assist Jackson in his turning movement against the 11th Corps and to succeed that officer when he received a disabling wound somewhat later in the day. He was himself succeeded in Jackson's command by General A. P. Hill and resumed the direction of his cavalry division which was soon to be increased by considerable reinforcements, and to receive the organization of a cavalry corps. While so employed with the main body of the Confederate army Stuart missed the opportunity, of which we are sure he would have made the most, to oppose the return of Stoneman's command to the lines of the Army of the Potomac.

After Stuart's departure to join the army under General Lee, W. H. F. Lee, who remained with a single brigade to oppose the advance of General Stoneman, found himself unable to check, effectually, the measures of destruction in which the Union cavalry was engaged after it reached Louisa Court House. His efforts were brilliant and resourceful but without avail in face of Gregg's division and Buford's brigade which then constituted the command of General Stoneman. He reached Columbia too late to prevent the destruction of several bridges and a considerable quantity of subsistence stores but, fortunately, in time to prevent injury to the great canal aqueduct at that point. Continuing the pursuit General Lee encountered a small party of about thirty men under Captain Owens of the 5th Cavalry. Owen's force was attacked by a squadron of the 9th Virginia Cavalry in a mounted charge with sabers. He attempted to counter charge, but was overpowered with the loss of his entire command. Lee then retired to Gordonsville. There was an unimportant encounter at the North Anna Bridge on May 6th and, on the following day, being no longer in touch with the enemy, he moved by Trevillian Station and Louisa Court House to Orange Court House.*

A word remains to be said as to the return of General Stoneman's command to the lines of the Army of the Potomac. The several units of the command, except Davis and Kilpatrick, having reassembled, it now became necessary for the corps commander to concert arrangements for the homeward journey. In point of fact General Stoneman knew very little as to the movements on any part of his command save that which he had conducted to the enemy's rear. Whether Averell had fared well or badly, he had no means of knowing. The commanding general had not met him, on the Pamunky, or elsewhere, as he had confidently hoped and the rumors that had reached him from time to time pointed to a defeat, but how extensive the reverse had been he had no means of knowing. Nor did he know whether his return would be opposed by cavalry or infantry or by both. Making a reasonable allowance for all the untoward incidents which he might encounter on his homeward march, he wisely determined to take a wide

*War Records, Vol. XXV, Part I, pp. 1,097-1,099.

course to the west so as to give him room to meet or avoid any force that might be sent into the upper waters of the Rapidan to resist, or prevent his return. It was not to be conceived that Stuart would allow him to return unmolested to his positions in rear of the Army of the Potomac, or that General Lee would fail to support his great subordinate with infantry, so soon as General Stoneman's line of march was indicated. He could not have hoped that both Lee and Stuart would ignore his approach and allow him to return, by his old trail, and leisurely resume his camping ground at Belle Plain. But this was precisely what they did do, as we have already seen.

Stoneman therefore determined to create the impression that he was to return by way of Gordonsville, where a force of the enemy was known to be. To that end Buford's brigade was reassembled at Flemings Cross Roads on May 5th, where the best conditioned horses, some 646 in number, were selected and the command put in motion in the direction of Gordonsville. Finding the country not well adapted to the expeditious movement of cavalry, Buford marched to Louisa Court House where he found that telegraphic communication had been reestablished by the enemy between Richmond and Gordonsville. The lines were again destroyed and the march was resumed. At Trevillian Station the pumps were disabled and the tracks destroyed with a quantity of subsistence stores and ammunition. When within two miles of Gordonsville the enemy was found to be in position with a force of all arms—infantry, artillery and cavalry. As Buford's instructions were to threaten Gordonsville and not to bring on an engagement there, he turned north and reached Orange Springs, on the north bank of the North Anna, at daylight on May 6th, where he was joined by Stoneman and Gregg. Toward evening the command was again put in motion and reached Raccoon Ford on the Rapidan, after a difficult night march, on the morning of the 7th; here the entire command was crossed in safety and Kelly's Ford was reached the same night. The command was then established on the line of Deep Run along the lower Rappahannock.

General Gregg's detachment having returned during the 4th, except those of Kilpatrick and Hasbrouck Davis, who had safely established themselves at Gloucester Point, Stone-

man set out on his return on the morning of the 5th. After an extremely difficult march he reached the Rapidan at Raccoon Ford at daylight on May 6th; resting until noon he turned to the east, reached Kelly's Ford at 9:00 A. M., on the 7th; he crossed on the next day and reached his old camp at Belle Plain on May 11th.

There seems to be a very general misapprehension as to the nature of the operation which has become known as "Stoneman's Raid," the popular view being that General Stoneman, with the three divisions composing the cavalry corps, accompanied by two brigades of horse artillery, undertook a difficult and dangerous march in rear of the Confederate Army of Northern Virginia from which, a few days later, he emerged, his operation crowned with success. This is very far from the truth. In point of fact no such command accompanied General Stoneman in his movement. The corps consisted, normally, of about 12,000 men. In the operations of the raid General Pleasanton's division took no part, save to detach Grimes Davis brigade for service with Averell. The second division, under General Averell accompanied General Stoneman to Raccoon Ford, but was detached for service at and beyond Rapidan Station, at the completion of which he returned to the main army. Gregg alone, with his small division of two brigades to which was added the Reserve Brigade under Buford, and Robertsons excellent horse battery, constituted the raiding force, less than 4,500 in number, which operated under the immediate direction of the corps commander.

After the raid was well under way its advance was intelligently, but inefficiently opposed—not by Stuart himself—but by W. H. F. Lee's brigade of Stuart's division from 1,500 to 1,800 strong. Lee had enough men to oppose any of the fractions of General Stoneman's command that he might chance to encounter, provided he kept them together, but he had not enough to enable him to measure swords with Gregg's division or Buford's brigade, and undertaking clearly beyond his strength and which he was sensible enough not to attempt. General Stoneman does not seem to have suffered by reason of the fact that two-thirds of his command was operating elsewhere, though he would have been seriously embarrassed if General

Hooker had succeeded in turning Lee's army back in the direction of Richmond, as he would have been unable to oppose or delay his retirement until he could have been joined by a supporting force of infantry from the Army of the Potomac. But this was not to be. Indeed it may well be doubted whether Stoneman attached much importance to Hooker's assurances that he would meet him in six days, or he would have been slow to detach half of his command under Averell to follow the enemy into the upper Rapidan.

There was some ground for the belief, at the opening of the Chancellorsville campaign, that such a result might reasonably be expected to attend the great turning movement upon which the army was about to enter. The Army of the Potomac was in excellent spirits, the early movements promised well; the only feature of discouragement being the culpable collapse of Hooker himself at the decisive moment of the battle. The Eleventh Corps had met the full force of Jackson's blow, but was not hopelessly disorganized, and five efficient and well commanded army corps were on the field in positions from which they could engage the enemy, some of them to great advantage. Indeed General Hooker himself was the only thoroughly defeated man in the Army of the Potomac. The second of the purposes to which General Stoneman's attention was drawn in his instruction related to the work of destruction which he was called upon to undertake. He was to destroy the railroads connecting Richmond with Gordonsville and Fredericksburg, together with such plank roads, bridges, turnpikes and other means of communication as were likely to prove useful to the enemy, and especially those in rear of General Lee; he was also to capture or destroy such stores as were likely to find their way into the hands of the Confederate Subsistence Department. The work of destruction was done as thoroughly as possible with the means at hand, but without seriously impairing the efficiency of the army of the enemy, or greatly interfering with his movements; but this was due, in great part, to the fact that General Lee had determined, some time before the opening of the campaign, to transfer the theater of his activity to the territory of the enemy, and to undertake an invasion of Pennsylvania, so that the lines that suffered most at Stoneman's hands ceased

for the time to be of importance, and were repaired or replaced during the summer before they were again needed as lines of communication. As to the destruction of provisions, ammunition and munitions of war generally, I doubt whether the subsistence, forage and other articles amounted, in money value to more than \$100,000. General Stoneman himself complains of the injury, due to waste and spoiling of property, which was done by the troops with no compensating advantage.

When all has been said, it must be concluded, I think, that well conducted operations like those of General Stoneman, are fully worth the loss that is incurred in their prosecution. The influence exerted upon the troops who take part in them is great and immediate, and admits of no question. The experience gained by officers of all grades in outpost work, reconnaissance and troop leading is also worthy of notice, as more of it can be gained in a week of raiding, at a distance from the main body of the army, than from months of participation in the ordinary routine work of an army in the field.

While Stoneman's operations were in progress in central Virginia, a movement of similar character was being carried out, in the Valley of the Mississippi. Colonel Grierson with three mounted regiments, the 6th and 7th Illinois and 2d Iowa Cavalry, left La Grange, Tenn., on April 17th and made their way to Baton Rouge, La., where they arrived on May 2d. It was Colonel Grierson's purpose to march through the enemy's country, defending himself en route, and inflicting such incidental damage as was possible. The expedition was entirely successful and reflects great credit upon its commander and the troops who composed it. The 2d Iowa Cavalry, under Colonel Edward Hatch, was detached to carry out certain difficult instructions, after which it was to fight its way back to its starting point. The skill and energy shown by Colonel Hatch and his men in this undertaking demanded and received the unstinted praise of the officers in chief command of the Union forces in the Valley of the Mississippi.

Fifty years have passed since the first great cavalry raid of modern times moved out of its camps, severed its connection with the supporting infantry, and entered upon its errand of destruction. The text books tell us that such operations are

useful in reaching outlying detachments, in breaking through protecting screens and in destroying the evening's lines of supply and communication. These purposes were fully and intelligently accomplished by General Stoneman, whose movements continue to be regarded as a classic and as a model for imitation the world over. Since the cavalry corps of the Army of the Potomac passed out of existence, there have been great wars in which opportunities for operating in the enemy's rear have presented themselves but, in a majority of cases, have not been taken advantage of.

Efforts have been put forth, at times, to conduct such undertakings, along the lines laid down by Stoneman, Grierson, Sheridan and Wilson, but none have been so clear cut and successful as those carried on with such resourceful skill by the commanders whose names and services have rendered the cavalry of the United States Army illustrious.

Nor can we dismiss from consideration the brilliant operations, differing in no material respect from those already described, which carried on by Stuart in the east and by Van Dorn, Forrest, Wheeler and Morgan in the west which have given these commanders a distinguished place in the history of the developement of modern cavalry. In brilliancy of conception and thoroughness of execution they have never been surpassed, and will be regarded in the future as operations in the highest degree worthy of study by officers of all grades in the cavalry arm of the military service.

THE PISTOL, THE MELLAY AND THE FIGHT AT DEVIL'S RIVER.

BY COLONEL EBIN SWIFT, EIGHTH CAVALRY.

PRIVATE MULVANEY was relating a conversation with Lieutenant Brazenose, "I sez to the Lift'nint:—'Sor,' sez I, you've the makin's in you av a great man; but, av you'll let an ould sodger spake, you're too fond of The-ourisin.'" He shuk hands wid me and sez:—'Hit high, hit low, there's no plas in you, Malvaney. You've seen me waltzin' through Lungtungpen like a Red Injin widout de war paint, an' you sa I'm too fond av The-ourisin.'"

If we do not seek for too close an application of this authentic bit of history we may at least find in it a suggestion that one fault of our academic system of education is to build theories. Most of the professions are breaking away from this habit but the military profession seems to be about the last to adopt the idea that experience, practice and theory should go hand in hand and follow each other in logical sequence.

In the cavalry there are important questions to be settled but after years of argument their seems to be no more prospects of agreement now than at the beginning. Among these questions which thus appear with monotonous regularity is that of arms for the cavalryman. In recalling what has been said so far we are struck by several points of similarity. The fondness for "the-ourisin" is shown in plausible statements which are hard to disapprove. In the reminiscences of men who have had experience in war we are impressed by the limited vision of the individual. From our attempts to teach the use of weapons in time of peace we are apt to form erroneous theories for war.

Improvement is the main object for which we strive. It is found in two ways, either by a furious habit of change or by seeking for experience as a guide. The first is said to be characteristic of democracies which frequently ignore the principles

which made them great and revert to Simian characteristics even in the midst of high civilization. The lamp of experience ought to be the safest guide but in order to be followed without question there would have to be a great wealth of examples of the same kind, or an ability to pick out logical conclusions from confusing examples.

In our army and in the question of armament these difficulties seem to be marked.

The object of this paper is to attempt to select an experience from one of the earliest examples of the use of the pistol in war, to examine it to see if it furnishes safe data for conclusions upon the question of arms for cavalrymen and to answer the principal arguments against its efficiency.

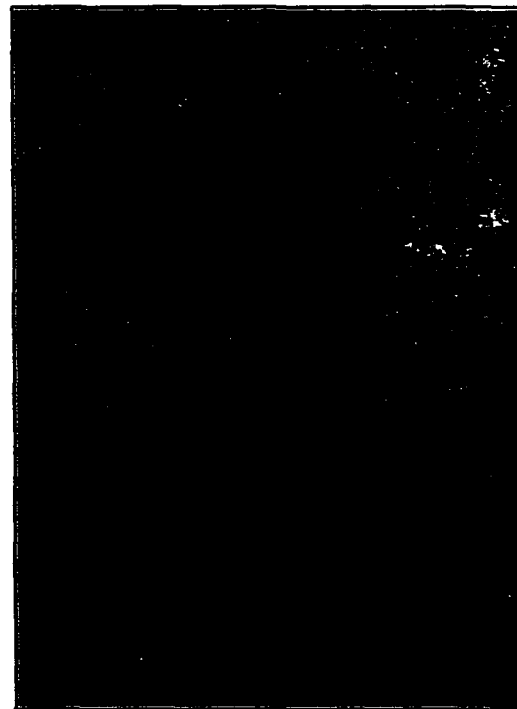
1. THE DOCUMENTS IN THE CASE.

The accounts of the fight are contained in the official report of Lieutenant John B. Hood, 2d Cavalry, which was rendered shortly afterwards; in the book "Advance and Retreat," by the same author, about ten years after, when he had become a Lieutenant General and the commander of a great army; in Price's "Across the Continent with the Fifth Cavalry;" and in Brackett's "History of Cavalry." Colonel Brackett was an officer of the regiment at the same time with Hood. Captain Price joined the regiment in 1866 and spent some years collecting material for his book. Both Brackett and Price had opportunities to get details not mentioned in Hood's accounts, as the incident was common talk in the regiment for many years. No important difference seems to exist in any of the accounts. All accounts are brief and do not indicate an attempt to make a "story" out of the affair. So far they are satisfactory but they elaborate some insignificant details and ignore more important ones, making it necessary to go to some trouble to supply the latter.

2. THE NARRATIVE.

This general agreement simplifies the task of building up a narrative of the whole action, supplementing undoubted facts by those that seem most probable from our own general knowledge.

Lieutenant John B. Hood with seventeen fighting men of "G" Troop of the Fifth (old Second) Cavalry was scouting after Lipan and Comanche Indians on July 20, 1857, with orders to attack any parties which were found off their reservations. His pack mules and guard had been left in rear. His men were armed with Colts revolvers, loaded with six paper cartridges,



LIEUTENANT GENERAL JOHN B. HOOD, C. S. A.
Born 1831; West Point 1853; Died 1879.

and with muzzle loading carbines, firing similar ammunition. Four days had been consumed at an average march of fifty miles per day, mostly without water, when toward the close of the fourth day the party approached the head of Devil's river in Texas. The appearance of a small party of Indians showing a white flag on a distant ridge led Hood to change his course and to ride toward them.

The view was partly broken by piles of dead grass which the Indians had collected and by bunches of chaparral. Approaching to within thirty yards of the flag with carbines at "advance" Hood found himself attacked suddenly by about three times his force, a part of whom charged on horseback with lances, another part fired on foot with bows and arrows and also with guns which were passed to loaders in rear after being fired, a third party was armed entirely with bows and arrows. In many respects it was partly an ambush and partly a surprise. There was some close fighting and Hood rushed the enemy at once, went through and rallied beyond. He fired his carbine in this first onset, returned carbines, drew his revolvers and led his men back at once in a second charge. So close was this fight that an Indian pulled a carbine from a soldier and others struck the horses in the face with their shields. Then with empty carbines and revolvers Hood withdrew, collected his party and started for water for his famished men and horses. The Indians in no shape to renew the conflict went off too in an opposite direction chanting the songs of the dead.

The Indians lost twenty-two men killed and wounded; the troops lost seven including the commander badly wounded.

3. THE POINTS IN DOUBT.

There are several points about which some doubt will be felt:

(a) *As to the amount of carbine fire.*

It was the day of percussion caps, paper cartridges and muzzle loaders. Reloading on horseback in a charge was impossible. The amount of carbine fire if any could not have been more than one shot for each carbine or seventeen in all. As the action began while the troopers had carbines at "advance" they must have emptied them first. The effect of this fire we may only conjecture. From what we know of its difficulties under the double task of guiding a horse and of aiming a gun we may conclude that it was not very effective.

In 1855 when this regiment was organized one squadron (two troops) was armed with the Perry breech loading carbine.

We have no further record of it, or what became of it, but there is a tradition that it was a failure and was soon discarded. If it had been used at Devil's River it would not have had that fate.

(a) *As to the amount of pistol fire:*

The Navy Colt revolver was a six shooter but was a dangerous weapon with six shots in the cylinder because the safety notch was not safe. It is probable that it was used then as it was for many years after, and as it is now, although much improved, with the hammer down on an empty chamber. However for the purpose of this discussion and in the absence of positive knowledge let us consider that each revolver had six paper cartridges. All accounts agree that Hood led his men in a return charge after the first onset, using revolvers only and that the fight ended with empty revolvers. If each man had one revolver there were one hundred and two shots fired from that weapon. It is stated somewhere that Hood's men had two revolvers apiece. This does not appear in the accounts of the armament of the regiment in 1855. The balance of Hood's troop were in the field at the same time. There were no other cavalry troops at the post. Under no probable theory could the party have armed themselves with two revolvers apiece. Hood himself perhaps carried a carbine and a pistol, the same as other men of his command.

(c) *The total number of shots fired by Hood's men:*

From the figures here given not more than one hundred and nineteen shots were fired.

(d) *The duration of the action:*

It began at thirty yards. Hood and his men charged forward and charged again, at once. There was no time to reload, which was a long operation with the paper cartridge, and the number of shots fired was the number actually in the weapons when the action began. Twenty seconds at charging gait would have been ample time to reach the limit of the first charge and the same for the second charge, from what we know of the terrain. A few more seconds to collect the scattered troopers, a short scrimmage and it was all over.

(e) Was it a victory or a defeat?

Brackett calls it a victory for the Indians. Price calls it a repulse for Hood. Hood claims a victory. This seems to be largely a matter of definition and opinion. The Indians suffered a loss of nearly fifty per cent. and if Hood had not been severely wounded himself the party would probably have been completely destroyed.

(f) As to the number engaged:

Hood had seventeen men including himself. The accounts say that he was attacked by three times his numbers which would be by fifty-one Indians. More definite figures would indicate forty-five Indians in action with others loading guns and passing them to the front. After all it does not seem probable that the exact number of Indians was known.

(4) THE APPLICATION OF THE HISTORICAL INCIDENT TO THE CASE IN POINT.

This will be evident as soon as we study the objections that have been raised to the revolver as a cavalry weapon. It will probably be instructive to take each of these objections and to examine them in the light of this bit of history to see how practice and theory stand the test of comparison.

The objections are many but it appears possible to boil them down to a substantial list as follows:

(a) Mounted fire is inaccurate:

We must ask ourselves the question, what is accuracy in war and what is not? What is it for the different arms of the service? Does the pistol fail on comparison?

The ease with which the peace results of target practice can be obtained and predicted both under ideal conditions of target practice and under unknown conditions in unfamiliar ground has encouraged investigation to determine the probable results of war.

Careful comparison of these results in cases where complete data could be obtained have resulted in the theory that this relation could be expressed by 1:20—that is to say that when one hit could be counted under unknown conditions in peace it will take twenty times as many shots under similar conditions

in war to get a hit. This modifying factor is called a war factor.

Thus Livermore and Raymond of our service, acting independently, have agreed that in a standard case of the fire of 64 men, lying down at $2\frac{1}{2}$ yards interval, firing at 450 yards, at similar target, both on an open plain, both lines perpendicular to the line of fire, with equal effect on both sides, both fairly good troops, perfectly fresh, with opportunity to make a fair estimate of the distance, in all these things being considered we may expect a loss of one man hit for 400 shots fired in one minute. And as the proportion of killed to wounded is usually about 1 to 4 we would fire 1,600 shots to kill a man under the ideal conditions of this standard case. But for changing conditions other modifiers must be applied, so that if we modify the standard by previous movement at double time, by firing at a slight elevation, by broadening the interval between skirmishers, by giving them slight intrenchments, it will take ten times as many shots, say 16,000 shots to kill.

That these results of theory are not absurd is proved by the fact that the Russians expended in the Manchuria campaign 4,200 rounds of small arms ammunition for 1 man killed.

All this is confirmatory of the old saying that it takes a man's weight in lead to kill him in war.

For artillery results the measure of accuracy would be still further reduced from the peace result if we rely upon the experience of this war. Take 400,000 rounds of artillery ammunition expended at Mukden. Counting 8 per cent. of casualties as a result of artillery fire, and 1 killed to 4 wounded, and 1 round at 20 pounds, we get about 5,000 pounds of ammunition for 1 man killed.

On counting the 408,000 rounds fired by the Russians' batteries of the 1st and 3d Siberian Corps at Liao Yang, the number of killed and wounded Japanese opposite these corps at 13,000 the proportion of killed to wounded at 1 to 4 and the proportion of $7\frac{1}{2}$ per cent. due to artillery fire in that battle and we have four and one-half tons of ammunition for one man killed.

These figures are given without any good facilities for extension or verification. They are correct enough to show

that so far as the small arm and the field gun are concerned the indictment of "inaccuracy" might fairly hold against them as well as against the pistol used in mounted fire. In fact we might even say that accuracy in war is a dream. Dreams come true sometimes and so does accuracy happen, but in making a law of facts we must consider only average results and reject those which are abnormal.

Data for the pistol is hard to find. The war factor for the pistol has not been calculated. We may claim that the fight at Devil's River was typical of the pistol. If it can be supported by a sufficient number of experiences of the same kind it will settle the question as to the rules of action for this arm.

The experience of peace firing with the pistol under the rules so far adopted are not encouraging. Probably one hit in five shots would be a good average result, as target practice is conducted. If we accept this result our study of the experience of other arms would certainly lead us to expect an insignificant result in war, under the influence of fatigue, excitement and fear, combined in the French word "émotion" which is so easy to understand and so hard to translate.

If the loss of the Indians was twenty-two and the number of shots fired was not more than one hundred and nineteen there was one hit in five and one-tenth shots, which is a war result identical with the peace result, as first stated.

It seems to be reasonable then that the peace practice does not conform closely enough to service conditions. The range is too great, the solid black target without even a button to catch the eye is not fair, troopers should be required to work out their horses by a half-mile or more at charging gait before firing the pistol.

To close the question of the accuracy of mounted fire let us not forget that since war began one hit in five has meant a beaten enemy.

(b) *It is more dangerous to friend than to foe:*

This objection seems plausible. It has been made frequently by veterans of the Civil War who ought to know, but beyond the bold statement the facts do not seem to be given.

If any of Hood's party was hit by a friendly bullet it is probable that some noise of the fact would have been spread abroad. Such a shot awakens a deeper resentment than a shot from the enemy and is hard to forgive. I have talked about this action with a half dozen of Hood's contemporaries in the regiment at that time and I do not think this point was ever mentioned. The figures show that even if Hood and all his men had been shot by their own bullets this argument would still be untenable. More or less stray shots are to be expected always and we are told that Japanese infantry was often under fire of their own guns. Stonewall Jackson, Longstreet and Jenkins were shot by their own men.

(c) *The men with revolvers will invariably slow down and fire at a distance instead of coming to close quarters:*

This statement has been made by federal officers who served in the Civil War. A contrary statement has been made by the other side. Without stopping to weigh the evidence in the general case we may say that Hood and his men did not do this and that if they had done so they would have made no hits.

(d) *You cannot "lead" your men:*

Hood did go in at the head of his men but leadership of the kind here suggested is of doubtful importance.

It is a relic of the days when whole armies were put to flight on the appearance of leaders who had a terrible reputation. Too few can see the leader. He is better placed where he can direct not lead his men.

(e) *You cannot fire to the front:*

It is hard to see how this party could have fired in any other way with at least a large proportion of its shots.

(f) *The revolver cannot be used in Shock Action:*

Hood charged at thirty yards, met a charging party of lancers and engaged with dismounted men. The physical collision of charging steeds probably belongs to the age of fable but for modern conditions this is a fair example of "Shock Action."

(g) Shots fired while the horse is in motion are wasted:

Hood's horses were in motion and as General Sheridan once remarked: "Let us see the list of killed and wounded."

(h) Although useful in individual combat it is not so with a large command:

The point to consider here is the conduct of seventeen men in a hand-to-hand fight and whether the experience of such an action would be a guide for a larger command in a bigger battle.

The hand-to-hand fight has characteristics which make it different from other forms of combat. Each man works by himself, looks to his own safety, picks his own opponent. Leadership and drill disappear.

It is hard to see why the seventeen individuals acting in this way should do differently from a hundred or more under similar conditions.

(i) Other weapons would do just as well:

It happened that the Indians set fire to piles of grass and were partially concealed in the brush and chaparral. It is hard to force a horse into burning grass and a long arm is needed to reach a man in a bunch of "Spanish bayonets." The pistol was equal to both of these conditions.

(k) It is impracticable to train troopers in all their weapons:

The men were enlisted in the summer and fall of 1855 and had less than two years service, half of which was in the field. Some were enlisted at McMinnville, Tennessee, the home of the captain, but most were ordinary general service recruits enlisted all over the country. Target practice consisted principally in riding around a post and firing at it. The supply of ammunition was small. It was many years before target practice was developed in the army.

We cannot say how well the troopers used the other weapons.

THE MELLAY (MÊLÉE).

Formerly much was said about the hand-to-hand fight, the mix-up, the scrimmage, which was supposed to take place at the end of a bayonet attack, or a cavalry charge. Later observers of this feature of a battle have spoken lightly of it and have even doubted its existence.

Hohenlohe says that old soldiers told him that they came to blows not oftener than one time out of twelve. Moltke suggested that if reports of mellays were stripped of their dramatic splendor the prosaic truth would reveal a different story. Meckel says the mella will seldom occur except when troops meet unexpectedly in an enclosed space and when the weaker cannot escape. Livermore says the loss of life in the mella is insignificant. Solovieff saw many mellays but his statements are extravagant. These observers seem to be speaking of infantry mellays with the bayonet, of which Meckel seems to give the clearest view. But of all the men who have learned the secrets of the soldier's heart the greatest was Ardant du Picq. Speaking of cavalry he ridicules the mella: declares that one side or the other always retires before the moment of actual contact: that at the most one mass would drive through another mass, and then break away, that in the mellays each soldier would instinctively watch for an attack in the rear and would dread it most.

Ardant du Picq was a Colonel in the French army, killed at Metz in 1870. His law of the mella was that of European cavalry as it existed then and does today. If we can show a typical case of American cavalry in mella we will settle an important point.

Ancient battles certainly were fought with hand weapons but the disciplined troops suffered practically nothing. The other side soon took to panic and rout and was slaughtered in great numbers. When neither side had disciplined troops the slaughter took place in the army which was stricken first with the panic that was sure to come. This perhaps gave the idea to some historians that the ancient battles were heroic affairs. Recently, since the adoption of fire arms, we have been able to collect statistics of the losses due to the hand weapon, which could only be used in the mella and we find them to be small.

Therefore, the accepted idea that the value of the charge is in its moral effect because the weaker side will not wait for the stronger.

Closely allied with the legendary and theoretical ideas of the mellay is the sentiment which awards great glory to troops who suffer the heaviest losses in battle. Close examination often shows that these losses were incurred not in the charge or in the mellay but in the retreat, that it is the effort to get away from the enemy when he has proved too powerful. In this respect the mobility of the cavalryman gives him peculiar advantages, which accounts for the relatively small losses of that arm in single actions. The loss that troops may be expected to stand in charge is relatively small. The army is merely a variety of the human crowd with all its ferocity, its heroism, and its self-forgetfulness but its stampedes are seldom to the front. So that the principal efforts of leaders has always been to get men to stop in hand-to-hand conflicts, and to combat the instinct of self-preservation. To overcome the nature of man artificial methods are used whenever possible and in this great soldiers have shown their highest genius and reached their most brilliant results. Fanaticism, patriotism, chivalry and glory, passion and prejudice, confidence and high example have each been walked upon the military check-board with varying result. Whenever the influence invoked was sufficiently original or strong on one side, that side has been victorious; when on both sides some form of mellay would occur if numbers, conditions and morale were equal on both sides. Typical instances are hard to find however.

From what has been said of the mellay and of battle losses it is safe to conclude that an example which shows an inferior force seeking a battle which they could avoid and staying under a heavy loss in killed and wounded will be unique. If we can wisely judge the whys and wherefores of the case we will illuminate a path that has often been ignorantly followed.

Devil's River has some claims for this distinction.

The losses that took place could not have occurred in advance or retreat but only at close quarters. We know enough about the results of target practice to say that they occurred at less than ten yards. As the loss of the Indians was greater than

Hood's entire force it did not occur in a moment of time. It was a mellay.

It is more difficult to answer the question as to the influences which impelled the troops to make a record for actions of this kind. On the side of the Indians it is plain that they could not avoid the conflict, except perhaps the mounted men. Indeed they had some confidence of numbers and advantage of position. The troops on the other hand were not broken by surprise or disturbed by the numbers and eagerly sought to get close to their enemies. Having superior mobility they used it to get close, not away. Under what absorbing influence did they act to break the law of the mellay? Religion, revenge and glory were not; we should say, highly developed in any bunch of careless troopers riding on a border scout in that day. The potent suggestion of Hood's example may have had a great effect at the beginning but probably individual leadership would not inspire sixteen men in that number of separate combats going on at the same time.

Plainly we must seek further for the power that lay behind that charge, and scrimmage and list of killed and wounded. As we have eliminated all factors but one of the human problem it is easy to find. What influence is expressed in the word "Confidence," and its principal manifestation was confidence in its weapons.

Many influences combined to build up an overwhelming sentiment in favor of the Colt's revolver. The regiment was new, it had not been ruined by peace maneuvers as Moltke suggested about the German Cavalry in 1870, or slaughtered by umpires, or discouraged by the bad results of target practice under hard conditions in time of peace. The revolver was new in the army but old in Texas. The Texas rangers and others had been using it for years and fabulous stories were told and believed about its deeds. A mettlesome crowd of officers were eager to show their powers. Bradfute, the Captain of "G" troop was a celebrated shot and a wild son of Bill Travis, the Texas hero, was an officer in the regiment, having formerly been a captain in the rangers. All thought was of quarters close and noses bloody. As a result Van Camp got an arrow through his heart, George H. Thomas had his chin neatly pinned to

his chest with an arrow as he leaned forward on his horse in a charge. Earl Van Dorn was shot twice and Fitz Lee once with arrows. Oakes had an arrow somewhere inside and he carried it all his life, and there were other cases of which we know not the details. All were hunting chances to show what was in them and Fitz Lee, Pfifer, Major, Harrison, "Shanks" Evans, Sergeant Spangler and Bugler Jack Hayes had a record of many Indians killed in personal combat.

So that is why I suggest that it is time to abandon some theories, to modify certain peace conditions, and to keep a pistol in the hands of the cavalry.

MILITARY HORSES IN GENERAL AND CAVALRY HORSES IN PARTICULAR.

BY CAPTAIN ALBERT N. MCCLURE, FOURTH CAVALRY.

WHAT is the best cavalry horse capable of carrying a weight of 260 pounds? First, his blood; second, his weight and height. The best cavalry horse is the one possessing in the highest degree the following qualities:

Ability to carry the weight prescribed, to gallop, to maintain a fair rate of speed for a long period of time, enough reserve energy at any moment to respond to a demand for great speed, easy and springy in his gaits, quick in his movements, docile and easy to control, and lastly, but of very great importance, he must be very hardy.

The answer to the above question, as it stands, is the product of a mixture of the two pure breeds, namely: the thoroughbred and the Arab, in such a way that the desired size and conformation will be produced. It is believed that the size should be an average of 15 hands, 2 inches, varying from 15 to 16 hands, and the weight between 1,000 and 1,200 pounds in good flesh.*

It is realized that the ideal cavalry horse is greatly superior to that which is ordinarily obtained. This answer is given be-

*Weight being so dependent upon the horse's condition of flesh, thin or fat, it can not be stated in exact figures what the weight of a cavalry horse should be. Nor is it important, since only blood, bone, muscle, conformation, soundness, condition of training, gaits and action determine the strength and endurance of the riding horse. Of course a fair proportion must exist between the weight of the horse and the weight he carries on his back, which should, in general, not exceed one-fourth of the horse's weight. In this connection it may be stated as also true, in general, that in exceeding about 1,350 pounds as the combined weight of horse and his pack, at the same time expecting to maintain great mobility and endurance, you pass beyond the possibilities of the horse. Big horses, very big horses, may be of value to a wholesale "Brewer's" association, or even to the "Jumping" horse-show faddists, but not so yet for the American cavalry.

cause it is believed that this horse possesses in the highest degree the essential qualities enumerated above that a cavalry horse should possess. It is evident that the horse possessing these qualities in the highest degree is the best cavalry horse.

The question appeals to the officers of American cavalry in this way:

What is the best cavalry horse that is practicable to produce in the United States? It is believed that in the starting of a breed of military horses only stallions of the thoroughbred race should be used, because there are fewer difficulties, defects we may say, to overcome in the thoroughbred as a cavalry horse than there are in any other race.

Thoroughbred stallions for the production of military horses should be:

First.—Absolutely free from all hereditary unsoundness or any predisposition toward it;

Second.—Of good conformation, with large bones, and strongly built;

Third.—From a good family, noted for their ability as good sires capable of reproducing themselves and of good dispositions.

The size of the stallion is entirely dependent upon the size of the mares at the disposition of the breeder.

The speed of the stallion or the purses he has won on the race track are of no importance. The mere fact that he is a clean thoroughbred is sufficient, provided all other requirements are fulfilled. It is important, however, that the young stallion destined for the stud should as a three year old *prove* his *soundness* and *endurance* by flat racing before entering the stud at four. This process may prevent some good stallions entering the stud, but it will probably keep more poor ones out than any other system.

The first and most important part to obtain in the machine of production is a sufficient number of suitable mares. From what source are the mares to come? The United States Government has recently acquired a number of stallions of various breeds. If it is the intention of those in charge of this work to increase the number of horses in the United States among the farmers, thereby increasing the number of mares,

and increasing the reserve supply of horses or increasing the number of fair military horses that might be available in time of war, the trotters, the saddle horses and the Morgans among these stallions can undoubtedly be used to a great advantage. Mares should be selected that possess in the highest degree the essential qualities of a good cavalry horse, and in addition, can, be classed as good brood mares capable of producing the size and type desired. One can not say that these mares *must* be of any particular race, because one could not find a sufficient number of any one race alone to produce cavalry horses in great numbers. *Therefore, select mares from any race or family possessing in the highest degree the qualities desired in the product.* To say that the trotter or the Denmark or the Arab, or the pure thoroughbred in his present condition, is the best cavalry horse that it is practicable to obtain in the United States is only the expression of, in most cases, a selfish prejudice in favor of this or that breed.

Of course all animals selected for breeding purposes should be free from hereditary unsoundness, possess a good conformation for the work for which they are determined, possess a great deal of bone, and a good quality of tissue; *also, that an attempt should not be made to produce a radically different product in type and size from that of his ancestors.*

Let us see the result of the first crossing, i. e., the selected thoroughbred stallions with native mares. The first offspring will possess at least fifty per cent. thoroughbred blood. The mares produced in this way should be more valuable in the production of a good cavalry horse, provided the selection is properly made in the beginning, than their mothers, and will continue to improve as this system is carefully followed. At about the third generation in this system some stallions may be selected from the young family capable and worthy of entering the stud.

It is important to remember that the work that a horse does, the nature of the terrain over which he works, and his environments in time effect a wonderful influence on his conformation and disposition. This is one reason why the thoroughbred is the only horse worthy of becoming the foundation stone in the production of cavalry horses, because he, and the Arab—which will

be discussed in other notes—are the only pure races that have been used only as riding horses. While it is true that the American saddle horses and the trotters possess very much thoroughbred blood, and that the saddle horse is famous as a riding horse and a weight carrier—or was *thirty years ago*—it remains true that both of these horses, as a race are, at the present time far from being ideal cavalry horses. The character of the work that they have done for generations has made them so, in bringing about serious defects in conformation for cavalry purposes.

The environments of both stallions and mares employed in this factory—if we may call it such—should, as far as practicable, be the same as that of the cavalry horse in actual service. Mares should not be left at liberty in a semi-state of savagery, on flat prairies while in foal, but they should be employed in light work of any kind, preferably in light riding over varied terrain and daily accustomed to being handled. Therefore, the small farmer, who has a small number, often only one, of such mares in his possession, should be the real horse raiser to seek in looking for suitable mares and suitable mothers for cavalry horses. Likewise the stallions, except during the two or three months of the year while making the season, should be ridden, preferably in a school of equitation, because *their daily exercise is very necessary*, and if the stallion depot is near a school of equitation or military garrison, such horses could be profitably and economically used.

Much could be said as to the climate and character of the soil and nature of the terrain that produce the best military horse. The French consider this of such importance that they have certain sections of the country for the young foals while being nourished largely by their mothers' milk, and later, during the period of growth, other districts more elevated, more mountainous, where the vegetation is less luxuriant which the French claim is very essential in producing a good quality of tissue. In Hungary, where the important studs are located in perfectly flat country, it is possibly true that their horses have reached the highest perfection possible to obtain where the studs are located. These horses do not have the appearance of being clever mountain climbers or clever in rough country

because for many generations they have never performed that kind of work. Let us hope that in the selection of the remount stations, and the districts where government stallions have been placed to make a season, that this subject has been given due consideration. This is also important because the character of the soil and the quality of the grass and other forage, whether natural or cultivated, will have a great influence not only upon the quality of tissue, of bone and muscle, but the character of the surface of the ground, whether rocky or sandy, whether wet or soft, or dry and hard, a very important influence on the size, shape and quality of the feet, and probably, under certain conditions, the climate may exert a wonderful influence toward or for a predisposition to hereditary ailments of the eyes. A good horseshoer can not put good feet on horses. They must be grown on him.

When the small farmer of the United States becomes thoroughly familiar with what a good military horse should be, there is no doubt but he will be glad to have an opportunity to produce them, because the farmer is sure to learn in a short time that the good military horse is far superior to anything he now has for his own work.

The foregoing being a brief description of what troop horses should be, and how they should be obtained, what is the best officer's charger or officer's horse? The answer is: The best of the above type. Why should he be larger, or why should he be of a different blood, or why should an officer have a so-called "*war horse*," and a "*peace horse*" or "*charger*?" For an officer's war horse certainly nothing better can be found than the best of the class described above. In time of peace, perhaps, the officer might be permitted to ride any kind of horse that he may select, but in peace or war the officer's horse should be a model in *performance and endurance*.

In this brief paper it can not be undertaken to discuss the relative merits of the thoroughbred, or of the trotters, or of the American saddle horses, of the Arabs, or the Morgans, or the cowponies, as good cavalry horses. Experience alone in riding all these classes can lead one to correct conclusions in the matter. This is true, the large, broad, heavy horse, no matter how well

bred he is, seldom has the springy, light, elastic movement of the smaller or medium-sized horse.*

As an indirect means of quickly and surely improving the quality of the military horses, what part should the federal government play in supporting this system which will undoubtedly prove a valuable asset in the national defense, i. e., by greatly increasing the number of horses in the country capable of rendering military service. A good system has been started and we are happy to find along the general line outlined above. It is up to all who are interested to assist.

The age at which young horses destined for military service should be purchased and placed under military control is a minor detail to be determined only by the cost in doing it. It is important, however, that before full military duty is required of them they should be at least six years of age, and should have had at least one year's careful training.

It is of no importance how the stallions are obtained to place at the disposition of the breeders, whether the government maintains a stud to raise them or whether they are purchased in open market. The only point is, they should be available and their selection and assignment to districts carefully made. *Mistakes made in the beginning will require years to correct.* It is necessary for the government to control this enterprise of such vast national importance because only a few states have breeding laws by which unfit material may be kept out of studs.

Can not the federal government, in some way, probably through the influence of the Bureau of Animal Industry, assist State Legislatures in a law such as that which Pennsylvania and one or two other States have for prohibiting a license to be issued for stallions possessing serious unsoundness and defects in conformation?

Is it surprising to know that one European country (Hungary), by a well organized system of horsebreeding is able to sell

*Easy, springy gaits are a quality of a riding horse as desirable to those persons of the military service who ride horseback as a vocation as it is to men of any other profession. Men who ride horseback for a living have never in the history of the United States selected large horses for that purpose; neither have they selected horses with rough gaits.

annually about sixty thousand horses to its neighboring states largely for military purposes? Of course the best are retained in the country. Think what an industry this is for that country. Probably no country in the world can today turn out more horses capable of rendering excellent military service than Hungary.

How many first class military horses can be found in the United States today? How many horses is the United States selling annually to foreign countries for military purposes? How many is it practicable for the United States to profitably produce annually in addition to its requirements for the army in time of peace? These are pertinent questions worthy of serious consideration.

SUMMARY.

The best cavalry horse capable of carrying a weight of 260 pounds practicable to produce in the United States is obtained by crossing of the carefully selected thoroughbred stallions with native mares, both stallions and mares selected for their good qualities as breeders and possessing to the highest possible degree the essential qualities of a good cavalry horse; height, from 15 to 16 hands, average 15½; weight, 1,000 to 1,200 pounds. The best officers' charger is the best of the above classes.

THE SCHOOL OF APPLICATION FOR CAVALRY AT STRÖMSHOLM, SWEDEN.

By CAPTAIN GUY CUSHMAN, ELEVENTH CAVALRY, MILITARY ATTACHÉ.

IN compliance with an invitation received from the Swedish War Department to attend the graduation exercises of the class of 1912-13, at the School of Application for Cavalry at Strömsholm, in company with the Austrian Military Attaché, Colonel Straub, I left Stockholm at 6:15 on the evening of August 8, 1913.

After leaving the city, our route lay through rich farming country, which reminded me greatly of our own farms at home, particularly in the neighborhood of Burlington, Vermont. The general route of the train was along the shores of beautiful Lake Mälär, one of the largest of the many Swedish lakes. Passing through the large towns of Enköping and Vesterås we arrived at Strömsholm at 9:30, and were met by two of the officers detailed to the School as Instructors. We were taken by these gentlemen to the quarters of Major Ernest Linder, Royal Life Guards, Commandant, where we were most hospitably received by Madame Linder and her charming daughters.

The Commandant at Strömsholm does not occupy regular quarters, but resides in a large country house about half a mile from the Castle of Strömsholm. As Major Linder and all his family speak English perfectly it added greatly to the pleasure of my visit, as I had not been in Sweden long enough to acquire a speaking knowledge of this very difficult language.

We had been informed that our visit would coincide with the annual inspection by the Inspector of Cavalry, Major General Nyblæus, and our hostess informed us that the general was at that moment at the castle of Strömsholm, attending a lecture by Major Linder on riding and jumping. The "General Inspector" was not, I noted, a guest of the Commandant, but spent the night in the castle with the student officers.

Upon inquiry I was informed that in Sweden the inspecting officer was never the guest of the commanding officer if it could be avoided. I regretted that we were too late to attend Major Linder's talk on equitation, for while I could not have understood a word that he said, his remarks were illustrated with the cinematograph showing various incidents at horse shows and steeplechases in different foreign countries, also views taken at Saumur, Hanover, Tor di Quinto, and other cavalry schools which must have been of great interest.

Our host came in shortly and gave us a warm welcome to Strömsholm. Major Linder is a tall, spare man, and looks like a perfect type of a cavalry officer; he speaks English, French and German fluently and has twice been detailed as Military Attaché, to England and to France.



CLASS MOUNTED ON PRIVATE CHARGERS. RIDING HALL AND STABLES IN REAR.

Saturday morning we were up at 6:30 and after a hasty breakfast we were off in Major Linder's automobile to the Castle of Strömsholm. This castle, it is really more of a chateau than a castle, was built by Charles X of Sweden, in 1620, and was for many years his home, and was the birthplace of the famous Swedish King and General, Charles XII. It stands upon an island in a rapid river, and is approached by a long avenue of ancient trees and an iron bridge.

Strömsholm is the property of the Crown, but as it is not needed for a royal residence it has for a number of years been in use for quarters for the bachelor instructors and student officers of the school. It is a beautiful and picturesque old building, but seemed in bad repair, and the sanitary arrangements (as in

most old castles) were beyond description. Also it must have been very cold in winter, as there are only porcelain stoves for heating apparatus. The Swedish Government evidently does not believe in pampering its young officers, and I must say that they seemed a remarkably fit and hardy lot of youngsters. The castle is located over two miles from the stables and riding hall. While this distance does not make much difference in summer as the students all ride bicycles to and from the stables, it must be rather inconvenient in winter when the snow is deep.

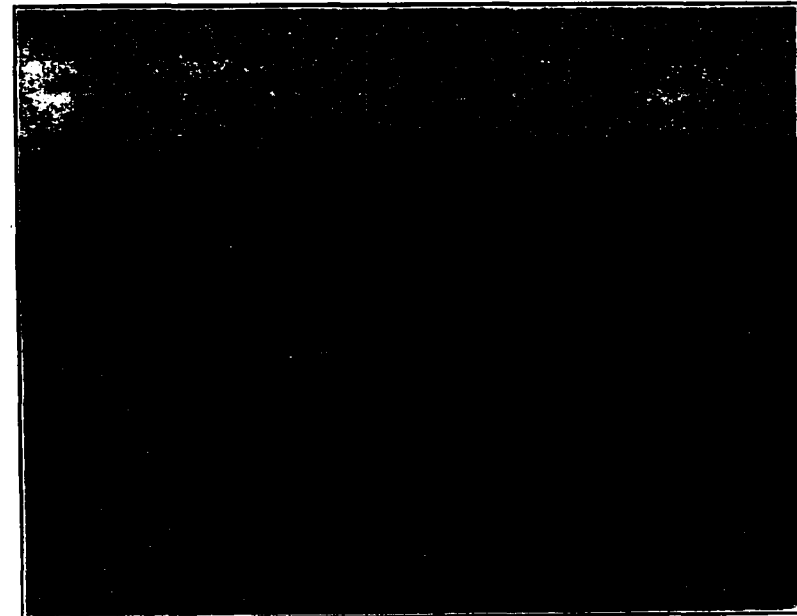
At the Castle we met General Nyblaeus and his Adjutant, Major Stöhl of the General Staff, and, as Colonel Straub and myself were already acquainted with the General, introductions were unnecessary. The General welcomed us heartily and very kindly took us over the castle and told us a good deal of its history. After which, mounting the horses which were awaiting us in front of the castle, the Inspector proceeded to the business of the day, which was first the inspection of the graduating class mounted upon their personal chargers.

When an officer is detailed to take the course at Strömsholm he brings with him all the horses he owns. In Sweden all cavalry officers are required to keep two mounts, but most of them have more. Over two hours were spent in this manner and when the Inspector finished, there was no doubt in my mind and I am sure there was none in his, that these horses were in every way "made" chargers. I have seen some close inspections at home by various of our Inspectors and regimental commanders, but never before have I seen an inspection so thorough and comprehensive as General Nyblaeus made of the class and their mounts at Strömsholm.

In detail, the inspection covered the same class of work as we see at our Mounted Service School at Fort Riley, and consisted of movements at the different gaits, walk, slow trot, fast trot, and gallop; turning on the forehand and haunches, backing, change of leads on circle and straight line, "shoulder in" and work on two tracks. These horses were all well bred, and a good proportion of them were thoroughbreds, but they were all perfectly steady and quiet and all jumped freely and without hesitation any obstacle at which they were put.

After having completed his inspection of officers chargers, the general invited us to accompany him in a motor to inspect the remount depot, which is located about two miles from the castle and is under the charge of a major of cavalry.

There are about four hundred horses kept at the depot, two hundred of which are three year olds and two hundred four year olds. These young horses are bought by a Commission of cavalry officers when they are three-year-olds. They are



SWEDISH OFFICER JUMPING. SCHOOL IN REAR.

bought in the spring and remain at the remount depot about sixteen or eighteen months. These horses, while they seemed to me to be rather undersized, showed good breeding and seemed to be quiet and docile.

Depending upon the size of the class at the School of Application as many as possible of these horses are trained yearly by the student officers, the horses being trained for two years, before being sent to their regiments.

These horses cost the Government from 500 to 1,000 kronor each, or from \$150 to \$375. Occasionally more is paid for an extra good "prospect." Swedish officers have told me that there are not as many good horses bred in Sweden as formerly. This they ascribe to the advent of automobiles, and prohibition on gambling at the races in Sweden. This fact seems worthy of note.

I could not imagine any more perfect location for a cavalry school than Strömsholm. The country for miles about the castle is level and covered with a fine, strong turf. This plain is wooded by "islands" of ancient oak and birch trees, which afford plenty of shade in summer, and "breaks" against the cold north wind during winter work. Jumps and obstacles of every description are scattered over this terrain, and what struck me particularly is that all the Swedish jumps are built without wings.

Returning from the remount depot to the inspection ground, we again met the class who had in the meantime changed horses. These, we were informed, were called "the one year horses." Every year the Royal Swedish Horseguards and the Lifeguard Dragoons (both regiments stationed in Stockholm) send to the school thirteen young untrained horses each. These twenty-six horses are then trained by the student officers for two years, when they are returned to their regiments. The horses we now saw had been under training for one year and seemed perfectly quiet and under good control at the various gaits and movements, and jumped a portion of the steeplechase course well and steadily.

This inspection took the General until 11:00 o'clock at which time we returned to the castle, and had lunch with the student officers in the mess hall of the castle, which is separate from the main building. General Nyblaeus is a keen student of cavalry, and during the course of the luncheon he asked me many questions concerning our service. The luncheon was not a formal affair, and was the usual one that the students have, no beer or liquors were in evidence, the beverages being milk, tea and coffee.

At half past twelve a large "drag," drawn by four perfectly matched chestnut stallions, drove up and our hosts informed

us we were to go to the school stables and witness another ride by the student officers.

As previously noted, the stables, riding hall, etc., are located about two miles from the castle, and when we arrived at the stables we found the class assembled and mounted on their "number two" private horses.

The inspector first went through the class and inspected them minutely, apparently examining the condition of the horses and the cleanliness of each officers equipment. I followed the inspector along the line and noted that, in every case, the curb chains were very tight, in fact so much so that it was impossible to put a finger under them.

The riding was very much the same thing we had seen in the morning except that the General gave several of the student officers what I thought was a decidedly thorough oral examination, to demonstrate that not only could they perform the required movements themselves, but that they were qualified to instruct others.

While the General was occupied with his oral examination, I was shown the school stables by Lieutenant Rosencrantz, one of the instructors. The stables are models, quite the best I have ever seen anywhere. The stable that I saw held, I should say, about one hundred and fifty horses. It was a frame building with two rows of separate stalls, one on each side, horses facing out. This is a good idea which we should adopt. The old swinging bar in our double stalls has injured more horses, and lost the Government more money than the partly saving of a few hundred dollars in lumber saved by not having a partition.

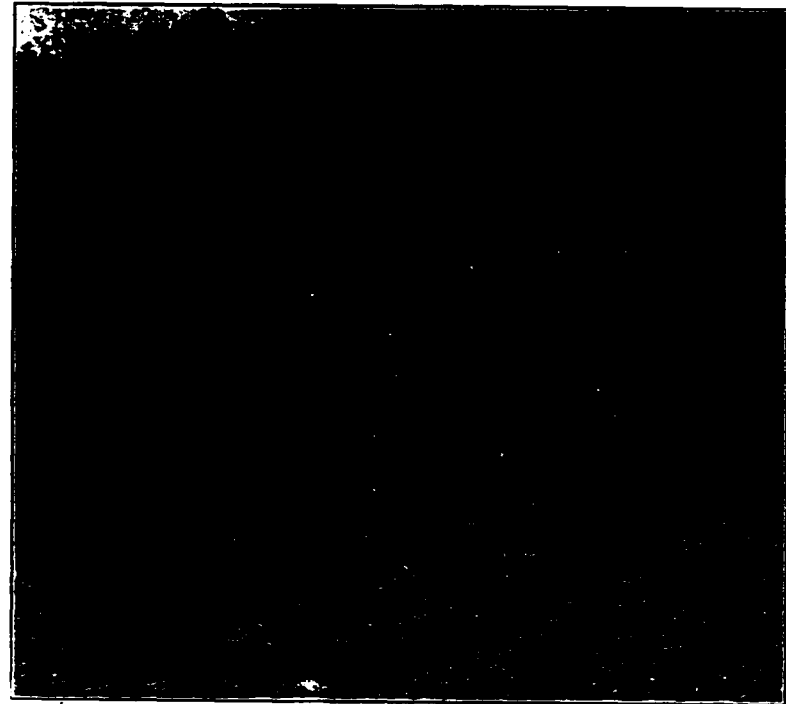
The floor was cement and covered with fresh sawdust to a depth of two inches. This is kept neatly swept up by the stable "police," leaving a path on each side between the edge of the sawdust and the heel posts. Stall floors were of dirt, the horses were bedded above their knees in perfectly clean rye straw. The bedding was much more abundant and of a better quality than I have ever seen in any troop stables in our service. This is accomplished by having two men on duty as stable police at all times, to remove manure droppings immediately. By this method manure is not trodden into straw, soiling it

and causing great wastage. There was no perceptible odor of any kind in the stables. During the summer months flies are a veritable pest at Strömsholm, but I noticed that in these stables there were very few flies bothering the horses. Bunches of green leaves were hung from the roof the entire length of the stables about every ten feet, three bunches in a row across the stables. I noticed that large numbers of flies were "roosting" in these leaves and did not seem to want to leave them. In addition to this, above every other stall there was suspended a strip of sticky fly paper hung from the rafters, and all of these I noticed were black with flies. The horses all had light linen sheets over them, and seemed very quiet, and not stamping and fidgeting as our horses do in our stables in summer. I think that we might well copy this plan, as it would be without expense excepting a small sum for the sticky fly ribbon, which would be amply paid for by the increased comfort and resulting condition of our horses in summer.

Every horse's grooming kit is hung on the heel post, and there were platted straw mats on the floor and hung above the stalls. Every horse's name, with that of his owner, hung over the stall, his breeding (the horse's) was given if a thoroughbred, and a list of prizes if any that he had won. These stables were much lighter than ours; big windows four by four feet over every stall, those on the south side had bluing on the glass to subdue the sunlight.

Leaving the stables I found that the General had completed his inspection and that we were to drive to Lake Mälär to see the swimming exercises. On the way to the lake we were informed that we should witness the descent, by the class, of a steep bank, "quite as the Italians do at Tor di Quinto" our hosts told us. Before arriving at the lake we stopped at a large semi-circular gravel pit on the right of the road. This pit was quite a hundred feet in depth and a hundred yards in diameter. At the top, in most places, it was very precipitous—in many places perpendicular for six or eight feet down—and in all places rocks and sand to the bottom, at an angle of 45 degrees. As we approached on the road the class appeared above, along the top of the pit, some on their chargers and some on remount horses. They ranged themselves around the top of the pit

and at a word from the instructor they all rode calmly over the edge and descended, I had better say slid, to the bottom. Not a horse nor a man fell; where the sand was loose the horse quietly sat down and slid with it, sometimes half buried, but without the slightest trace of nervousness—where it was rocky they picked their way like cats. I noticed two horses get among rolling stones and, instead of going crazy, they sat down on



DESCENT OF STEEP BANK BY CLASS. AT SEVERAL PLACES THIS BANK WAS PERPENDICULAR FOR FIVE OR SIX FEET.

their tails and slid until they struck sand. It was as pretty a maneuver and as prettily executed as I have ever seen.

Arrived at the shore of Lake Mälär, on a good beach, the student officers demonstrated their ability to take care of themselves and their mounts in the water under all conditions. Different methods of teaching horses to swim were shown, an

officer in the stern of a rowboat led his horse into the water with a cavesson and longe, then two horses thus equipped were swum side by side. All the horses were required to swim around a buoy about a hundred yards from shore.

The officers swam their horses without saddles and with them; without clothing on and in full uniform; equipped for the field in heavy marching order; and part of the class, without clothing on, swam the arm of the lake at that point over a half a mile wide. Every horse I saw entered the water freely, without fear or hesitation, and really seemed to enjoy the exercise.

I take off my hat to the Swedish cavalry officer. He certainly can ride and ride well, and, while Sweden has not a great deal of cavalry, her mounted officers have made the most of their opportunities and I think will rank individually as high in horsemanship as any officers in Europe. I cannot say that I admire the appearance of the Swedish seat as taught at Ströms-holm, but it seems to get the results they desire. Neither can I understand how, in biting their horses as severely as they do they can avoid toughening and deadening their mouths, but, one and all, they swear by the tight curb chain.

Driving back to the school at the conclusion of the swimming exercises, we were shown the Royal Stallion Depot. There were, at the time of my visit, about one hundred and thirty stallions at the depot. These stallions are standing all over Sweden in the country districts, and are brought into the depot during the summer. I saw all classes of stallions for all kinds of work, from the heavy farm horse to the thoroughbred. I was struck by the quiteness and gentleness of these animals. They stood, side by side, in ordinary stalls with low partitions, as quietly as geldings would have done. Some of the thoroughbred stallions were in large airy box stalls, and among the latter I noticed a son of the famous English horse "Isinglass" and a son of "Saint Frusquin." These stallions are available for use by the farmers at the nominal fee of 20 kronors, or \$5.50, this of course for the thoroughbreds to approved mares. I was struck with the extreme cleanliness with which these stables are kept as well as those at the school.

This inspection concluded the work of the General for the day, and that evening the Commandant entertained at a large and formal dinner in honor of the Inspector General and the visiting Military Attachés.

On Sunday morning we were in the saddle and on the way to the steeplechase course at 7:30. The General explained that, as it was Sunday, and as there were to be races in the afternoon,



OVER A SWEDISH FENCE.

that this would be a short inspection. When we arrived on the ground we were met by the class mounted on the "second year" remounts, that is, the twenty-six horses that had been sent by the two cavalry regiments stationed in Stockholm, the "Life Horse Guards" and the "Life Dragoons." The Inspector gave them the closest inspection of all and it lasted from 8:00 o'clock until 10:30. I wish to impress on the reader that these

horses were not going back to the regiment to be used for officer's mounts, but to be assigned to troops for the use of the private and "non-coms," and right here I wish to say that I have never seen quiter or steadier horses in my life, and the Inspector required them to do anything that came into his head to prove it.

The first test was the ordinary riding school training, gait, walk, slow trot, fast trot and gallop; turnings on forehand and haunches, backing, shoulder in, work on two tracks, changing leads on straight line, in fact all the regular school work.

Then followed various tests to show the willingness of the individual horse to leave ranks under any circumstances. They were required to leave ranks to the front, to the rear and by the flanks, and at all gaits, and the Inspector satisfied himself that not only *some* of them would do it but that each and every horse would. Then followed a close order drill in two platoons in single rank, most of the movements being simple and consisting mainly in following in trace at the different gaits. The students then had to show the Inspector that their mounts were steady under fire and riot conditions. The horses were brought together in a bunch and carbines were fired in among them, from their backs, and from the ground under their bellies; while at a halt they were charged by a lot of dismounted men shouting and firing their rifles. Not a horse moved or showed the least sign of nervousness during the entire performance. They were then ridden at a walk through a line of skirmishers lying on the ground firing. One or two horses only were observed to even toss their heads. They were required to charge directly at, and into, a dense mass of woods, in which a line of skirmishers was concealed and firing rapidly. The exercise included cutting at heads and at dummies on the ground, and finally, when we thought that the Inspector had certainly seen all there was to see in these particular horses, we started out on the road in column of trooper and we went in this formation for nearly two miles. The Inspector would ride along the line and when he came to what seemed a particularly nasty obstacle bounding the road he would say to the officer nearest him: "Take your horse over that and return." The officer designated would leave the column by the flank, jump whatever obstacle he found in front of him and regain the column by jumping

back into the road again. Stone walls, banks, post and rail and gates bordered the highway, and the only class of obstacles that was not jumped was wire.

Arriving in the vicinity of the school stables, the student officers, not having jumped enough in the mind of the Inspector, had to take their horses twice around the course of the "Stockholm" jumps. During the whole performance I only saw one horse refuse and he jumped the obstacle at the second attempt.



A DIFFICULT STUNT. JUMP OVER FENCE AND DITCH AND ON TO STEEP BANK.

When at 10:30 the Inspector announced that he was satisfied, I for one certainly agreed with him, and I told him that I wished that I had twenty-six such horses in my own troop. To which he replied: "You can easily do so if you take them young, at four years, and then take the trouble."

The steeplechases which were the final event of the school year were scheduled to start at 2:00 P. M., and in the meantime we returned to Major Linder's to a delicious buffet luncheon. A number of Swedish cavalry officers, former graduates of the school, had arrived from Stockholm to spend the day and witness

the races, and prominent people from all over the provinces had arrived in motors and carriages, for these races are one of the events of the summer, and so we were a very gay party.

It was a perfect day and the smart toilettes of the ladies with bright uniforms of the different regiments made a very pretty picture as we dismounted from the school "drag" at the paddock.

The Strömsholm steeplechase course is a decidedly stiff one from the riders point of view. The jumps are big and the course is quite a difficult one to follow, I should say, for a rider who did not know it thoroughly, for it winds about among the clumps of trees in quite an intricate manner. For this same reason it is marred for the spectator, for one has to run from point to point to get a view of the race, except just at the "stretch" and the finish.

There was a large attendance, the farmers and people from the nearby towns coming in large numbers. I estimated that there were at least three thousand people present.

The races themselves were excellent. There were six races, all steeplechases, with from four to ten entries in each race. They varied in length from 2,500 to 3,500 meters. There is no public betting allowed in Sweden so the student officers had a small book arranged among themselves.

After the last race Madame Linder, the charming wife of the Commandant, distributed to the young officers the cups that they had won in the various events also the prizes for excellence in horsemanship that had been won during the year. We then returned to the castle for the big event of the year, looked forward to by every student officer and instructor, the graduation dinner. Unlike our graduation "affairs" this was not a "stag" dinner and some hundred officers and ladies sat down to it. I may also state that it was a "grape juice" dinner, but in this case the juice was fermented and I saw a good deal of it labelled "Moët & Chandon." Unfortunately an uncompromising railway schedule forced Colonel Straub and myself to leave before this very delightful affair was over, and we reluctantly bade adieu to our hosts and departed, carrying with us recollections of charming hospitality and an interesting experience that I trust will be long in passing from our memories.

THE CAVALRY COLUMN FROM HARPER'S FERRY IN THE ANTIETAM CAMPAIGN.

BY CAPTAIN I. W. HEYSINGER, M. A., M. D., M. O. L. L. U. S.

There are several reasons for endeavoring to present in detail the operations of the Union Cavalry in their expedition, and all-night ride, from Harper's Ferry to Greencastle, in Pennsylvania, on the night of September 14-15, 1862, which former place was surrendered on the morning of September 15th.

In the first place, those who have written of these operations were ignorant of the topography and the highways of this region, which they passed during a night of intense darkness, up to three o'clock in the morning, and over unknown roads, and where there were no roads, to an unknown destination; so that, however desirous these writers may have been, it was impossible for them to have described the route. In the second place, no official reports of this expedition were ever made, because the expedition was composed of a number of disconnected cavalry organizations, forced by outside pressure into Harper's Ferry from all points of the compass; never brought into a single body at Harper's Ferry; and which were brought together into one compact column for this night alone, and were immediately afterwards separated into other organizations after reaching Pennsylvania, which was substantially coincident with the operations immediately preceding, during and subsequent to the battle of Antietam; while the commanding officer at Harper's Ferry was killed the next morning, September 15th, at Harper's Ferry, and a subordinate officer, not concerned with this expedition, took his place, and, with him, all the Harper's Ferry garrison were surrendered prisoners of war, paroled, and sent adrift, also, to all points of the compass.

The proceedings of the Harper's Ferry Military commission, narrated in the War Records, Vol. XIX, Part 1, were not

for the purpose of establishing the route or operations of the cavalry expedition, but to determine, if possible, the responsibility for the surrender of Harper's Ferry, and only so far as the departure of the cavalry from that garrison the night before the surrender was concerned, did the cavalry properly figure.

Brigadier General Julius White, who succeeded to the command, when Colonel Miles was mortally wounded on the morning of September 15th, in his report dated September 22d, says:

"In the evening, (of September 14th) the entire cavalry force consisting of the Twelfth Illinois, the Eighth New York, the Seventh Squadron Rhode Island Cavalry, and two companies of the First Maryland, were ordered to cross the Potomac, upon the pontoon bridge, taking the road in the direction of Sharpsburg, to cut their way out if possible, there being no forage, and they being useless in the defense of the place. Under an experienced guide, they succeeded in so doing, and captured a portion of General Longstreet's ammunition train and some prisoners on the way."

The above is the only official report which I have been able to discover, and that not by one connected with the expedition, so that I think that it will be agreed that the "Escape from Harper's Ferry" is a misnomer. I am sure that no one in the expedition so considered it, on starting, and certainly not during its continuance, or after its results. As one of the officers, while directing the men, before starting the column, described it, it was to be "McClellan or Hell." He also gave notice (as it was a matter of volunteering) that anyone doubtful of the event was at liberty to quietly drop out, and nothing would be said. A few did so, but none that I personally knew.

It is true that I was only a corporal at the time in a New England student company, but I afterwards served through successive grades up to that of captain, until November, 1865. I was born near by; my relatives lived all round our route, and I was familiar from boyhood with every road, path, plain and mountain, as anyone could be who had grown up, hunted, fished, visited, went swimming, and did all the things that boys do when left to their own devices, so to speak, among scenes as vivid today and as well remembered, and as much beloved, as

they were on that night. I suppose that no one in that cavalry column, but the writer, knew every mile we traversed, and all the mills, creeks, villages, and even farms, woods, fields and dwellings, for many miles around, by night or day, for in both I was equally at home.

In the third place no one knew the route we were to follow, and if anyone had known it beforehand, it would have, with its constant changes, turned out to be an altogether different way; and the same is true of our destination.



MAP OF THE DEFENSES AND APPROACHES OF HARPER'S FERRY.

Reproduced from "Battles and Leaders of the Civil War."

In the fourth place, while, on September 12th, when Harper's Ferry, (at the bottom of a topographical soup-tureen), was sealed up on every side by a hundred Confederate regiments,

with all their artillery, under such splendid generals as McLaws, Anderson, Walker, Stonewall Jackson, Ewell and A. P. Hill, that post was then, when too late by days, placed under the command of General McClellan, when it was impossible for that officer to learn anything about us, or for us to learn anything about him. All we knew was that during Sunday, the 14th, we heard the roar of the guns from the battle of South Mountain,* and from Pleasant Valley and Crampton's Gap, and that of the Confederate artillery as well, during the whole afternoon, firing upon Harper's Ferry from Maryland Heights across the Potomac on the north and northwest, from Loudon Heights across the Shenandoah, on the east and southeast, and from Bolivar Heights on the south and southwest, across the angle from one river to the other. All of their batteries were hundreds of feet higher than our own ground, and within short and easy range; and that to leave Harper's Ferry at all, in any direction, was merely to choose which particular sort of enemy we would have to force our way through.

McClellan knew nothing of our expedition, and we nothing of where he might be, for we knew nothing of the events of the South Mountain or Crampton's Gap battles, nor of who was attacking, or who was attacked, or who was succeeding or who failed.

In the fifth place, through a series of most remarkable coincidences, totally unexpected and the significance of which no one at the time could have perceived, and by a similar series of coincidences on the part of the Confederates, all the way from the pontoon at Harper's Ferry for fifty miles clear up to the Pennsylvania line, the expedition resulted in the most profound effects on the battle of Antietam, and probably on the subsequent course of the war. The capture of two-thirds of all of Longstreet's ammunition largely paralyzed his work on the left of Lee's army during the battle, and probably prevented the attempted flank movement around the right of our own army, during the afternoon of the 17th, as I shall describe later on, on competent authorities.

The result in other words, was akin to that of the destruction in the fall of the same year, of General Grant's main supply

*At Turner's Gap.

station, at Holly Springs, in Mississippi, while Grant with a great army was pushing down by land, to Jackson Mississippi, to take Vicksburg from the rear, in December, 1862, similar in results to the Confederates, as ours was to the Federals.

The Confederate General, Earl Van Dorn, in conjunction with the operations of General Forrest, had passed by Grant's flank far down south of Oxford, Mississippi, and struck Holly Springs in Grant's rear, December 20, 1862, at daylight, with the following results, from Confederate reports, and authenticated by Grant's own.

"I surprised the enemy at this place at daylight this morning; burned up all the quartermaster's stores * * * burned up many trains; took a great many arms, and about 1,500 prisoners. I presume the value of the stores would amount to \$1,500,000."

I myself was at Holly Springs a year later, and certainly it was then a scene of desolation, with evidence of vast destruction all around. For this, the Union commander at Holly Springs was dismissed from the service.

General McPherson writes, December 20, 1862: "I am apprehensive that the cavalry dash into Holly Springs has been a pretty serious affair for us. An order will be sent to your command (from Grant), putting your troops on three-quarters rations; I shall do the same for the whole of my command."

General Grant reported to Washington, December 25, 1862, that the loss at Holly Springs "will probably amount to \$400,000, and 1,500 prisoners." He fell back to the line of the Tallahatchie River, "with the road strongly guarded to the rear, waiting for communication to be opened, to know what move next to make. It is perfectly impracticable to go further south by this route, depending on the road for supplies, and the country does not afford them."

December 21st, General McPherson ordered his whole command back to Oxford, Mississippi.

General Grant writes, December 23d: "Raids made upon my rear by Forrest northward from Jackson, and by Van Dorn northward from the Tallahatchie, have cut me off from supplies, so that further advance by this route is perfectly impracticable." In fact, the whole campaign was abandoned and lost.

General Halleck, December 27th, sends a dispatch to General Hurlbut: "Memphis must be held at all hazards."

Of course these events and results differ from those of the cavalry expedition from Harper's Ferry, in that the operations of Forrest and Van Dorn were systematically undertaken and carried out, but they show what enormous effects can be produced upon an army apparently out of reach, and its whole campaign destroyed by cavalry forces totally inadequate to produce such results by any direct attack. These were "riding-around" indeed, while Stuart's, in the east, were simply "show-pieces," and did no damage excepting to his own horses, and his army's communications. But then General Stuart was not General Forrest.

An operation bearing considerable resemblance to the cavalry expedition from Harper's Ferry, in the total ignorance of both the contending armies, but on a more extended scale, and with results which led directly to the capture of the British army at Yorktown, and the triumphant end of the war of the Revolution, may be found in the campaign of King's Mountain, in 1780, which is told vividly and delightfully in President Roosevelt's "Episodes from the Winning of the West," so as to have become a classic.

The strange apparition of these mounted mountaineers, emerging from the valleys and through the passes of the Alleghenies and Blue Ridge, and pouring down to attack the unsuspecting Britons, utterly unknown to them, as well as to Washington or to any other commanders on either side, crushing, destroying or capturing the enemy, and then, with the same suddenness, pouring back beyond the mountains again to fight the Indians. This left only bewilderment behind, and opened the gates of Virginia to success; saving Georgia, the Carolinas and Virginia to the Continentals, and finally showing its momentous results in the freeing of our country from British invasion. This has a strong analogy with the operations of the cavalry upon Longstreet's trains, and their reporting to McClellan. In both cases, apparently, coming up from the earth or down from the skies, and then disappearing again as an organization. It certainly affords an interesting parallel as illustrating one telling phase of the accidents of war.

In the sixth place, then, this narrative of mine, with its details, seems to me to be justified, because it is based on both Union and Confederate documents and reports. Also because it is written by one born and raised on the borders of Pennsylvania nearby, whose brothers, uncles and other relatives were residents of Boonsborough, Clearsprings, Williamsport, and other places in the same area, and who was well acquainted with all the roads, mountains, creeks, rivers, and topography from his childhood up, and who was a roamer during his vacations, (and often at other times), over all this region, up to the time when the events herein described had occurred; and often since. So that all this makes it desirable that one so familiar by night and day, with these scenes, in which he was an actor, should correlate the various data into a comprehensible and authentic narrative of this strange, unforeseen, and unexpected, as well as important, minor act of the War of the Rebellion.

Regarding the available evidence as to the number of troops which constituted this cavalry expedition, the official data, (War Records, Vol. XIX, Part 1), are as follows:

General Wood's report, September 27, 1862, says (p. 519): "1,500 cavalry were ordered to leave before the surrender."

Aide-de-camp Binney's report, September 18, 1862 (p. 537): "Rhode Island and Maryland cavalry, 400."

From the testimony taken before the Military Commission (same volume, p. 583): "There were nearly 2,500 cavalry (at Harper's Ferry)." Lieutenant Binney, aide-de-camp.

The official return of casualties at Harper's Ferry (before the departure of the expedition), page 549, gives the cavalry losses as 274.

Aide-de-camp Binney, (p. 591), says again: "We had about 11,500 men, exclusive of cavalry, we had nearly 15,000 men including cavalry." The dispatch of Colonel Voss, the Commander of the Expedition, to General Halleck, from Greencastle, Pennsylvania, September 15, 1862 (p. 758), says: "I left last evening at 8:00 o'clock, with the cavalry, about 1,500 strong."

The chief of Ordnance reports requisition for 600 Sharp's carbines with accoutrements, September 3d, for the 8th New York cavalry (p. 760).

Page 778, Colonel Ford is cited, saying that he had about 275 cavalry on Maryland Heights, up to September 12th.

General Wool's testimony before the Military Commission, (p. 791), says: "Colonel Miles had 13,000 there at first, but he sent away 1,500 cavalry."

Regarding the topography and defensiveness of Harper's Ferry, General Julius White testified before the Military Commission (p. 717), as follows:

"I regard Harper's Ferry as a very weak position instead of a strong one. The popular idea that it is a strong one is a fallacy. The three commanding positions about it, Maryland Heights, Loudon Heights, and Bolivar Heights, either of them being above it, either of them being possessed by the enemy, Harper's Ferry is commanded by them, and each command on these positions necessary for the defense of Harpers' Ferry is necessarily detached from the others, not within supporting distance by the others, on account of the great natural barriers offered by the Potomac and Shenandoah; and during an engagement it is not practicable to support one position by the forces at another."

General McClellan telegraphed to Halleck, at Washington, September 10th (11th), "Colonel Miles is at or near Harper's Ferry, as I understand, with 9,000 troops. He can do nothing where he is, but could be of great service if ordered to join me by the most practicable route."

In General R. E. Lee's report, he says: "It has been supposed that the advance upon Fredericktown would lead to the evacuation of Martinsburg and Harper's Ferry, thus opening the line of communication through the valley. This not having occurred, it became necessary to dislodge the enemy from these positions before concentrating the army west of the mountains."

General John E. Wool, in whose command Harper's Ferry then was, telegraphs Colonel Miles, September 5th: "You will not abandon Harper's Ferry without defending it to the last extremity."

And on September 11, 1862, General Wool telegraphs Governor Pierpont, at Wheeling: "I would not under the present uncertain state of affairs, feel justified in removing from Harper's Ferry or Martinsburg any of the forces stationed there."

September 12th, (as elsewhere stated), but too late, Harper's Ferry and its garrison were put under the control of General McClellan, "when he could reach it." Before that he had been, and was still, utterly powerless either to utilize or save it.

In the testimony before the Military Commission, among many inferences and erroneous statements, made on insufficient data, there are a few which bear on the subjects of this narrative.

For example, Lieutenant Bacon, of the infantry, states, from hearsay, of the cavalry, that they "took across roads, and cornfields and things of that kind." This is corroborative of what I shall have to say of our route, after leaving the Hagerstown—Sharpsburg turnpike, a mile south of Jones's Cross-roads.*

Lieutenant Colonel Hasbrouck Davis, of the 12th Illinois Cavalry, who commanded that regiment during the expedition, Colonel Voss being in general command, makes an interesting but too brief statement, principally with reference to the suggested passage of the infantry and artillery, which, of course, the imperative orders to Colonel Miles had forbidden.

He says: "We marched very swiftly, much of the time at a gallop; especially when we passed the pickets we went at a gallop; at other times at a trot. Until we reached Sharpsburg we marched at an exhausting rate; at a too exhausting rate I thought. We passed the rear pickets of the enemy's force this side (east side) of the Antietam works." These were the iron-works at the mouth of the Antietam.

Again, "We passed over the pontoon bridge and turned to the left in column of twos; we passed up between the canal and the bluff, and then turned to the right in the woods, and passed up several steep eminences. * * * At the rate we marched that night, it would have been utterly impossible for the artillery and infantry to have accompanied us, even if the road had been good."

Captain Powell, an engineer officer, says: "I know the enemy were very much surprised when they got in there and found so very few horses to take."

*Not shown on map. Jones's Cross-roads is at the intersection of the Sharpsburg—Hagerstown road with the one from Boonsborough to Williamsport.

One of the men of my company, then a prisoner, narrated to me, after his parole, how Stonewall Jackson, near whom he was standing, acted when he rode down to the headquarters of the surrendered garrison. In his short way he said, "Where are your horses? Where is your cavalry?"

"They are gone," was the reply.

"Gone!" he exclaimed, "Gone where?"

"They left last night, across the pontoon."

He sat on his horse in deep silence for a whole minute, and then said, "I would rather have had those horses and that cavalry, than everything else there is in the place."



THE OLD LUTHERAN CHURCH, SHARPSBURG.

Reproduced from "Battles and Leaders of the Civil War."

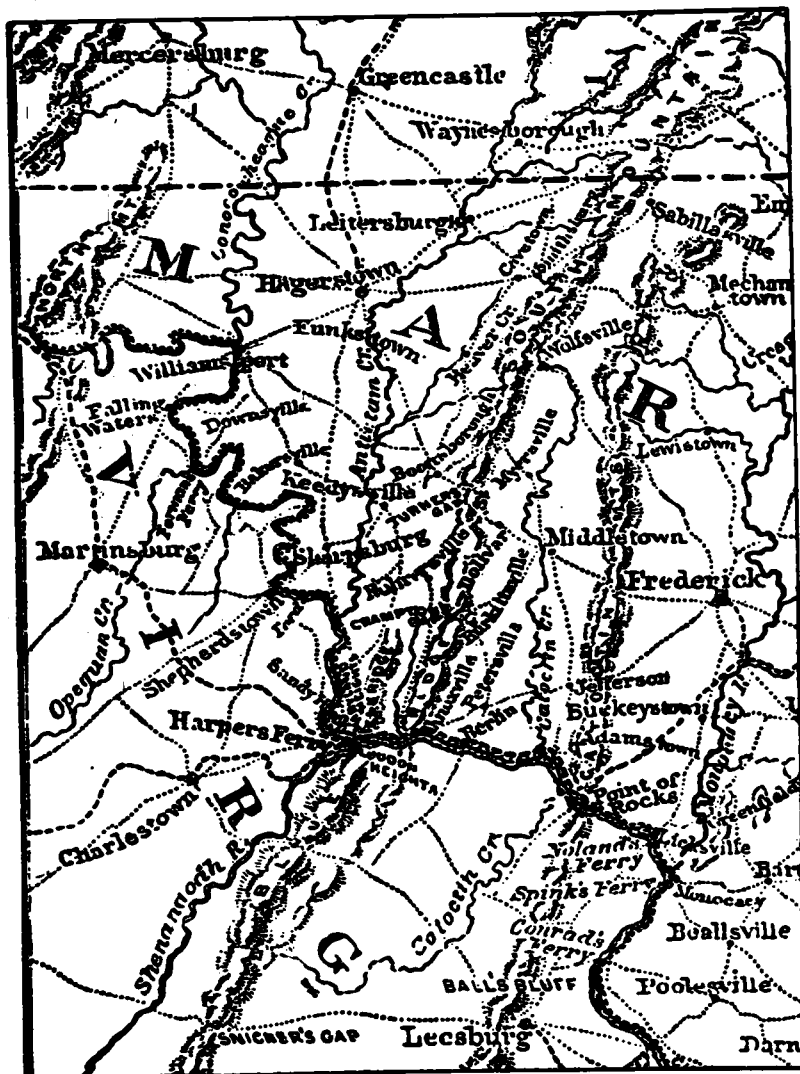
Between the eastern end of Sharpsburg, and what is now the National Cemetery, there stood, in 1862, an old abandoned Lutheran Church, on a hill through which the street was cut to grade. It is beautifully shown on the colored map of the Battlefield of Antietam, prepared by Lieutenant William H. Willcox, topographical officer and acting aide-de-camp on General Doubleday's staff, from actual surveys made shortly after

the battle, and which is the best map of the topography and positions, and of the surrounding region, with which I am acquainted. At the eastern edge of Sharpsburg this old church is clearly shown, as well as the Sharpsburg—Hagerstown turnpike. There is also an illustration of this abandoned church on page 605, Vol. II, of "Battles and Leaders," (Century Co., New York).

Here was posted on the night of September 14th the advance of Lee's army, retreating from the battlefield of South Mountain, and here, as General Lee reports, we encountered this strong advanced post, on our way from Harper's Ferry. This encounter was, in fact, the opening of the battle of Antietam, for during the remainder of the same night the operations of the cavalry were directly and continuously contributory to that great victory.

At midnight we encountered Lee's advance, as stated, at 3:00 o'clock we were near Jones's Cross-roads, in advance of Pendleton's artillery, which shortly afterwards crossed the turnpike, on its way from Boonsborough to Williamsport. Pendleton sent messengers back to Sharpsburg, which carried off, in the vain pursuit of the cavalry, one half of the Confederate troops placed on the 17th to defend the Burnside bridge and the fords of the Antietam, and thus opened wide to Burnside the backdoors to the whole rear of Lee's army. At 5:00 o'clock Monday morning, September 15th, we encountered, attacked, and captured Longstreet's entire ammunition train, eighty-six heavily loaded wagons and hundreds of prisoners. This was two-thirds of Longstreet's whole supply, and its loss halted the attempted turning movement around McClellan's right on the afternoon of the battle. Next day the cavalry was ordered from Greencastle, Pennsylvania, back to the battlefield, where it held the ground near Jones's Cross-roads during the battle, "The extreme right of McClellan's army," and where the attempted turning movement would have first struck our lines.

I have often thought that on this battlefield, the greatest of the war, and to which victory the operations of this cavalry so accidentally, and yet so powerfully contributed, there should be a memorial, among the other splendid memorials there, of



MAP OF THE MARYLAND CAMPAIGN.

Reproduced from "Rattles and Leaders of the Civil War."

this "Cavalry Column from Harper's Ferry," as there is of A. P. Hill's Confederate command, also from Harper's Ferry, and that this memorial should stand near where the old Lutheran church, on the eastern edge of Sharpsburg, stood, and where the Union troops, on that eventful midnight, first struck the advance of Lee's army, at the eastern entrance to Sharpsburg, and, as I have said, actually opened the greatest and most bloody battle of the war, Antietam.

Let us imagine a parallel case. Suppose that Stuart, in the Gettysburg campaign, the following year, instead of wandering off to Hanover and Carlisle, had boldly cut north between three corps of Meade's concentrating army, at night, and passed on directly through one of these divisions bodily; had pushed on by Emmettsburg, and encountered with rifle fire Reynold's advance picket force on Seminary Hill, at the edge of Gettysburg; had then turned south through the fields, passing through the bivouacs of many of Meade's wearied and hungry stragglers; had crossed the artillery reserve route of Meade's army, barely missing in the darkness four of his regiments marching directly down upon the cavalry; then by another right-angled deflection (made in ignorance of this brigade), crossing the line of march of Reynolds' whole ammunition train, and halting, attacking, and capturing it, with nearly one hundred heavily loaded wagons, six mules each, and six hundred prisoners, and carrying off the same in a wild helter-skelter run, and delivering the whole to Lee at Cashtown; and then returning under Lee's orders, the next day, to guard the fords of Rock Creek against a flank attack of Meade's right, during the battle of July 2d; would not these cavalry have justly claimed a full share in the battle of Gettysburg, and have received due recognition?

So I come, at last, to the narrative of this night of September 14th and 15th, of the year of 1862.

The principal firing which I heard until we attacked Longstreet's wagon-train, and its brigade guard, was there, at the old Lutheran church, at the eastern entrance to Sharpsburg by the turnpike, from Boonsborough.

At this time, midnight, General Lee was asleep at Keedysville, on this same turnpike, two and one-half miles distant

from Sharpsburg, and his trains were retreating from South Mountain, and were slowly pushing on to his positions, already selected for the coming field of battle.

That he should have marched out with his front unguarded, and with his flanks "*in the air*," without a single post in his advance, with Harper's Ferry besieged in his left front, and Couch, Franklin and even McClellan on his flank, by the Rohrersville road, is simply incredible. In fact, we are at no loss to know what measures Lee took to avoid these dangers. In his report to the Confederate President, September 16, 1862, (War Records, Vol. XIX, Part 1, p. 140) he says: "Accordingly the troops were withdrawn, *preceded by the trains* and about daybreak took position in front of this place," which was Sharpsburg, from which the report was dated. This indicates that the trains had passed Sharpsburg before daylight, the troops having taken position in their rear, and in front of that place, and so, facing McClellan's pursuing army. It is certain that none of Lee's trains had entered, or passed through, Sharpsburg when we encountered his advanced post, which was in advance of the trains, facing towards Sharpsburg, the only direction from which they could protect them, for the troops behind the trains fully protected them in their rear. In Lee's report to President Davis, of September 21st (p. 142, same volume), he says that on the night of the 14th he determined "to withdraw from the gap in front of Boonsborough to Sharpsburg." In his report of same date he says, "Unfortunately, that night, (14th), the enemy's cavalry at Harper's Ferry evaded our forces, crossed the Potomac into Maryland, *passed up through Sharpsburg, where they encountered our pickets* and intercepted on their line of retreat to Pennsylvania General Longstreet's train on the Hagerstown road." General Lee, writing only a day or two afterwards must have known where his pickets were, and this same night he slept at Keedysville, between Boonsborough and Sharpsburg, with his trains passing along the turnpike, and followed by his troops. As shown on the maps, and clearly so on the Willcox-Doubleday map already referred to, there is no road from Keedysville to Sharpsburg excepting the Boonsborough turnpike, which is direct,

and passes the old Lutheran church at the eastern entrance to that town.

In order to have reached the northern entrance into Sharpsburg from the Hagerstown pike, it would have been necessary to have marched from Keedysville one mile northwest (directly away from Sharpsburg), one mile southwest (parallel with the Boonsborough pike, six miles distant), and four and one-half miles directly south of Sharpsburg; all excepting the last over country roads, making this round-about distance six and one half miles, while from Keedysville to Sharpsburg, over the splendid Boonsborough turnpike the distance was only two and one-half or two and three-fourths miles, and nearly along an air line diagonal.

Hence the Confederate picket must have been in advance of the trains on the Boonsborough turnpike, and stationed at the old Lutheran church, where we encountered them.

Colonel Voss, commanding the cavalry column, in his unofficial report, in Sergeant Pettengill's book referred to later on, says: "Suddenly a sheet of flame illumined the darkness for an instant, followed by the report of at least a hundred rifles sending their laden messengers about our ears.

I was in the rear guard, in the main street of the town, and certainly, by the sound to me, Colonel Voss's statement was not exaggerated. General Lee says that we "encountered" their pickets in our passage through Sharpsburg.

Our orders were to force our way through the Confederate forces, and join McClellan, who was in that very direction, but with Lee's army interposed. In marching up the Potomac we would have been marching directly away from McClellan and into Lee. Hence we ran into Lee's pickets at the very spot where his retreat put his army directly between us and McClellan, but of which neither we nor the Confederates nor McClellan had the least idea. Such contingencies as these, to which several others will be added later on, are what make this expedition a game of cross purposes and coincidences stranger, from beginning to end, than anything I know of during the whole War of the Rebellion. Of course, accidental meetings and passings occurred, but here was a force which, to all human calculation, did not exist at all and it was dropped down sud-

denly as from the sky into the midst of a couple of hundred thousands of soldiers composing the two armies, and it was not a mere scout; it was a force of nearly 2,000 experienced soldiers, strong enough to take care of itself and play smash with whatever of all possible unknown factors it might possibly encounter in the darkness. And then it went out, it was not to return to Harper's Ferry, but to stay out, and join McClellan.

In fact there was not a place in the State of Maryland where, up to the night of September 14th, a picket post in any force would have been more useless to Lee, than on any portion of the Hagerstown and Sharpsburg turnpike, thirteen miles from Sharpsburg up to Hagerstown.

A vedette or two to guide approaching troops might have been well enough, had not the roads been so large and well known, but certainly not a post at the entrance of the Hagerstown pike into Sharpsburg, as has been said, or at the crossing of this pike by other roads leading from Boonsborough to Keedysville. From Boonsborough to Hagerstown the distance by the pike is thirteen miles. Longstreet, who had been marching all day, was rushed back from Hagerstown to Boonsborough by that road, with two divisions, leaving Toombs at Hagerstown to guard the supplies and trains, and march down the other pike to Sharpsburg. Stonewall Jackson, Ewell and A. P. Hill had all marched across this pike, crossing it at Jones's Crossroads, by the diagonal pike from Boonsborough to Williamsport, only four days before, and had left guards at Williamsport and down the Potomac; then driving all the Union troops on the Virginia side down to Harper's Ferry, while these Confederate troops, with Walker on Loudon Heights south, and McLaws and Andersons on Maryland Heights and along the north bank of the Potomac, had shut up Harper's Ferry and its whole force hermetically. General William Pendleton, Chief of Artillery, was at this very time following the track of Jackson from Boonsborough to Williamsport, and crossing just behind us, as I shall show. There was not a Union soldier for a dozen miles southwest, north, northwest or northeast of Sharpsburg, or anywhere up the Hagerstown turnpike, and the fact was fully established, and known to Lee and the others.

But that a strong picket post should have been placed at the eastern entrance of the Boonsborough Pike into Sharpsburg, was quite a different matter. There was a cross-road from below Rohrersville, (where Franklin then was), across the mountains to his northwest, and from McClellan's army, near Middletown, which had access thereto in a roundabout way. Lee himself was asleep near Keedysville, about two and a half or two and three-quarters miles from Sharpsburg on the Boonsborough Pike. Lee's trains were moving towards Sharpsburg, and through it from Boonsborough, ahead of his troops which were thus interposed between the trains and McClellan's pursuing army. Sharpsburg had already been chosen as the ground where Lee was to halt and accept battle, for Lee, during the John Brown days, was in command over this very ground. This picket post was, hence, the local point of Lee's whole concentration, from Hagerstown, Boonsborough, and, later, from Maryland Heights and Harper's Ferry along the southern margin of the Potomac.

This picket post therefore pointed southwest, for the Confederate army was moving southwest, while the Union cavalry were approaching from the southeast, and headed north, so as to join McClellan, who was to be looked for near or east of Boonsborough. There he would have been found, had not D. H. Hill halted in the passes, and blocked the way until the battle of South Mountain had been fought, on the 14th, while Jackson had passed on by Boonsborough and Williamsport, and Longstreet and Hood up to Hagerstown, on the way to Pennsylvania, from which all were finally turned back to Sharpsburg, after McClellan, a few hours later, had reached Boonsborough, but from which, at the time, by Lee's retreating but interposed army, the cavalry from Harper's Ferry was totally cut off. Hence the encounter with Lee's advance picket on the Boonsborough pike, to which Lee refers in his report, and hence, too, the route of the cavalry was suddenly deflected from the east to the north, so as to pass around Lee's right flank and thence reach McClellan, as directed in the orders under which the cavalry was moving. I do not speak of this encounter as a sanguinary affair; it was a strategical coincidence, but one of high importance.

By what road now did this cavalry leave Sharpsburg? Was it by the country road diverging from the Hagerstown pike, which passed northwest from the western end of Sharpsburg, to New Industry and Mercersville, where the road touches the Potomac (some miles above)? Or was it by the Hagerstown turnpike, which was due north from the eastern end of Sharpsburg, and is immediately contiguous to where the picket post was encountered, and at right angles thereto and which is a broad and a capital highway, straight up to Hagerstown, where no one dreamed that Lee's troops were. In fact, the Hagerstown pike was the only possible road by which the cavalry could reach McClellan, as ordered, and everybody in the column knew that.

But, irrespective of this evidence, it would have been highly improbable that the cavalry would have left Sharpsburg by a road which would have brought them immediately alongside the Potomac, along the southern bank of which, only the preceding day, as we fully knew at Harper's Ferry, Jackson's force had been passing; which had forded the river below Williamsport, and doubtless left troops there, as was actually the case. Jackson could easily have thrown a force across and driven the cavalry back upon Lee's army had it come into sight, and his troops could not have failed to understand from whence this cavalry was coming.

I do not say that this could have occurred, but there was nothing to show us that it would not occur, for while we were so little informed about Lee, we were fully informed about Jackson. This was because some of our cavalry had scouted up the north side of the Potomac from Harper's Ferry while Jackson was marching down the south side, and this scout was nearly up to the mouth of the Antietam creek. This was on the evening of the 12th, and we had heard the guns, and saw the troops from every side, during the day we left (Sunday), firing upon Harper's Ferry. Besides, as I have already said, following up the Potomac would have been the surest way possible of evading McClellan, (as Stuart evaded Lee in the Gettysburg campaign), while our orders were imperative, as follows: "Arrived at Sharpsburg, they will seek to join General McClellan and report to him for duty." Of course this affected the officers, and not

the rank and file, but these officers were those who, with their guide, were leading us and the men were told it also; and we were all for McClellan, as an alternative.

The orders to the commanding officer were, also, "to cross the Potomac on the pontoon, take the road to Sharpsburg, and cut his way through the enemy's lines."

Of course there was a good reason why we did not continue on to Hagerstown, for it had been occupied that day in overwhelming force, and was still occupied by infantry and artillery; but we knew nothing at all of this while we were in Sharpsburg, and could not possibly have learned it until we approached Jones's Cross-roads, eight miles on the way to Hagerstown itself, which so occurred. But there was no reason at all, when we left Sharpsburg for taking a road which led away from McClellan, and directly toward the Potomac and A. P. Hill and Stonewall Jackson, about both of whom we were quite well informed at the time and before we started. The picket we encountered at the eastern end of Sharpsburg obviously came from Lee's army, and the last we knew of his army was when it started west from Frederick toward Boonsborough, and we had sense enough to know that there were plenty of rebels over there. Also, we had ocular demonstrations that there were plenty up along the Potomac, on the Virginia side at least, and which had crossed from the direction of Frederick and Boonsborough, but we had nothing at all to show us that there were any rebels north of us. Furthermore, no one in Sharpsburg knew half as much about the locations of the rebels as we ourselves did. So that ordinary horse-sense, not to speak of orders or roads, would have sent us straight up between these two opposing factors, towards Pennsylvania. That was the only living chance in sight, the only rent in the clouds. We couldn't go back; we couldn't go east; we couldn't go west or south, and we couldn't stay where we were at Sharpsburg. Anyone could understand that behind that picket post was something worth picketing, and that it was heading our way. And so came about another of those strange coincidences which we continued to encounter, from the moment we crossed pontoon at Harper's Ferry, after dark on Sunday, until we

entered Pennsylvania in broad daylight the next day, reaching Greencastle at 9:00 A. M.

The first of these coincidences was the fact that, while McLaws' division occupied Pleasant Valley, east of Maryland Heights, and confronting Franklin who drove him down nearly to the Potomac on Sunday, and with Anderson's division occupying Solomon's Gap and the western slope of Maryland Heights with two brigades along the slopes and woods on the western side of Maryland Heights, alongside and through which the Sharpsburg mountain road from Harper's Ferry passes, a threatened advance by Gouch and Franklin's movements down Pleasant Valley on the evening of Sunday, caused the Confederate troops on the western slopes of Maryland Heights, excepting their pickets, to be withdrawn for position in or facing Pleasant Valley, so as to be on Franklin's flank, and this occurred just before the cavalry left Harper's Ferry, or even while it was passing the Potomac. In consequence, the strong infantry force which we would have encountered in the woods, and in the dark, was gone, leaving only their smouldering fires and pickets behind. With these tremendous mountain roads, in stone-darkness, and in the woods, riding at a gallop as we did, during which no one could see another as the files became scattered out, it was certainly a coincidence of the highest value to the cavalry. I saw rockets ascending from the top of Maryland Heights at frequent intervals on our right for a half hour, but they were not understood, or else they were too late. (See Confederate Reports, in Vol. XIX, W. R.)

The coincidence at Sharpsburg was that by running into Lee's picket post, we saved ourselves from running into Lee's whole army, as we would have done had we taken to a by-road, or to the open fields as we did later in the night, on our route from Sharpsburg towards Hagerstown.

Now, regarding the matter of the road we took from Sharpsburg, and that it was not the Mercersville road but the Hagerstown pike, I have conclusive evidence from Confederate reports made at the time, and published in the War Records Vol. XIX

The best War Records maps to consult (for it requires two to show the complete route from Sharpsburg) one plate XXVIII from Sharpsburg up to the Bakersville crossing of the road from Keedysville across the Hagerstown pike, and plate XLII, (Gettysburg Campaign), for the country from the Bakersville crossing of same road (a little east of Bakersville) over the same pike, up to the Pennsylvania line. The latter is a splendid map of the country involved, and illustrates the "Falling Waters" part of the Gettysburg Campaign.

As I have always known, and stated, regarding this part of the cavalry route, when we halted and were bunched up in the main street of Sharpsburg, the street was crammed full for two blocks back from the Confederate picket, while we heard the firing going on in front at the church. As I have stated, my command was in the rear guard. The Confederates were obviously as much puzzled as we were, and neither side advanced nor retired. They were endeavoring to ascertain what the force was, and of which army was there in front of them. Meanwhile, after a few minutes, the head of our column turned off to the left, and as our turn came, in the rear we followed. It was an utter impossibility for the head of the column to turn back through the jam, in the dark, to reach the Mercersville country road and we just filtered off to the left, as troops are accustomed to do. Of course they could have gone up one block, (but not if the picket was on the Hagerstown pike), and then turned from the Hagerstown pike along a side street back to the Mercersville road, four blocks to the south, and then made a third turn up that road, but I know they did not do so, for we turned to the left, and kept straight on up the Hagerstown pike, and at right angles to our former course. Heaven knows, I had traveled it often enough by night and day.

We rode at a sharp trot along this wide, stone turnpike, directly north for miles, passing houses and villages dimly seen in the darkness. As I had gone over this road so often, from boyhood, I was naturally interested, and took note of the various objects as we passed along. I said, well, this means Hagerstown, and many of my comrades asked me questions about it, as we rode along, when closed up or when we struck a walk.

As we rode for about an hour, I concluded that we must be near Jones's Cross-road, which led from Boonsborough, where my two brothers lived, to Williamsport and near which my uncle was then living. This was six or eight miles from Sharpsburg, and just above Tilghmantown, a "string town," like the one I was born in, in Pennsylvania.

Just above this on the right side of the pike lived a doctor, Dr. Maddox, in a beautiful cottage-house, standing back from the pike and covered, its porch particularly, with vines and flowers. The gate was in a low picket fence in front of the middle of the house, where there was the entrance door. I knew the doctor's house as soon as I saw it.

Here the head of the column suddenly halted, and the cavalry bunched up again, filling the pike as had been the case in Sharpsburg. Boylike, I pushed up ahead to see what the trouble was, as there was no command that I had heard to halt. When near the house I inquired of one of the officers on his horse near by as to the cause of the stop. He said that a doctor lived there who was a strong Union man and with whom the guide was acquainted; that the guide and the officer in command had gone in to learn what he had heard as to what might be ahead of us. After a little while one of the officers came out and said that there were three divisions of the Rebel army in Hagerstown, with trains and artillery and that Longstreet was in command.

This information was strictly accurate during that forenoon but Lee, meanwhile, had ordered Longstreet and Hood and part of Jones's division, by the Boonsborough pike, back to help D. M. Hill at South Mountain, so that only four regiments of Benning's brigade, and a small brigade for the heavy reserve ammunition train guard were left at Hagerstown. These latter, with the trains, had already started on their way towards the ford at Williamsport, by the Hagerstown and Williamsport turnpike, while Benning's brigade was under marching orders to move down the Hagerstown and Sharpsburg pike, to the latter place, and probably had already started.

This latter information, of course, was obtained later. All we got from the doctor was the presence of Longstreet with the three divisions at Hagerstown.

It was obviously impossible to go further up the pike towards Hagerstown. Like the old colored brother to whom his pastor offered only two roads, "one which leads to perdition, and de odder right straight down to hell," we concluded to "take to de woods."

At the suggestion of the guide or guides, the "bars" in the fence alongside the pike, on the opposite side from the doctor's residence and leading into the fields to the west, about one hundred yards south of the doctor's residence, were let down, the head of the column was buckled back, and the whole column filed into the open fields beyond. There were several old mills on Marsh creek, across those fields, Cross's, Fair Play, and another. I knew some who were employed in one of these. There was also a small run entering Marsh creek, along which was a broken fence, before reaching the run, and lots of brambles grew along the half worn out worm-fence. The run had cut its way leaving muddy banks two or three feet high. It bordered a large corn field beyond through which we passed after crossing the run. It was then roasting ear time.

Crossing this run was slow and toilsome work at night, even at a lope and before one-third of the column was across it became a quagmire. The command strung out into single file, with considerable intervals, much as on the mountain road from Harper's Ferry. I was in the rear guard and when I entered the corn field I was surprised to see it all broken down as though a herd of hogs or cattle had been it. But what surprised me still more was to see little fires smouldering or burning here or there among the corn.

Suddenly some one who was lying on the ground spoke up, and drawled out sleepily: "Say, what regiment air you?" I immediately answered, thinking it was the safest side, to claim just then: "Fourteenth Alabama Cavalry." Ye'r a d—d liar," which I certainly was, and my interlocutor, thinking it was a part of the chaff passing current among soldiers everywhere, rolled over, and went to sleep again, I suppose.

We were going at a quick trot and those in advance far out-distanced us, by reason of the slough, so that when I reached some farm buildings, which as I could see had a wooded hill, beyond its sky line and which I well knew. I rode straight

across the by-road, which made a short cut by Cross's mill, from the Hagerstown to the Williamsport pike. I passed through what appeared to be an open passage, probably through an open barn yard gate, and on up the hill through the open woods. I then suddenly brought up against a worm fence, with open fields beyond, and sloping rapidly down. I listened but not a sight nor a sound. I knew I had missed the road and that the cavalry must be somewhere to the right and front, if we were heading north, as I knew we were.

I rode up and tried a fence stake and it seemed rather old and wobbly, so I backed my horse off, (what a horse that was!) and drove straight at the middle of the panel. The top rails flew off like rockets, and over he went. Then I started down the hill through the fields, stopping every few moments to listen, and after having gone perhaps a half-mile, I heard that swishing murmur which marks the passage of a considerable body of cavalry. My horse pricked up his ears, and I rode down towards it, went nearly head-long over an invisible road bank, and landed squarely into our own column, just alongside where the road strikes Marsh creek. Glad! Well I should say so.

This road enters the Boonsborough—Williamsport road nearly opposite the College of St. James, which is about a half-mile to the north.

We then followed the Williamsport road about a mile to the west, and turned off into a road running north and north-west for about two miles, where it enters the Hagerstown and Williamsport pike, a little more than a mile and a half from Williamsport, which town we thus cleared by this cross-road.

The road, before striking the Hagerstown and Williamsport pike makes a sharp ascent to a long ridge, along which the latter turnpike runs, being cut down below grade so as to evade the summit of the hills. The road we were traveling along does not directly cross the turnpike, but its continuation is a couple of hundred yards to the left, whence it extends north towards Pennsylvania. Across this angle, which is swampy, runs a creek, which enters the Conococheague above Williamsport. Where we reached the turnpike the margin was lined with trees and behind these was an open wood, through which we had

already passed. From the crest at the pike, had it been daylight as it was before we got through with the Confederate train, the turnpike towards Hagerstown would have appeared straight, broad, firm and unobstructed for miles, but it was now covered with dust from the dry weather, and the dust of the road-bed.

Our operations against Longstreet's ammunition train, and its guards, occurred at this point, which I will leave for the present to mention some other of the singular coincidences of this remarkable expedition. The first was the withdrawal of the Confederate troops from the Harper's Ferry and Sharpsburg Road on the western slopes of Maryland Heights just as we were moving out from Harper's Ferry across the pontoon bridge to follow this very road, as there was no other. The second being the night encounter with Lee's advance picket post, at the eastern end of Sharpsburg, which diverted our line of march to the left at a right angle, up the Hagerstown pike and so threw into our hands Longstreet's train and many prisoners. The third coincidence was the information received before reaching Jones's Cross-roads, which was erroneous at the time, but correct only a few hours previously, and which compelled us to leave the turnpike and take to the fields without returning to the pike at all. Had it not been for this deflection of our route, we would, long before reaching Hagerstown have marched directly into Benning's brigade of four regiments of infantry, marching towards us down the same pike from Hagerstown.

In the night, and in the confusion attending such an attack, there would have been material enough for a comic opera, but the result would probably not have been comic to us, as we would have had no room or opportunity to maneuver cavalry, while part of the enemy's infantry could have formed across the road, and the remainder used the fence corners. This was Toombs's brigade, then under command of Colonel Benning, from whose report (Volume II, Part 1, War Records, p. 161), I extract the following: "On the morning of the 15th I was ordered by General Toombs to place the brigade across the road leading from Sharpsburg to Rohrersville at the Stone Bridge over Antietam creek," (the Burnside bridge).

This shows that he had reached the lower Antietam by the morning of September 15th.

In General Toombs's report, (Volume XIX, Part 1, War Records, p. 888) he says: "About 10:00 o'clock on Sunday night, September 14th, I received orders to march immediately to Sharpsburg, which I did and reached there before daylight on Monday morning."

Benning says in his report that he had with him the 2d, 15th, 17th, and 20th Georgia regiments of infantry.

Our column left the Hagerstown pike about 1:30 or 2:00 o'clock on the morning of September 15th, and Benning reached the Burnside bridge, six or eight miles distant from Jones's Cross-roads before day light, so that in an hour more we must have met in the opera-bouffe encounter which I have described, a head-on collision at night, without scouts, skirmishers, or anything else ahead, on either side, as each believed that they were marching on their own ground.

So we opened the way for Benning, and then a fourth coincidence occurred, which General W. N. Pendleton, Chief of Artillery in Lee's army, narrates in his report, (War Records, Volume XIX, Part 1, pp. 829-830.)

"At midnight (September 14th-15th) I was again summoned to your (General R. E. Lee's) headquarters, and directed to send Colonel S. D. Lee, with his battalion, on the road to Centerville (Keedysville, where Lee then was), and to take the residue of my command by the shortest route to Williamsport and across the Potomac, and then to enter upon the duty of guarding the fords of the river."

This command and the other troops under Pendleton, began this march from Boonsborough, as directed.

"By sunrise, Monday, 15th, we had reached the intersection of the Hagerstown-Sharpsburg, and Boonsborough-Williamsport roads, and there received reliable intelligence of a large cavalry force of the enemy not far ahead of us. I immediately posted guns to the front and on the flank; sent messengers to General Toombs, understood to be at Sharpsburg, for a regiment or two of infantry; set to work collecting a band of armed stragglers, and sent scouts to the front. These latter soon returned and reported the road clear for some two miles.

I therefore determined to advance cautiously, without waiting for infantry, in order to protect the large wagon train proceeding by the Hagerstown road through Williamsport. The cavalry, which consisted of three regiments, escaped from Harper's Ferry, crossed our road perhaps less than an hour ahead of us. We thus narrowly missed a rather strange encounter. My purpose was, of course, if we met, to attempt the destruction of those retiring invaders."

He does not state, in his report at what time he reached the Potomac, or what measures he took to pursue the cavalry, but says: "Having crossed the Williamsport Ford, I assigned to Colonel Brown its defense and that of another a mile or more lower down, and proceeded with the remaining battalion (Major Nelson's) to the neighborhood of Shepherdstown. By 10:00 o'clock on the morning of the 15th the guns were here in position on the heights overlooking the ford, a mile below the town, and the passage was thenceforth assiduously guarded."

The distance from Jones's Cross-roads (which is the point described in Pendleton's report) to the opposite side of the river at Williamsport was six and one-half miles.

The distance from Jones's Cross-roads to the Hagerstown and Williamsport pike at the point where the cavalry met and captured Longstreet's train and escort, was six miles. The sun, on September 15th, rose a few minutes before 6:00 A. M., and the cavalry attacked the train just before daylight. Colonel Voss, the commanding officer, says, in his unofficial report, (which see later): "The dawn of early morning was just approaching when we were on the point of crossing the turn-pike."

General Pendleton's report establishes the fact that the cavalry came up from Sharpsburg by the Hagerstown pike, and not by the Mercerville road, the nearest branch of which was three miles to the west of Jones's Cross-roads.

It also establishes the fact that there were armed stragglers there in sufficient numbers to enable him to "collect a band of them." These were those we passed through in the cornfield; there could have been no others.

These stragglers were not from Benning's brigade which had, he says, already passed down towards Sharpsburg. They

had been lying at Hagerstown since September 11th, according to Longstreet's report, General Toombs saying "that when Longstreet was within four or five miles of Hagerstown, he was ordered to send Benning's brigade to Hagerstown. On Saturday night, at Hagerstown, he was ordered to hold his command in readiness to march at daylight, but received no further orders until about 10:00 o'clock on Sunday night, September 14th."

The regiments of Benning's brigade thus had two days or more of solid rest, in the city of Hagerstown, where food was abundant, and where Longstreet's supply trains also were. It was a cool night-march of six and one-half miles from Hagerstown to Jones's Cross-roads, and they must have thus passed by the stragglers lying in the cornfield which we passed through, and which was nearly a mile west of the Hagerstown pike, where we left it to cross the fields.

These were not stragglers in the proper sense of the term; they were "bummers," similar those in Sherman's army, where I afterwards served. They were "coffee boilers," for they straggled ahead and not behind to find something to eat. After their battle at and march from South Mountain, they were following up, and scattering along from Boonsborough and beyond till they found green corn enough to eat, not yet confiscated by others. They then lay down, almost tired to death, to sleep where they ate. And these fires were not regularly "bivouac fires," but "roasting-ear fires" as I knew of old.

After our odyssey through them they doubtless cogitated and wandered back to the region around Jones's Cross-roads where they gave General Pendleton the information contained in his report, and where he gathered them into some sort of a band "for protection" against us desperadoes. Certainly Benning got no information from any of them, for he only heard of the cavalry next morning, when already at the Burnside bridge.

Of course no theory could be built on such premises if they were not corroborated by my own knowledge. Colonel Arno Voss, who was the commander of the cavalry expedition, in an unofficial narrative made from memory long afterwards, to my comrade, Sergeant S. P. Pettengill, and published in his book, "The College Cavaliers," 1883, says of our route through

the fields: "By this time a bright starlight had succeeded the impenetrable gloom of the early night, enabling us to discern surrounding objects more distinctly. We were also guided in choosing our path by the faint glimmer of *their* bivouac fires." He certainly saw what I saw, but he did not get his information from me, for I never saw or knew him afterwards. He then describes our dash through "the astonished grey-coats," describing some "cutting down" of all opposition, which I did not witness, and I was in the rear guard, and was fully occupied with "cutting ahead," as fast as my charger would carry me.

Now, consider this odd situation. We marched up nearly to Jones's Cross-roads, and then left the pike to cross the fields to the west and northwest, and we stirred up, on the way, the Confederate stragglers in the corn. Almost immediately after, Benning's Confederate brigade came marching down from Hagerstown, ignorant of us, and we equally so of them. Almost immediately after that, General Pendleton's artillery came marching up the road from Boonsborough to Williamsport, and when he reached Jones's Cross-roads, he was ignorant of both Benning and us, and we were equally ignorant of him and Benning.

By this time the Confederate stragglers, far more bewildered than any of us, and miles away from where they belonged, had come upon the scene and told their story to Pendleton. Now for the first time anyone was able to piece up this succession of events into any possible shape. At the same time, right across our pathway ahead was lumbering along Longstreet's ammunition train of more than eighty heavily loaded wagons and their drivers, and a brigade of train guards, of which we were entirely ignorant, just as Pendleton was ignorant of where we were wandering, and what we were trying to do, and we equally ignorant that he was pursuing us with hostile intentions. Then picture all this occurring during the darkness of night.

But another complication in the nature of a coincidence with far reaching effects ensued from the crossing of the Hagerstown—Sharpsburg turnpike by General Pendleton, and the reports of the stragglers there encountered. Immediately after the passage of our cavalry which must, by their deflection,

inevitably cross the road on which Longstreet's immense train was passing from Hagerstown to Williamsport; for Pendleton knew this at Lee's headquarters, which he had just left to go to Williamsport, (where the train also was to go); and the fords of the Potomac, which both were to cross, were those which he was to guard. But he did not know just where the train might be, along their road, not where the cavalry might be, going north without any road, except that it was to pass somewhere between Hagerstown and Williamsport, and which force he undertook to pursue "cautiously," and endeavor to engage and destroy as he reported.

Meantime Benning, with Toombs's brigade, was marching down to Sharpsburg, which General Toombs's in his report, says, reached Sharpsburg before daylight on Monday morning, September 15th.

General Pendleton in his report, says that on arriving at Jones's Cross-roads, and learning the situation from the "stragglers," he immediately posted them to the front and on the flank, and sent messengers to General Toombs, understood to be at Sharpsburg, for a regiment or two of infantry.

Turning now to the report of Colonel H. L. Benning, commanding Toombs's brigade, (Volume LI, Part 1, p. 161, War Records), we will at once see the momentous effects of the cavalry movement toward Longstreet's train, so many miles away.

"On the morning of the 15th I was ordered by General Toombs to place the brigade across the road leading from Sharpsburg to Rohrer'sville at the Stone bridge over Antietam creek, and to defend the bridge. Hardly had I received this order and commenced to execute it when I received another order from him to detach two regiments of the brigade and send them towards Williamsport in pursuit of the enemy's cavalry, which the night before had escaped from Harper's Ferry and gone toward Williamsport to the peril of our wagon train, proceeding to that place from Hagerstown. Accordingly, I detached the Fifteenth and Seventeenth Georgia and sent them off under Colonel Millican on this duty. This left me for the defense of the bridge only two small regiments, the Second Georgia, under Lieutenant Colonel Holmes, and the Twentieth Georgia,

under Colonel John B. Cumming. With these two regiments I proceeded to the bridge and there put them in position as ordered."

"Shortly before the fight at the bridge terminated" (about 1:00 P. M., Wednesday, September 17th) "the Fifteenth and Seventeenth by forced marches had returned from Williamsport by way of Shepherdstown, and when that fight terminated they were in line of battle on the right and 400 or 500 yards in advance of the general line of battle, which was along the summit of the ascent from Antietam creek." Here they remained until about 4:00 P. M., September 17th. It is obvious that, if Benning's brigade reached Sharpsburg before daylight, and was ordered to the Burnside bridge, and before the order was executed, he was directed to detach two of his regiments, and that this was in consequence of the messengers sent by General Pendleton from Jones's Cross-roads, who had to march about seven miles to reach Benning, then Pendleton must have reached Jones's Cross-roads much earlier than sunrise, which is also established by his statement that the cavalry had passed "perhaps less than an hour ahead of us." We crossed not later than 2:30 A. M.

This depletion on a wild goose chase, "left confronting Burnside's whole 9th corps and the Kanawha division, together with all his artillery, light and heavy, during the whole forenoon of the battle of Antietam, and part of the afternoon, not more than 500 Confederate infantry, besides one battery, Eubank's, until 9:00 A. M., and Richardson's afterwards, the latter at a long distance in the rear. Benning's report concludes with what would have happened had General Burnside crossed the Antietam after McClellan's right front attack had drawn everything which he could spare over to the latter's left, while Burnside was so often and so urgently ordered by McClellan to do at once, which he did not do during all the forenoon.

Says Colonel Benning, "If General Burnside's corps had once got through the long gap in our line it would have been in the rear of our whole army, and that, anybody can see would have been disastrous."

Respecting the number of Confederate troops opposing the Ninth corps and the Kanawha division, with their batteries, I

cite the following confirmation from a War Department letter signed by General E. A. Carman, of May 13th, 1905:

"Heysinger is entirely correct in saying that the bridge was defended by less than 500 Georgians and some 100 South Carolinians, but there were several Confederate batteries that dropped their shell upon the Union assailing columns, and from these the 51st Pennsylvania and 51st New York suffered."

The only Confederate batteries referred to in any reports, and by position the only ones within reach, were Richardson's, which remained, and Eubank's, which later was ordered away about 9:00 o'clock in the forenoon.

Says Colonel Benning in his report (Volume LI, Part 1, War Records): "The next morning early (that of the 17th) the skirmishing was renewed. It continued constantly growing heavier on the part of the enemy, till about 9:00 o'clock, when our skirmishers were driven in. At about 8:00 o'clock Captain Eubank discovered a large body of the enemy opposite to him in a wood within range of his guns. He opened fire on them, and drove them in confusion from the wood, and with loss, to judge from the movement of the ambulances. Not long after he had finished this work it was ordered away."

Says General Toombs in his report (Volume XIX, Part 1, War Records): "Finding that the battery belonging to my brigade (Captain Richardson's) was placed too far in my rear to render me efficient service in defending the passage at the bridge, I applied to General Longstreet for another battery. He ordered Captain Eubank to report to me, who was placed in my rear about half-way between the river and Captain Richardson's battery, and rendered efficient service as long as it remained in that position."

"Not being able to get any reinforcements for the defense of these two fords, and seeing that the enemy was moving upon them to cross, * * * and Eubank's battery having been withdrawn to the rear nearly two hours before, I deemed it my duty to withdraw my command."

Colonel Benning continues his report: "Thus the two regiments were left at the bridge without any artillery supports whatever. The general line of battle of our army was nearly,

if not quite, three-quarters of a mile in their rear, and not a soldier was between them and that line."

So it will be seen that the detachment of one-half Benning's whole force, directly due to the cavalry movement toward Longstreet's wagon train, actually opened the door to Burnside's whole army corps, had he chosen, during the whole forenoon, and until 1:00 o'clock in the afternoon, to wade across or walk across the creek.

Regarding the route pursued by the cavalry, General Stuart, in his report, (Volume XIX, Part 1, p. 818), says that he took General McLaws to the Maryland Heights before the surrender of Harper's Ferry, and urged the "holding of the road from Harper's Ferry toward Sharpsburg, at the Kennedy farm, as he had been there during the John Brown raid, before the war;" and, because this road was not thus held, the entire cavalry force at Harper's Ferry, "escaped during the night by that very road, and inflicted serious damage on General Longstreet's train in the course of their flight." He might have added that it was very serious damage, for we took the whole train, bag, baggage, ammunition, and prisoners.

It may be of interest to note that in Volume II, "Battles and Leaders, Century Co., 1887," on page 665, is a capital illustration of the abandoned Lutheran church, at the eastern entrance to Sharpsburg, where Lee's picket was stationed, and which we encountered. Also, on page 606, is a capital map of Harper's Ferry and its surroundings, showing the start of the cavalry across the pontoon, then to the left along the canal, and then perpendicularly up, on the map, the mountainous road which, later, by a left turn leads to the mouth of the Antietam creek. Anderson's troops lay between that road and Maryland Heights, on the lower wooded slopes, opposite the "Stone fort" on the summit. The map will also show that, although the map shows no part of Pleasant Valley, which lies to the east of the mountains, troops coming down Pleasant Valley towards the Potomac would be entirely out of reach of Harper's Ferry while they would be exposed, without power to reply, to a plunging fire, for three miles from the troops and batteries on Maryland and Loudon Heights. The only possible route to Harper's Ferry is along the river, where it is marked

"Baltimore & Ohio R. R." and which is only wide enough, and that in part blasted out, with a ledge twenty feet high for the canal, the railroad and the turnpike, probably sixty feet wide in all.

I will now return to the position of the cavalry column where it reached the summit of the ridge along which ran the Hagerstown and Williamsport turnpike, the route by which Longstreet's ammunition train was slowly approaching, in seeming security from Hagerstown with most of the train guard in the rear.

By consulting the excellent map, Plate XLII, "Atlas to War Records," which illustrates the topography of the "Falling Waters" region (Gettysburg Campaign), it will be easy to understand precisely what occurred here.

Passing through the bit of open timber south of the pike, before reaching the latter, the pike runs at right angles to the left of our approach for one-eighth of a mile on its straight course to Williamsport, distant about one and a half miles to the ford across the river. But for one-eighth of a mile the road along which we had been advancing follows the turnpike, and then continues north towards Pennsylvania, so that we travelled north to the pike, then at a right angle southwest along the pike for one-eighth of a mile, and then north again, to the Pennsylvania line and Greencastle. The turnpike from Hagerstown runs southwest to Williamsport. This deflection left the space between the Greencastle road and the pike a sort of acute angle, across which ran a sluggish, swampy creek, which crossed the road a quarter of a mile beyond the pike. So that any troops on the pike, by running across this angle would encounter any troops passing north on the Greencastle road, at much less distance than by following the pike, and then the road around. The ground where the creek ran was swampy in the fields, and low on the road. The turnpike also ran down hill from the summit where we attacked and the Greencastle road continued the descent until the creek was passed. This latter road was rough, rocky and irregular, and with water at the bottom of the descent. Then it rose again sharply, and continued on high ground up to the Pennsylvania line, but with a good many kinks and turns.

As we sat on our horses (no one ever dismounted that I know of from the time we left Harper's Ferry until we reached Greencastle, a distance of nearly or quite fifty miles), the day was just breaking. After waiting for a few minutes a dull rumbling sound was heard up the pike toward the right, and a little while afterwards a dense yellow cloud became visible. It seemed enormous, as it approached. Soon it was noised among us that it was a long wagon train or else a large force of the enemy moving from Hagerstown. During this time arrangements were being made for our attack, and, to my mind, they were admirable. I still look back to them with admiration, after several more years experience in the cavalry and infantry.

They were undoubtedly due to the skill and experience of Colonel B. F. Davis, commanding the 8th New York Cavalry, who was then a captain in the regular army, afterwards brevetted Major for this night's work; a West Point graduate, and one beloved in the old army as "Old Grimes" Davis. He was killed June 9, 1863, at Beverly Ford, (Brandy Station), while gallantly leading his brigade, the 1st Brigade, 1st Division, Pleasanton's cavalry corps, Army of the Potomac.

One regiment of cavalry was deployed along and back from the south side of the turnpike, concealed, as yet, by the trees and bushes. I presume that this was Colonel Davis's own regiment, the 8th New York. In rear of this regiment with its line of battle facing the turnpike, another regiment, the 12th Illinois, was formed in column of fours, facing the left, and the Maryland and Rhode Island cavalry behind this formation, and principally to the right. The purpose was to allow as much of the train to pass as was possible, then to make a frontal attack on the flanks of the passing wagons, drive off the train guard, and attack those in rear of the train. The column in fours was then to seize the wagons one by one, give to each wagon a special half-dozen cavalymen, and send it headlong down the pike to the Greencastle road, and then, at right angles up that road to Pennsylvania. The remaining cavalry was to take care of the infantry guard, and protect the train, with its new owners, from pursuit or attack.

These movements were carried out to the letter. The train was struck from the south while passing us by the flank, with the Confederate infantrymen sauntering alongside the wagons. Our troops were rushed across between them, many captured, and piled into the wagons, and the remainder driven down the hill, and pursued through the thickets toward the swampy creek. While the wagons one by one were seized by the cavalymen appointed for that purpose, two men galloping alongside the drivers, two alongside the mules, and two behind, all with arms and sabers drawn, and away they went on a dead run, belaboring the teams with the flat of their sabers, and urging the negro teamsters to put on all the steam possible.

As they turned up the Greencastle road, passing the opposite side of the triangle, they were in full view, and it was a sight to see. The time required to start the wagons, after loading in what human timber they could hold, lengthened out the line so that the wagons were galloping about forty or fifty yards apart; all hands yelling and banging the brutes, the darky drivers scared green, and urging their teams along with a pistol pointed at each side. The officer stationed where the roads branched gave quick directions, and pointed each team up the Pennsylvania road, many with darkeys or others astride the mules, of which we only caught glances as we were busy with own work. At length, for broad daylight had long been with us, the last wagon was gone, leaving not a scrap, except what of the brigade train guard that had fled out of sight. Then we followed in behind, to close up the last of the departing train.

The fugitive Confederates, seeing our column all turn up the Pennsylvania road, at right angles north, instead of south to Williamsport, seemed to have recovered their senses and began swarming across that triangle towards the small creek, and firing rapidly, with a range of perhaps two hundred yards; but everything was in rapid motion, and they were mired among the creeks and the swamps, and their firing didn't scare us a bit as we trooped along.

They did not cross the creek, as we could have charged them there over good ground, and we were soon beyond their range and safe from infantry pursuit.

I have been asked why they did not attack more furiously while we were tearing the train to pieces. I can only say that it was not yet full daylight when the attack began, and everything was involved in clouds of yellow dust which hung in masses, there being no wind whatever. Doubtless, too, they had no idea who we were, where we came from, or what was behind. Later on, they could not have organized, except in the open where the cavalry could have broken them up before they had a chance to form. As for firing on the wagons of their train, all the vacant room in these wagons was full of Confederate wounded and otherwise disabled, (some from the South Mountain battlefield) besides the prisoners which we had put in afterwards, as well as their regular negro teamsters, of which there were more than two hundred. It was said, when we reached our destination, that a wounded Confederate brigadier had died on the way on account of the rough riding.

The riding certainly was rough enough, so fast and so rough that sixteen of the wagons broke down entirely, and were blown up with their own powder and left behind. I passed one of these in particular which left a cavity in the road big enough to contain the whole wagon. In fact, as we were the rear guard we passed them all. The wagons were nearly all of the old Conestoga type, with six mules each, and all filled with artillery and small arm ammunition, except what forage could be piled in on top, for the teams. I know that when we reached Greencastle, there was nothing edible to be found in the wagons, and the negro drivers, as well as the rest of us, had to forage for grub. I have often thought that this exploit, in my opinion, due almost entirely to quick genius and ability of "Grimes" Davis, deserved a far higher recognition than it every received. He was a splendid officer and, had opportunity afforded, would have left a name high among our cavalry generals.

The wagon master of this train was a Pennsylvanian, from near where I was born, whom I knew, but did not expose, and who was among the prisoners. When we sent them down to Chambersburg with the captured train, while we turned back to Antietam, they all knew him there and undertook to lynch him, but our officer in charge told them that if they did he would "burn their old town," which McCausland afterwards did, to the great improvement of Chambersburg.

After passing the Maryland and Pennsylvania line we had a first rate road all the way up to Greencastle, but it was so dusty, and we were so begrimed with dust that we actually looked more like monkeys than human beings. I think that I was the dustiest and dirtiest that morning that ever I was in my life, far more so than any Confederate I ever saw. We were indeed taken for Confederates, with our big train, and no wonder and all believed the invasion of Pennsylvania had indeed begun. What a scurrying there was; United States soldiers were quite invisible to us. The good women of Greencastle, learning who we actually were, and that we had nothing to eat; nothing to cook anything with; and that our horses had nothing, came out of their houses like angels of mercy, with great slices of Pennsylvania loaves of bread, thickly spread with butter and apple butter, and there we sat in long rows along the curb stones eating, while our horses, we holding their bridles in our hands, munched their forage before us.

A member of the 15th Pennsylvania cavalry, (a detachment of which was then in Greencastle), C. B. Newton, of Company "F," of that organization, writing, long afterwards, from India, in the History of that Regiment, 1906, describes our entrance into Greencastle as follows:

"One of my stirring memories of that journey down the Cumberland Valley is a scene worth remembering. When General Miles surrendered to the rebels at Harper's Ferry, a gallant band of Union cavalry refused to yield, and cut their way out. Journeying northward, they came across a long wagon train loaded with supplies for Longstreet's corps of Lee's army. The train consisting, so far as I recollect, of some seventy wagons they captured with its escort, and brought them along. I saw the dusty procession marching into Greencastle, and had the honor of being placed, loaded revolver in hand, on the hind step of an omnibus, to stand guard over the rebel prisoners of that escort, whom I conducted to the town jail. I felt almost as proud as if I had captured that wagon train myself."

Subsequently, near Vicksburg, Miss., I heard a regular army officer, alongside a fire of fence rails, say that he never felt so proud of the American army as one morning when, in a

little town in Pennsylvania, where he had been sent on some special duty, in September, 1862, he saw a long column of the dustiest cavalry he ever saw, suddenly emerge from the rebel army, bringing with it Longstreet's whole ammunition train, and hundreds of prisoners." When I told him that I was one of that cavalry, he came over to my fire and said, "Young man, I want to take your hand." He was killed soon afterwards,

General Longstreet, writing to my comrade, Sergeant Pettengill, from Gainesville, Georgia, April 6, 1880, says:

"Dear Sir: The service you refer to was very creditable, and gave us much inconvenience. The command, being in retreat, and more or less apprehensive for its own safety, seems to have exercised more than usual discretion and courage.

I am very truly yours,

JAMES LONGSTREET."

After the close of the war I became well acquainted with General John G. Walker, commanding his own division at Antietam on the Confederate left and in contact with Jackson, Hood and Longstreet. He told me that we had gotten two-thirds of all of Longstreet's ammunition and that the loss of this had caused serious injury to them, as its loss could not be supplied. In fact, he used much stronger language than I have given, and thought our night's move was one of the most extraordinary that he had ever heard. He said it was the subject of much discussion among the Confederate officers, and led to unfavorable comparisons with some of the wild-goose "rides-around" of Stuart, until they culminated at Gettysburg, where he rode around his own army, and with disastrous consequences.

Colonel Arno Voss, of the 12th Illinois cavalry, who was in command of the expedition, sent the following telegram to General Halleck, at Washington, immediately after arriving at Greencastle: "Harper's Ferry is from all sides invested by a force estimated at 30,000. By order of Colonel Miles, I left it last evening with the cavalry, about 1,500 strong, to cut my way through the enemy's lines. I succeeded in reaching this place about 9:00 this morning, having passed the enemy's lines about three miles northward of Williamsport, and captur-

ing a train of over sixty wagons, loaded with ammunition and 675 prisoners."

General McClellan telegraphed to General Halleck, September 23, 1862: "The conspicuous conduct of Captain B. F. Davis, 1st cavalry, in the management of the withdrawal of the cavalry from Harper's Ferry at the surrender of that place, merits the special notice of the Government. I recommend him for the brevet of major."

Brigadier General Julius White, second in command at Harper's Ferry, and who succeeded Colonel Miles when the latter was mortally wounded, writing in "Battles and Leaders," Vol. II, p. 613, says:

"During the evening of the 13th a consultation took place between the writer, then temporarily in command of the cavalry Colonel B. F. Davis of the 8th New York, and Lieut.-Col. Hasbrouck Davis of the 12th Illinois, at which it was agreed that the mounted force could be of little use in the defense; that the horses and equipments would be of great value to the enemy if captured, and that an attempt to reach McClellan, ought therefore to be made."

Colonel Miles issued the order next day, directing the cavalry to move out on the evening of the 14th, under the general command of the senior officer, Colonel Arno Voss of the 12th Illinois.

"Under the inspiration and immediate direction of the two Davises, who rode together at the head of the column, the escaping force accomplished the brilliant achievement of reaching the Union lines without the loss of a man, capturing on the way a Confederate ammunition train of 97 wagons and its escort of 600 men."

Regarding the number of wagons captured, my own recollection is very positive that we brought into Greencastle seventy-five, and blew up sixteen which broke down on the way.

Colonel Voss, writing to Sergeant Pettengill, (see his "College Cavaliers"), say that there were eighty-five army wagons, each drawn by six fine mules, "and loaded with ammunitions of war and provisions," and followed by about thirty to forty head of fat young steers.

As I have already said, neither I nor anyone I knew found any provisions, and, as for the steers, the Confederates certainly lost them, but I do not think they reached Pennsylvania.

Regarding General White's statement that we had not lost a man, I am not sure of that. Colonel Voss, in his letter to Sergeant Pettengill, says that "our loss amounted to about one hundred and seventy-eight men reported to me as missing, some of whom afterwards returned to their respective commands."

I know that it would have been impossible for such a column of cavalry, in such a night ride, and with the various contacts with the enemy, to have come into Greencastle with everyone "alive and hearty." There was no roll call, no surgical attendance, no food, no appliances, not even a skillet, no inspection, and none possible, for we were almost immediately ordered down to Jones's Cross-roads, "forming the extreme right flank of McClellan's army at Antietam," after which the command was scattered, and never again reunited.

Examining the unofficial report of Colonel Arno Voss, who, as senior officer, was assigned to general command of the expedition in Colonel Miles's order for its departure, and which is embraced in the work, "The College Cavaliers," by my comrade, Samuel B. Pettengill, published in 1883, twenty-one years after the events described, it seems desirable to point out the necessary errors of topography. These are due to the fact that Colonel Voss had no personal acquaintance with the country or the roads traversed, excepting what he learned in the darkness during this one night ride, and that he wrote his report more than twenty years after the date of the expedition, and without opportunity for consultation with those familiar with the events or with the country. He was never there before, and never after, the battle of Antietam. His report is vivid and truthful as to the facts within his knowledge, and is the only report from any of the commanding officers, guides or scouts, or from any subordinates who had actual knowledge of the topography of the roads. Sergeant Pettengill, my company comrade, with whom I was nearest in companionship, (excepting, perhaps, his cousin Wilder L. Burnap, afterwards a distinguished lawyer of Burlington, Vermont, of the same com-

pany), made no report of the march, although we had been all over it, as far as the mouth of the Antietam creek, only two days before, September 12, 1862.

The official order, under which the expedition was undertaken, which was obtained with much difficulty from the commander of the post and of the troops Colonel Miles, was as follows:

HEADQUARTERS, HARPER'S FERRY,

September 14, 1862.

Special Order No. 120:

The cavalry force at this post, except detached orderlies, will make immediate preparations to leave here at 8:00 o'clock without baggage wagons, ambulances, or led horses, crossing the Potomac over the pontoon bridge, and taking the Sharpsburg road. The senior officer, Colonel Voss, will assume command of the whole, which will form, the right at the Quartermaster's office, the left up Shenandoah street, without noise or loud command, in the following order: Cole's cavalry, 12th Illinois Cavalry, 8th New York Cavalry, 7th Squadron of Rhode Island Cavalry, and 1st Maryland Cavalry. No other instruction can be given to the commander than to force his way through the enemy's line and join our own army.

By order of Colonel Miles,

H. C. REYNOLDS,

Lieutenant and A. A. G."

To this Colonel Voss, in his unofficial report, adds: "Arrived at Sharpsburg, they will seek to join General McClellan and report to him for duty."

Continuing, now, my own narrative, the column was formed as directed in the above Special Order. My command being on the left was extended from the pontoon bridge to Shenandoah street, which lies alongside and nearly on a level with, the Shenandoah river, while the front of the column (the right) extended from the pontoon bridge up the hill to the main part of the town. Near the southern end of the pontoon bridge, in a house with a porch, (probably at one time a tavern), was located a sutler's establishment, under the management of two bright Hebrew sutlers.

Sergeant Pettengill narrates vividly the fact that, in the dark of the approaching night, these two sutlers passed up our line, which was mounted and standing still and silent, and handed to each cavalryman a paper of fine cut tobacco, from baskets which they carried. This was such an unwarranted favor to departing troops that Pettengill could only account for it on the supposition that the rebels would get it anyhow next morning, which was the general opinion, and made us feel grateful to army sutlers, for once. But there was a sequel which I have never seen mentioned by anyone, except by a few of the rear guard at the time, although I can vouch for it from personal knowledge.

Wild as the roads were, almost impassable by daylight, these two thrifty sutlers, hearing only that we were going out by the Sharpsburg road, saw salvation for their most valuable effects in the good will of the departing cavalry. After the passage of Cole's cavalry, the 12th Illinois, and the 8th New York, and before the march of our own—the rear guard—commenced, they slid in with their two sutlers' wagons, into the brief interval and, in the darkness, were either unnoticed, or there was no time to interfere with them. I know there was one of these wagons, and feel very certain that there were two.

Away we went, striking a dead run as soon as we passed the pontoon, up the level bank of the Potomac for a mile, when the Sharpsburg road, such as it was, drove straight up a tremendous mountain climb, so steep that one had to grasp the horse's mane to be safe (at a gallop) from sliding back or shifting his saddle. I did not see these wagons, I saw nothing, for it was stone dark, and the horses took their way by scent, or sound, or instinct. There was no order, and the troops strung out single file as they could, till more level ground was reached far ahead.

Perhaps a mile up this climb, with its ups and downs, the road made a sharp turn around the end of a rocky knob, which I had well known before, and which was walled up on the west to make a road-bed. Over this wall we looked down to the left, into a deep gorge apparently hundreds of feet down the steep slope, with scattered trees and bushes, as far as the eye could penetrate. The wall which sustained the left of the road was about five feet high where it overhung the gorge.

I had noted this only two days before when we passed it on our reconnaissance to the mouth of the Antietam Creek. It seems that when these sutlers' wagons reached this bend, urging forward with all speed, their horses failed to make the turn, and over they went, men, wagons, horses, goods and all.

When I reached this spot I heard a great noise and crashing, shouts and groans, and indescribable sounds, down the gorge, and pulled up to listen. It was certainly a horrible state of affairs far down among the trees, and I could distinguish the groans of horses and men, and the cries of the latter for help. I concluded that some of our men had gone over the precipice. But there was no help, and, after a few moments, I started on again, with renewed speed, as the ground was then better. Those sutlers and their outfit went no farther with us, and I have never heard of them since. Perhaps they are lying there still. There was no more chance for them, when they started, than to climb up the cone of Vesuvius at a gallop in the midst of impenetrable darkness. Their catastrophe could not have occurred more than three or four minutes before I passed as the crashing among the trees was still going on.

To return now to Colonel Voss's unofficial report.

He says that, on starting, he was "here provided with two reliable guides, natives of these parts." I know that there was one, for it was so stated when they entered the doctor's yard, just before we reached Jones's Cross-roads. I have no doubt that there was two, but I never heard who they were, although I am a native of those parts.

The order was to march at 8:00 o'clock. Pettengill says that at the appointed time the march commenced. Colonel Voss says that he formed his column "when night had spread her dark mantle."

It has been said that the march did not commence until about half-past nine. This is not true. The sun had set a few minutes before six, and among these dark mountains night came soon. The head of the column was in motion within a few minutes after eight, and could not have taken more than twenty or thirty minutes for the whole command to clear the bridge. They crossed at a trot, at least the rear did.

Colonel Voss says that Company "D," of the 12th Illinois, by mistake turned to the right, down the Potomac, instead of to the left and encountered a rebel picket, when it turned back in the proper direction. I have no doubt of the fact. I did not see it, not having as yet crossed the river. He says that the column encountered a few rebel pickets on the mountain road, who challenged, "but were quickly rode down or pushed out of the way; their random shots in the darkness did but little damage." This was true for I saw the camp fire, rode right through it, and saw other smouldering fires in the woods, from the road up towards Maryland Heights, and saw the debris left by the scattered pickets. This was before reaching Kennedy farm (the John Brown farm). A good topographical view, taken near the time, from Loudon Heights, shows in the left distance this spot. (See "Battles and Leaders," Vol. II, p. 608, and see also the map on p. 606, same volume.)

The great topographical map prepared by General Michler, by order of General Humphreys, Chief of Staff, in 1867, (Military Maps, Army of the Potomac and Army of the James), will show this whole region with unexampled accuracy and detail.

Colonel Voss says that we reached a strong Confederate outpost "placed at the entrance of the Hagerstown road into the city of Sharpsburg." As I have already shown, this is an error. Longstreet had no troops on the Hagerstown pike until Toombs's brigade came down to Sharpsburg from Hagerstown, near daybreak, next morning. Lee was at Keedysville, which was on the Boonsborough and Sharpsburg turnpike, and he says that his advanced picket at the entrance to Sharpsburg was encountered by our cavalry. Referring to the great quarto topographical map of Michler and Humphreys, already referred to, (Antietam sheets), it will be seen that no force from Keedysville could have reached the Hagerstown pike by any direct road, while Lee's trains, as everyone knows, were moving ahead along the Boonsborough and Sharpsburg road. There is also a passable road from Rohrsersville, then held by our troops, and from the South Mountain battlefield, then also in our possession, passing south of Keedysville directly to Sharpsburg. Any Confederate picket on the Hagerstown pike would have been caught directly in their rear, before the pickets could

learn of McClellan's or Franklin's, or Couch's approach, and driven north. This would have left Lee's assembling troops at Keedysville, and his trains creeping ahead at Sharpsburg, and exposed. While a picket on the Hagerstown pike would face no enemy whatever, for Toombs was at Hagerstown, Jackson stretching from Williamsport, down to Harper's Ferry, and the cavalry expedition undreamed of. Besides, Lee's own report stated exactly where the Confederate picket was. The cavalry, he says, "passed up through Sharpsburg, where they encountered our pickets."

In his report to the President, (War Records, Vol. XIX, Part. 1, p. 140), General Lee says: "Accordingly, the troops were withdrawn, (from South Mountain battlefield), preceded by the trains, without molestation by the enemy, and about daybreak (15th) took position in front of this place (Sharpsburg)." Of course Lee's outpost would be beyond the trains, and on the road along which they were advancing to his already chosen field of battle.

Colonel Voss states that the route of the cavalry was turned at Sharpsburg, towards Falling Waters. This is negated by the report of the Confederate General Pendleton, previously cited, in which he found that we had already passed at Jones's Cross-roads, which was on the Hagerstown and Sharpsburg turnpike, eight miles north of the latter place, and which is more than five miles east of any possible road to Falling Waters.

Pendleton pursued us from Jones's Cross-roads towards Williamsport, but never saw or heard of us after he left Jones's Cross-roads, simply because we never were within two and a half miles of the Potomac. Besides, there runs no road from Sharpsburg towards Falling Waters, which lies in the concave of a deep bend of the Potomac river to the west, and can only be reached by a cross-road at right angles from the main north and south roads from Hagerstown or Sharpsburg. (See plate XLII, War Records Atlas.)

Colonel Voss also states that "from a friendly chat which my guides had with some mill hands, at work in a large flouring mill," he learned "the exact strength and location of the rebels thereabouts." As a matter of fact there were no rebels at all along any road, or anywhere else, between the fields bordering

the Hagerstown and Sharpsburg turnpike and the Potomac River, miles away from any possible road from Sharpsburg to Falling Waters.

The mill hands were doubtless those at Fairplay Mill, at Marsh creek, about a mile west of Tilghmanstown on the Hagerstown pike. This was less than a half-mile south of where we came across the Confederate stragglers, in the cornfield, nearly a mile southwest of Jones's Cross-roads.

Colonel Voss had confused the encounter with Lee's outpost in Sharpsburg, with our departure from the Hagerstown pike near Jones's Cross-roads, and eight miles north of Sharpsburg, for he says: "In a short time we reached Sharpsburg, and here descended into the open country * * *. I halted the column to determine what direction to take, and had just dispatched my adjutant, with one of my guides, to a house nearby, where the guide hoped to obtain some information concerning the disposition of the rebel troops from the occupant, whom he knew, when suddenly a sheet of flame illumined the darkness for an instant, followed by the report of at least a hundred rifles sending their laden messengers about our ears. This came from a strong outpost placed at the entrance of the Hagerstown road, into the city of Sharpsburg, not more than one hundred and fifty paces ahead of us, furnishing the most conclusive proof that the rebels were in strong force in that direction. Before allowing the alarm to spread, the head of the column was turned in another direction, towards Falling Waters, on the Potomac, to find, if possible, a weaker point to pierce their lines."

Now this is strictly correct, when we *did* leave Hagerstown pike, and took to the fields, for our route at first was straight towards Falling Waters, eight and one-half miles distant, but we did not continue in that direction, for when we reached the first north and south by-road, just beyond the cornfield where the stragglers were, we took that road to the north and west, by Cross's Mill, on Marsh creek, then followed the Boonsborough and Williamsport road for a mile and a half, and then a branch road running from it north to the Hagerstown and Williamsport turnpike, where we encountered Longstreet's train. The interview at the house which Colonel Voss describes also

took place, but it was at the Doctor's house, and not near Sharpsburg, but was near where General Pendleton, at Jones's Crossroads, heard of us, who, as described in "Battles and Leaders," Vol. II, p. 611) "crossed (Voss's) Davis's track about eight miles north of Sharpsburg." I have already described this interview, where we first learned of the presence of the Confederates in force at Hagerstown, only five miles ahead.

The statement of General Lee determines the fact that this encounter with "a strong outpost," occurred at the entrance of the Boonsborough and Sharpsburg pike into the latter place.

Colonel Voss, continues: "By this time a bright starlight had succeeded the impenetrable gloom of the early night, enabling us to discern surrounding objects more distinctly. We were also guided in choosing our path by the faint glimmer of their bivouac fires. The column was gathered close in hand, the order to charge given, and my brave fellows, etc., etc."

The expression, "we were also guided in choosing our path," shows that Colonel Voss had a recollection that we were not then traveling along any road, but picking our way through fields, and his other statement, "the faint glimmer of their bivouac fires" confirms this, for troops do not bivouac at night in the middle of a road, when there are luscious "roasting ears" in the fields near by.

Then, as I have already stated, we did come out into the Boonsborough and Williamsport road, just opposite and half a mile south of St. James College, as Colonel Voss states, but which we could never have accomplished if we had taken the Potomac river road from "Sharpsburg towards Falling Waters," or Williamsport.

Colonel Voss says, of the capture of the train, in his unofficial report: "The dawn of early morning was just approaching when we were on the point of crossing the turnpike, about two and one-half miles from Williamsport. Suddenly the low rumbling sounds of heavy carriage wheels were heard on the pike. The column was halted. The leader of the advance reported a large wagon train in sight, coming from Hagerstown, escorted by cavalry and infantry. Two of our foremost squadrons were then ordered forward, and under command of Colonel Davis, of the 8th New York, attacked and routed the escort,

capturing the wagon train. It proved to be one of General Longstreet's ammunition and commissary trains, consisting of eighty-five army wagons, each drawn by six fine mules, and loaded with ammunition of war and provisions, and was followed by about thirty or forty young steers. We regretted that we could not permit this train to reach its destination, so we made it keep us company, and placed it in the van of our column, detailing for each of the rebel teamsters a sturdy trooper with pistol drawn, to keep him on the right road."

He adds that we were pursued for a while by rebel cavalry, hastily gathered together, and accompanied by two light field-pieces. •

As I was in the rear guard, and it was broad daylight, I saw a pursuit on the road attempted by some horsemen, but I did not consider them to be strictly cavalry, but mounted officers and guards of the train, some of whom we picked up, among them the wagon master and guide, the Pennsylvanian of whom I have spoken. The field pieces, if there were such, remained on the pike and fired across the triangle, and so did the infantry guards when they came up, who ran across the triangle firing, for a half mile or more, but we soon left them behind.

General Pendleton, in his report, describes it as "the large wagon train proceeding by the Hagerstown road through Williamsport."

General Lee, in his report of September 21, 1862, describes it as "General Longstreet's train on the Hagerstown road. The guard was in the extreme rear of the train, that being the only direction from which an attack was apprehended."

General Longstreet, in his report, mentions the exhaustion of artillery ammunition in the battle, and General John G. Walker, who commanded alongside of Longstreet during the battle, and with whom I became well acquainted after the war, told me that we had captured, in that train two-thirds of all Longstreet's small arm and artillery ammunition. That all he had left was that carried by his men, and in the caissons, except a short resupply, distributed among his troops. It was not only "one of Longstreet's ammunition trains," but his whole and only train, with the above exceptions.

General Longstreet, in his letter of April 6, 1880, to Sergeant Pettingill, says that its loss "gave us much inconvenience."

Colonel Voss gives the distance at which the attack was made as two and a half miles from Williamsport. By the official maps, it was about one and one-half miles, and two and a quarter miles across the ford of the Potomac, which was their destination, on their way down through Virginia, to recross to Sharpsburg by the ford below Shepherdstown.

The attack as described by Colonel Voss, was substantially as I saw it, excepting that our men, as General Forrest used to advise his men, the cavalry "mixed in" with the rebel train and their guards, excepting those which we sent in batches to cheer up the teamsters on their way, and look after the prisoners, who were making good time also, but not to "Ole Virginny."

Colonel Voss also says that on our approach to Greencastle "the farmers residing along the road took us for the advance of the rebel invaders, and made off with their horses and cattle to the adjoining woods," which was strictly correct, not only of the farmers, but of the scattered newly enlisted troops in and around Greencastle.

Colonel Voss also says: "As soon as practicable, I detailed Lieutenant Jonathan Slade, of my regiment, and a strong escort, to take the captured train to Chambersburg, and deliver the same to the United States Depot Quartermaster at that place. He returned with the quartermaster's receipt therefor."

I knew that this had been done, as I have stated, but not by whom.

In conclusion, Colonel Voss says of our subsequent movements: "This officer (sent down to General McClellan for that purpose), found General McClellan a few miles in the southeasterly direction from Hagerstown, making his dispositions for the battle of Antietam, and returned with his order, that I should immediately march the command I had taken out of Harper's Ferry to Jones's Cross-roads, on the turnpike between Hagerstown and Sharpsburg, and remain there until further orders. The command was moved there without delay all except the 8th New York, which had left Greencastle with-

out orders." There were absolutely no supplies there for this or any other regiment.

This also was correct. Colonel B. F. Davis construed the orders under which he left Harper's Ferry literally, "Arrived at Sharpsburg, they will seek to join General McClellan and report to him for duty."

It should be borne in mind that while the cavalry had been placed, with the garrison of Harper's Ferry, under the command of General McClellan, this was not done until September 12th. General McClellan says in his report: "I shall here state that on the 12th I was directed to assume command of the garrison at Harper's Ferry, but this order reached me after all communication with the garrison was cut off." General Halleck, in his report, states substantially the same thing.

Regarding the position of the cavalry during the battle of Antietam, Colonel Voss, in his unofficial report, says: "Our position at the cross-roads formed the extreme right flank of McClellan's army at Antietam, where the battle had commenced, and was in full blast on our arrival. I was instructed to guard against a flanking movement directed on the part of Lee against the right wing of our Army."

General (Stonewall) Jackson in his report, (Vol. XIX, Part 1, p. 956, War Records) describes this attempted movement of Lee's left, as follows:

"In the afternoon, in obedience to instructions from the commanding general, I moved to the left with a view of turning the Federal right, but I found his numerous artillery so judiciously established in their front and extending so near to the Potomac, which here makes a remarkable bend, as to render it inexpedient to hazard the attempt."

General J. E. B. Stuart, in his report, same volume, p. 820, makes a similar statement, saying that General Jackson stated that he "would send all the infantry he could get in order to follow up the success. I executed this order, keeping the cavalry well out to the left, and awaiting the arrival of reinforcements," which failed to come.

An examination of the maps will show that this movement, if successful would have struck the Hagerstown—Sharpsburg pike near Tilghmanstown, and if defeated would have thrown

the attacking force directly through Jones's Cross-roads towards Falling Waters and Williamsport.

Colonel Voss, also, pays quite a compliment to my own command, for doing in battle what a Maine regiment had medals of honor conferred on all its members, when only one-half its men volunteered to remain for five or six days, when there was no battle, and nothing to do.

Our commander says:

"It affords me great pleasure to record here a noble example of patriotism. The time of enlistment of my brave Rhode Islanders had expired, and they could not rightfully be held any longer to the performance of military service. Yet they cheerfully followed my colors to Jones's Cross-roads (this was done unanimously by vote), and remained on duty until after the impending sanguinary conflict at Antietam was fought and won."

This was not, perhaps, so creditable as Colonel Voss colors it, for it was still early in the war, and for most of us it was but a short vacation, for "the call of the wild" brought many of these soldiers back to service again, not to cease till the guns at Appomatox were silenced forever, and our Union was unalterably secured.

Reprints and Translations.

FIELD FORTIFICATIONS BASED ON PRACTICAL EXPERIENCES OF THE RUSSIAN-JAPANESE WAR.*

1. WAR EXPERIENCES AND HOW TO UTILIZE THEM.

THE Russian-Japanese War enhanced the value of field fortifications very much; from it may be learned the lesson that field fortifications are valuable for the offensive as well as the defensive.

The practical use of fortifications during the campaign were most numerous, and an especially noticeable point was the fact that, owing to various special works upon which they were engaged, it was not possible to employ engineer officers in the supervision of the construction of fortifications. Almost without exception each detachment was forced to supervise and execute its own works. Such being the case it followed that improvement of the terrain, construction of field works, etc., were under the direction of infantry officers. Therefore training in peace time in this duty is most important.

The reason why we wish to add such a course of study to our military education, is because we recognize its great value. There is, however, one great difficulty in its accomplishment—the public, unlike military men, dislikes the work of fortifications. This dislike must first be rooted out. However, difficult it may be, there is no good reason for delaying its incorporation into the new course of study. It is very necessary that this matter should be decided quickly and properly; the

*Translated from the Japanese by Lieutenant Charles Burnett, Fourth Cavalry, Military Attaché at Tokyo, Japan.

officers especially should be made to understand this subject thoroughly, so that their study may be increased through their interest in the work.

In order to accomplish this, in ordinary cases, it would be well to have the plan of fortifications which the army is to use, made uniform; its execution can then be uniform and it will be easy of comprehension by all officers. Officers should be able to comprehend simple plans, even without detailed explanation. At any rate, ununiform execution, the lack of mutual cooperation, or the improper or disorderly practical application of entrenching, cannot be permitted for a moment. In other words, although those who have sufficient judgement with respect to terrain and the requirement of the defense can easily decide what intrenchments are necessary, it is important that every one should be able to execute such engineering work in a fairly satisfactory manner. They must know, especially, what worthless intrenchments are.

However, the first thing to be careful of is excessive haste in always constructing fortifications without regard to time or position. Not only is the work improperly done, but its value is greatly lessened thereby. Intrenchments should only be constructed when convinced of their necessity and advantage, and their actual construction must be carried out at an advantageous time. If conditions have been judged wrongly, no necessity for fortifications will arise, and their occupancy may be actually harmful. In such cases, their use must not be forced in order to prevent the entire work from becoming useless labor, or through shame arising from the mistake made. On the contrary, conditions may be such that while already completed works cannot be used often, that is no reason for considering them entirely useless. If they be defended with bravery, endurance and resolution at the time of the attack, they will prove their value.

Even private soldiers must be made to understand that, though they may temporarily assume the defensive while awaiting an opportunity for taking the offensive, they must never simply lie behind their intrenchments and make a passive defense. When the opportunity comes, they must drive out the charging enemy with the bayonet, or, while one section

of the line is held firmly, the reserve will drive out the enemy who has penetrated out position; or, during the enemy's attack, we will select a good opportunity, assume the offensive ourselves and pursue the beaten enemy.

At the beginning of the Japanese-Russian War, only half of our soldiers carried intrenching tools, but toward the end of the war, almost all carried them; in actual warfare they were not found useless by any means.

2. PLANS.

In the attempt to make military men understand the practical application of field fortifications, one great obstacle is encountered. That is, the question as to what kind of works will be constructed, and the computation of detailed plans therefor. Although people generally are deeply infected with the idea that such computations are very important, as a matter of fact, it is quite unimportant in the field. Indeed, not only are such computations usually disregarded when works are actually constructed, but, if used, more inaccurate results will follow than if temporary measures, suitable to the terrain and existing conditions, were followed.

Even though the commanding officer may be most skillful and able, and though officers may be in charge of the work, the preparation of many detail directions will take more time than the actual construction itself; and even after the work is completed, much time must be wasted in carrying out the necessary and unavoidable corrections. Even though such detailed plans be completed before the appearance of the enemy, after the latter appears, the commanding officer must acquire a clear knowledge of the situation before he can judge where to begin work. In the case of field fortifications (position fortifications), which must be executed during an engagement, confusion cannot be avoided. All plans for such works are based on the fixed principles of science and must follow a common method; but at the same time their execution must be rapid and easy. The principal aim must be simplicity. Therefore in fortifications of the present day, detachments will never make the division of time and labor which so many people recommend. It should not be necessary for the commanding officer to take pencil

and paper in hand, but he should be able to plan intrenchments quickly from horseback, just like any other tactical problem.

In the plan of such works, the smallest permissible unit is the company of infantry working with the short intrenching tool, one-half working at a time. Similarly, in the artillery the smallest unit is the battery using the tools which they carry with them. In each detachment, there will be indicated, simply, the line which it alone, will fortify, this line always being limited to the detachment's sector of ground. In addition the artillery will be notified of the direction of fire. Although of course the commanding officer of each zone is responsible for the maintenance of his own communications and with communication with neighboring zones, this point must be borne in mind when orders for intrenching are given. When there is sufficient time, the long-handled tools will be brought up from the corps tool column, or, when the necessity arises, requisitioned intrenching and carpenter's tools will be used.

In general, it is a fundamental principle that intrenchments will be constructed by the troops which will occupy them later. Those detachments are responsible for the direct protection of their works and for the preparation of a reserve within their own sector.

3. ORDERS FOR INTRENCHING AND EXAMPLES OF EXECUTION.

(a) Introduction.

Fig. 1 shows the case of four battalions, or one regiment of infantry, entrusted with the defense of a front of 2,000 paces. Two battalions furnish the service of security and execute the work, while the other two form a reserve. When the hours of work are long, the reserve relieves the other battalions. Strong points d'appui are constructed, while the reëntering part has a comparatively weak profile.

In Fig. 2, the enemy has approached within effective rifle range and the first period of occupancy of the works after the withdrawal of covering detachments is shown.

Fig. 3 shows the detailed subdivisions of the defensive line.

FIELD FORTIFICATIONS.

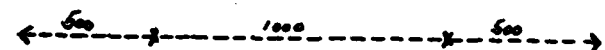
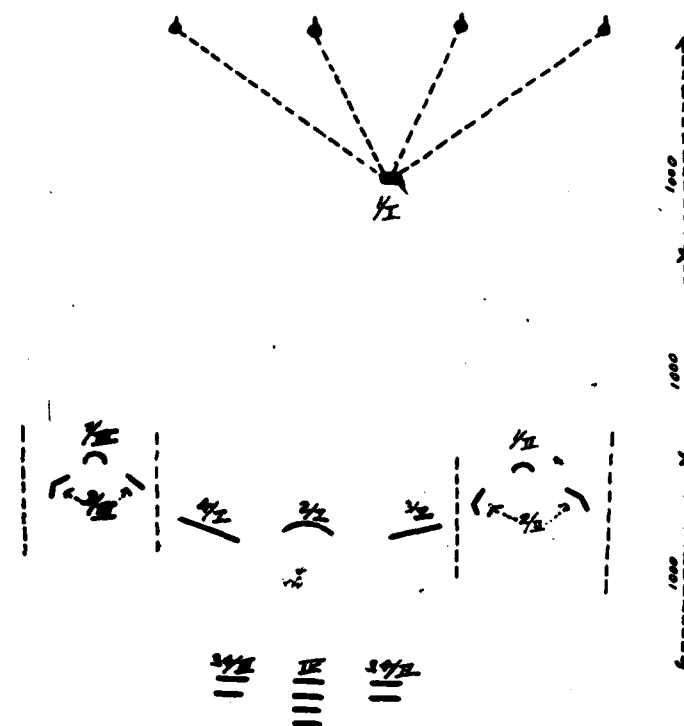


FIG. 1.

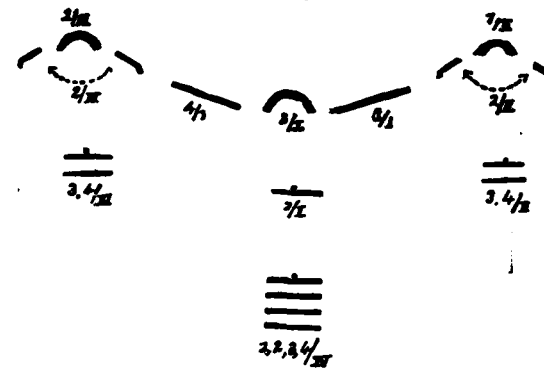
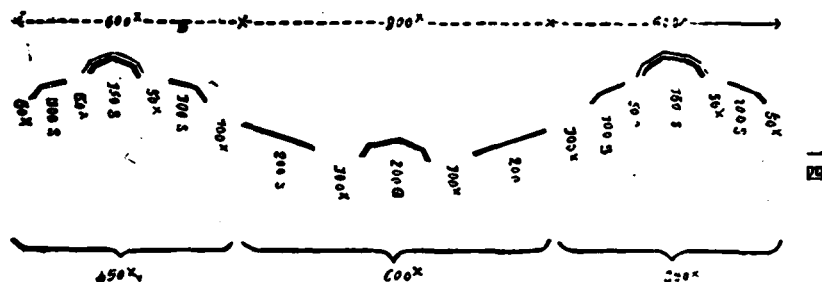


FIG. 2.

When the defensive line and the limits of the flanks, or its breadth, are clearly shown by the map (it is much better to indicate the above on the ground itself), an infantry battalion begins its advance in the direction of the indicated line. If conditions permit, mounted officers may be sent ahead to reconnoiter the line where intrenchments are to be constructed, and they guide the different subdivisions to their proper places. Upon arrival at the position, those officers will use soldiers as markers to indicate both flanks of the line where the work will be begun, and the points of the curves as well. They will then order the work to be begun.

Whenever soldiers are used to mark the position, the position of the support and the mutual relations of each subdivision



5, 6). The limit is a height sufficient to cover the head and shoulders of a prone skirmisher. In special cases, as in rolling country, the profile can be changed as in Figs. 7, 8 and 9, so as to conform to the natural shape of the ground.

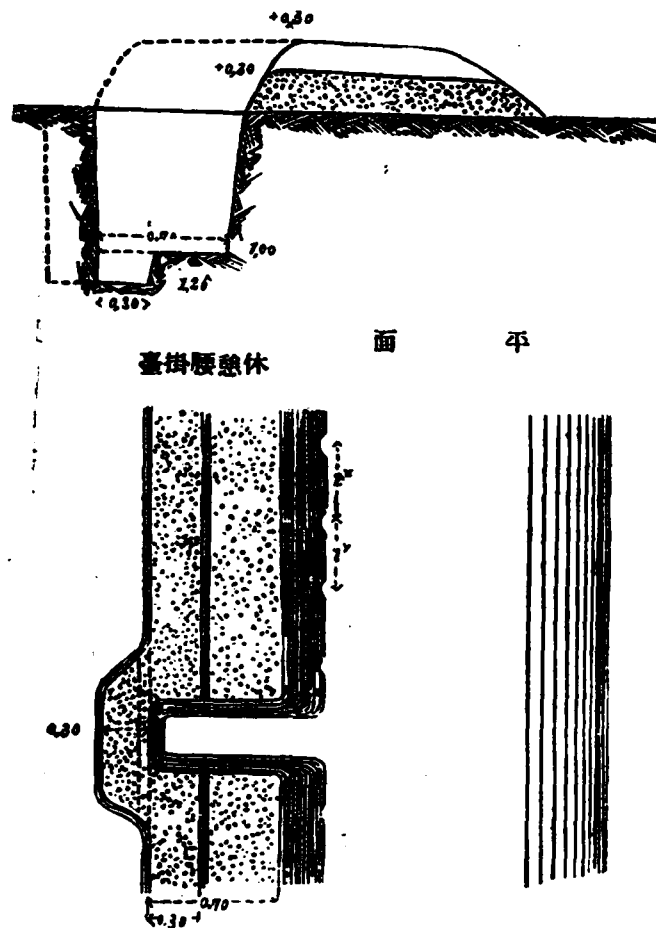


FIG. 6.

(c) *Drainage, Shelter and Clearing of Ground in Front.*

When the objective is defensive, and not merely a temporary matter the greatest attention must be paid to drainage. In the vicinity of Liao Yang, when the skirmisher's trenches and

the artillery emplacements which had been constructed a long time previously, were examined, all the ditches were filled with

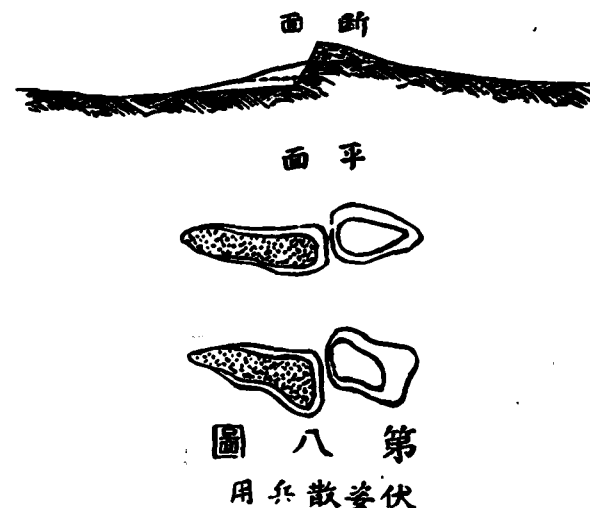


FIG. 7.—Prone Skirmisher's Trench.

water from the rains, and could be used but little or not at all. In one section of the battle line, a new artillery position had to



FIG. 8.—Prone Skirmisher's Trench.

be constructed during the battle. The offensive works of the German army at Metz and Belfort were practically useless from

the same reason. Therefore drain pipes, or drainage holes must be constructed (See Figs. 10, 11, and 12).

Intrenchments should be constructed so as to make it as difficult as possible for the enemy to see them. Accordingly, the construction of cover is important, and as few points as possible should be intrenched. At the latest, the construction of cover will be begun at once after the construction of the para-

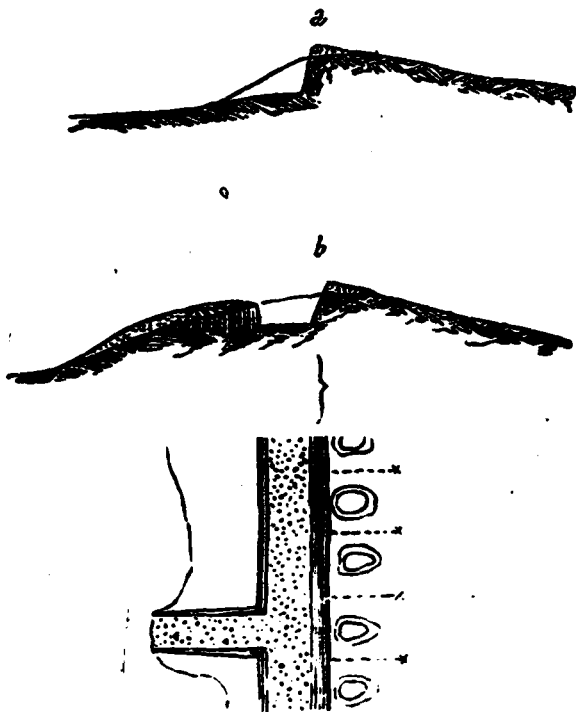


FIG. 9.—Kneeling Skirmisher's Trench.

pet. However, in the case of intrenchments prepared beforehand, whenever it is desired to conceal such preparations, or render the reconnaissance of them difficult, cover will be constructed at various ranges in front of the position before the intrenchments are begun. Whenever the color of the excavated earth differs conspicuously from that of the surrounding ground, the parapet must be covered with dirt from the latter.

The clearing off of the foreground at the time of occupancy of the position is a most important matter. It not only increases the field of fire, but protects the defender from surprise

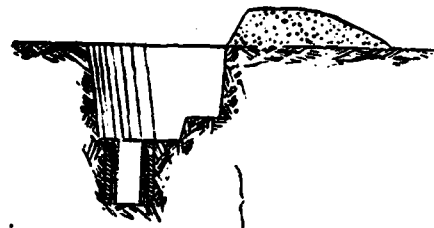


FIG. 10.—Drainage Pit.

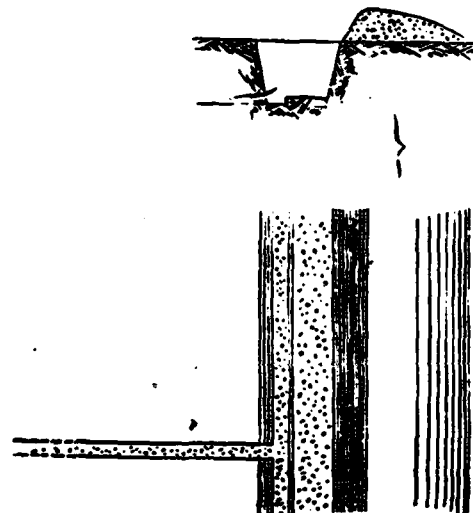


FIG. 11.—Drainage Ditch.

and renders it difficult for the enemy to make a detailed reconnaissance of the position. In such cases, anxiety about the property of the natives, or a desire not to injure such property,

will never be entertained. This matter involves the safety or danger of thousands of lives, which must not be jeopardized for the sake of a little anxiety. If the natives suffer, it is an easy matter to assist them, or to reimburse them in some other way.

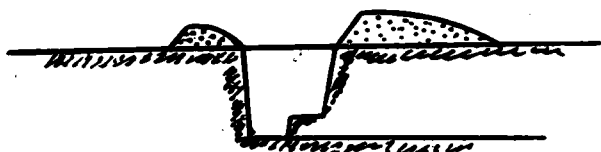


FIG. 12.—Drainage Ditch extending to the Front.

(d) *Manner of Using Intrenching Tools, and the Tool Column.*

According to the examples shown in Figs. 1, 2, and 3, in the detachment which is about to construct intrenchments in a defensive position, one-half are employed as a protective force and as a reserve. The other half engage in the work, one-

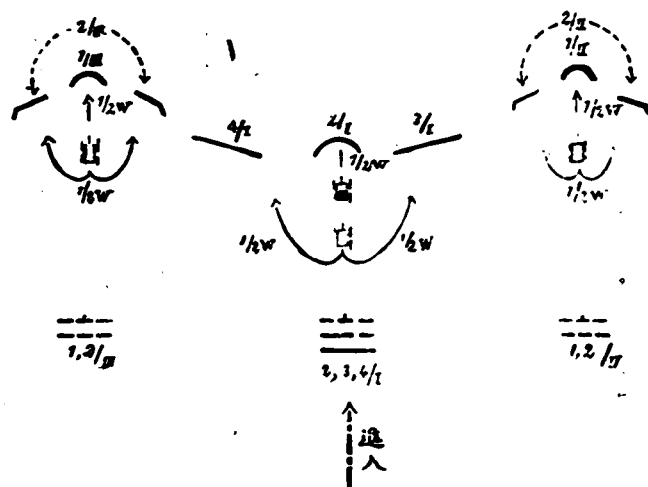


FIG. 13.—Intrenchments made with long handled tools only.

half the number acting as a relief. The number of men working at one time does not exceed one-fourth of the whole detachment.

In hastily constructed intrenchments which have not been planned beforehand, nothing but the portable short-handled

shovel is used; however, if it is desired to construct a strong profile and there is considerable time for its execution, or when it has been decided beforehand to intrench in that position, the long-handled shovel will be used. If this is done, it not only increases the rate of execution, but it is much less fatiguing to the men in the same amount of work.

The tool wagon belonging to each corps has five wagons (numbered from 1 to 5). Each wagon has the following tools: Shovels, 150; picks, 80; (total intrenching tools, 230); saws, 4; axes, 22; (total carpenter's tools, 26). Therefore, as a usual thing, the following procedure is followed in each detachment: To a half of each company, long handled intrenching tools are distributed; if the work is carried out normally, the tools from each wagon will supply two companies ($\frac{1}{2}$ battalion). If in each detachment only half of the men work at one time, while the other half acts as a guard and reserve where tools are not needed, one wagon from the tool column will be sufficient for each battalion. Therefore, the five wagons of the tool column will supply long-handled intrenching tools for five infantry battalions.

The small number of carpenter's tools loaded in each wagon will be used in clearing off the foreground and in constructing cover, by the detachment which is using the intrenching tools from the same wagon; they will be distributed at the same time as the intrenching tools. The pioneers belonging to each regiment will execute such special work as bomb proofs, look-outs, drainage works, and generally all work which requires the use of carpenter's tools. Four wagons, as indicated in Fig. 13, will be sufficient for the whole work.

In such a case, of the four wagons assigned a regiment, two accompany the 1st battalion; of the other two, one each enters the position with the half of the 2d and 3d battalions. After they have arrived at the position, each company receives half of the tools from one wagon, (75 spades, 40 picks, 115 tools in all). After the work has been completed and the tools cleaned, the wagon is brought to a point under cover, as near as possible to the position, in order that the tools may be reloaded.

The excess tools in a wagon will be held in reserve, for it is a fundamental principle to always distribute the entire con-

tents of a wagon to one unit. It is strictly forbidden to divide up the tools of one wagon among several detachments. According to this example, when long-handled tools only are used, five battalions can be worked at the same time, and a defensive work with a front of 2,500 paces can be constructed.

When the entire work must be finished at the same time and the salients are to be made strong with weak reëntering



FIG. 14.—Intrenchments made with long and short handled tools.

angles in the intervals, long-handled tools will be distributed to those detachments only which are engaged on the salients on both flanks. Short-handled tools will be sufficient for the intervals. This is because work can be done four times as fast with the long-handled tool, as with the infantry intrenching tool. In this case, two wagons will be sufficient for one regiment, the manner of distribution being shown in Fig. 14.

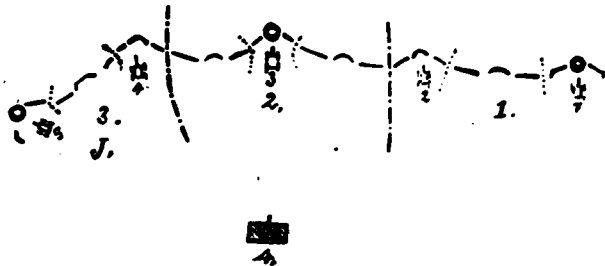


FIG. 15.—Manner of Intrenching a Division with both long and short handled tools.

Similarly, to the 2d regiment, which is engaged in constructing two re-entrants and one point d'appui, one tool wagon only is required; to the 3d regiment, two wagons are required. Therefore, in a division, three regiments are employed in the first line; if the other regiments be temporarily placed in rear as a reserve, the tools of wagons Nos. 1 to 5 will be sufficient to enable an entire division to construct hasty defensive intrenchments.

During the execution of the work, the interval between individual soldiers must be over one and one-half paces at the least; if the interval is less than this, experience shows that it interferes with freedom of movement and decreases the digging capacity of the soldier.

4. TECHNICAL ARTILLERY WORKS.

Artillery, like the infantry, should be able to execute their own intrenchments and other defensive preparations. Epaulements are of the first importance, and, next, the repair and hasty construction of communications (lines of approach). By the latter is meant the construction of special artillery roads across difficult ground from the roads in rear to the artillery position. In order to make drainage easy, gun platforms will usually be constructed on the natural surface of the ground. If this is not done, more time will be consumed in the arrangements for drainage than in the construction of the epaulement.

A work which contains several guns at small intervals is easily discovered by the enemy, and offers a favorable target for hostile fire; such an arrangement will be used only in special cases and for special reasons. As far as possible the gun epaulements must be suitable to the terrain.

With respect to communications, lines of approach suitable to the width of the carriage track will be constructed on uneven ground or on steep hill sides. Ditches, gullies and small streams which have steep rocky banks must be bridged; steep earthy banks will be cut and levelled. Existing bridges will be repaired according to necessity.

5. OFFENSIVE INFANTRY WORKS.

In order to forestall criticism, I must make an explanation here. At first glance, an attacking force would seem to require a great number of trenches, to be constructed on the skirmish line which is usually composed of more or less excited men. I will explain this matter:

The first consideration with respect to the foregoing, is that the effective fire of the enemy is never the same all along the firing line, because the effectiveness of that fire depends upon the configuration of the ground and the amount of de-

fensive preparations of the enemy's line. However, the troops which advance in the first line, on account of the losses they have already received or are about to receive, must construct artificial cover. Cover will not be constructed at the same distance from the enemy, however, and there will be many small inequalities of the surface of the ground which will require but little alterations, or no technical work whatever, to be quickly made suitable for use. In addition there will be places within the zone of attack which the enemy cannot see, and there will be more or less ground which he cannot sweep directly with his fire. In such cases, a large part of the attacker's advance is not visible to the enemy; consequently in crossing that zone there will be no necessity of constructing trenches. Therefore, the necessity of intrenching from the longest ranges is entirely exceptional and will be required only in one part of the skirmish line. However, on entirely level ground in great plains which afford not the slightest cover, the regular attack as described in the Drill Regulations will be carried out step by step, with patience and resolution. At each halting place, during the advance from one firing position to another, individual cover for prone skirmishers alone is constructed.

In the advance from one such halting places to the next, soldiers, individually, will double-time, or in most cases, crawl. In executing the advance by rushes, sufficient preparations must be made beforehand by fire action. In the meanwhile, in each firing position, in order to obtain superiority of fire, the normal combat will be begun. Such a combat is seldom decided in a day; if the enemy fight stubbornly, the fight can be expected to last two or three days at least.

At the battle of Liao-Yang, the Japanese army began an infantry attack on the 1st of September; the first firing positions were constructed, 1,000 and 700 paces from the enemy. In these positions, which were occupied for a long time, skirmisher's trenches were constructed. On the afternoon of the 2d, the first attack on the Russian position was made; the attack was repulsed, and we were forced back about 400 paces. Here we made a stand until dark, taking advantage of the trenches which had been constructed during the advance. On the night of September 2—3, skirmisher's trenches were dug 300

paces to the front; these trenches enabled us to repulse the Russian's counter attack on September 3d.

The terrain often renders such difficult work unavoidable; and it is a great mistake to consider such experiences as entirely exceptional, and only liable to happen in weeks or months.

Intrenching is of such great importance in deciding the fate of battle that it is not at all unreasonable to require such hardship from the soldiers. As an example of the great losses incurred when intrenchments are even partly neglected, there may be cited the instance of May, 1905, when three Japanese battalions advanced to the attack at sunset, from behind sand-bag cover at a distance of 400 paces from the enemy's line. After a fight lasting over 24 hours, they lost 1,297 men killed and wounded, that is, over fifty per cent. of their total strength.

THE USE OF SAND BAGS.

In wars of the present day, it is really surprising how often sand bags are used; by their use rocky ground or ground frozen in winter can be defended with intrenchments. Sand bags are comparatively light, occupy but little space, and have the advantage of being very cheap. For these reasons they can be easily prepared for each soldier; they can be easily transported, and can be used for many other purposes as well.



FIG. "A."

FIG. "B."

The technical method of using sand bags is shown in the following sketches. Fig. (a)—In rocky or frozen ground, shows the method of using sand bags as cover against fragments of shell. Fig. (b)—shows how to use sand bags as head cover. In such cases they will be distributed so as to be most convenient.

ient for individual soldiers. Fig. (c)—shows an example of the use of sand bags for the protection of the head and body at the time of the advance over ground which is completely commanded by the enemy (defile, deep valley, etc.). Fig. (d)—shows the use of sand bags in the passage of artificial obstacles (military pits, wire entanglements, etc.).

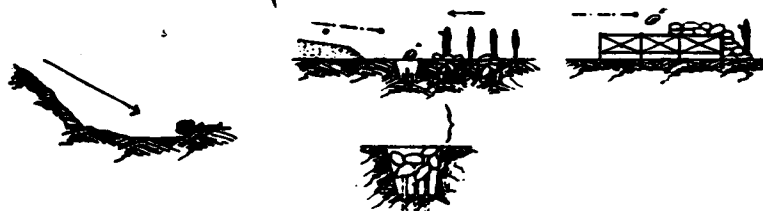


FIG. "C."

FIG. "D."

The obstacles used in the Japanese-Russian War were almost always wire entanglements, and military pits in which short stakes were erected. Abatis was seldom used on account of the scarcity of large trees. Abatis is only valuable when freshly made and its period of usefulness is very short. After



FIG. E.—Bomb Proofs.

it has once dried there is great danger of fire, as it is easily set on fire by artillery or by a special squad sent for that purpose. Therefore, it is not a good thing to use it in summer. Especially when abatis is used in front of and close to a position it is doubtful if the position can be held in case of fire. The enemy

will take advantage of the fire to press to close quarters suddenly, and if the position has been wholly or partly vacated, will quickly charge.

If materials for roofing (pebbles, crushed stone, sand, or sand and dirt) are used in sand bags in the construction of bomb proofs, it will give great elasticity, good stability, and increase the resisting power.

THE VALUE OF FOX HUNTING.*

By "UBIQUE."

EVER since the Peninsular War, when the Duke of Wellington added a pack of hounds to the forces under his command, and set an example by hunting with them himself, it has been recognized by those in authority that the sport of hunting is the finest recreation for all officers, and for staff and mounted officers in particular.

Of late years continental nations have come to recognize the military value of this sport, and the Italian, Russian and German Governments have introduced it to their armies. In fact, Germany, with her habitual thoroughness, has made hunting compulsory at certain cavalry centers and riding establishments. Fox hunting forms part of their education, and it is made a point of honor that all officers should ride straight.

In England today facilities are given to officers in almost every station in the United Kingdom to allow them to get as much hunting as possible, having due regard to their military duties. In fact, many commanding officers rightly regard fox hunting as a parade, and actively encourage their juniors to hunt. In addition, the majority of those hunts, in whose countries lie the garrison towns, are most hospitable in welcoming soldiers and most generous in asking from messes a smaller subscription in proportion than if the hunting members of those

*From the British Cavalry Journal.

messes were civilians. For strategical reasons the bulk of our regular army is quartered in the South of England, consequently the shires are out of reach of most officers; but hunting can be obtained near every big military station, and no hunting is so bad that it would compare unfavorably with any other sport or recreation.

Now of those officers belonging to the mounted branches of the service who enter the army year by year, a certain proportion have been, so to speak, brought up in the saddle, and are familiar with the laws and literature of hunting; but a large proportion have, on entering the service, but little knowledge of the sport, and though they usually meet with every encouragement they are inclined to under-estimate the value of hunting to themselves as soldiers and as men. The old adage that "if a thing is worth doing at all, it is worth doing well" holds as good for hunting as for all other sports, and the young officer, on starting to hunt, should give his whole attention to it and not allow the social amenities to divert his attention from the real business of riding to hounds. It has been said that "hunting is the sport of kings, the image of war without its guilt and only twenty-five per cent. of its danger," and there are certain qualities necessary to a successful squadron or battery leader that are fostered, developed, and brought out in the hunting field. In fact, it is no exaggeration to say that the combination of professional knowledge and the ability to ride to hounds makes the ideal cavalry officer.

There are certain advantages of hunting that are shared by most field sports. A man who is hunting regularly remains as fit and hard as he would were he giving up his leisure hours to boxing or Rugby football; one has only to go for a day's hunting after a long illness to realize that it is not a sport for weaklings, and conversely, one finds that after a season's hunting the longest route march does not tire. Again, hunting, in common with other sports, keeps a man out of mischief and occupies his spare time in a way calculated to develop that factor of manliness essential to a leader of men. Every sport that brings men together conduces to good fellowship, and hunting develops this to a marked degree—the pleasantries exchanged at the meet the friendly rivalry across country, the long ride home at the

end of a day with one or two companions, all help to establish that comradeship among officers that makes their life so pleasant.

To appreciate fully the advantage of hunting to the soldier, we should inquire what are the special qualities necessary to make a first-class man to hounds, and then we shall see that they are just those qualities which are most required in officers who are to be leaders of men. The most important of these qualities are courage, horsemanship, and judgment, and of them the most essential is perhaps courage, for without courage, either in war or in the chase, all other qualities will not avail. Both in the hunting-field and on the field of battle the man is most likely to distinguish himself whose daring is tempered with coolness, whose heart is always stout and hopeful, and who never loses his head. Danger there is in both; "under fire of a guinea's worth but it comes to you, in the hunting field a penn'orth but you go to it," and to surmount these dangers, courage of a high degree is necessary.

Now courage may be subdivided into pluck and nerve, which are themselves two distinct qualities. Whyte-Melville separates them as follows: "Pluck takes you into a difficulty, and nerve takes you out of it." Imagine a man riding to hounds on a horse that does not like water. Hounds splash into and over a brook; he must follow, so puts his horse at it, determined to get across somehow. It is pluck that makes him keep his horse's head at it, but it is nerve that makes him, as the horse sticks his toes in the ground, swing him into the brook sideways, and, floundering down the stream, guide him scrambling up the opposite bank and away after the disappearing pack.

So in the real thing, when the same man is battery leader and has to bring his battery across a zone swept by the enemy's shrapnel: It is pluck that holds him to his resolve and will not let him flinch from his task, but it is nerve that makes him watch for the flashes that herald the next rafale, then shoot up his hand, stopping the teams short of the danger zone, and, when the shells have harmlessly expended their fury, give the signal that makes the battery dart like lightning across the dangerous space before the next outburst can arrive.

Assheton Smith, perhaps the finest man to hounds that has ever been known, had three favorite maxims: "Throw your heart over and your horse is sure to follow; There is no place that you cannot get over with a fall; No man can be called a good rider till he knows how to fall." Now, to live up to these maxims requires courage; there have been men who have consistently ridden well to hounds without ever getting a serious fall, but he who would excel must be prepared to have several falls and occasionally a bad one. Though it is these bad falls that do sometimes destroy the incipient pluck in a man, yet more often they improve it, temper it, and weld into it the rarer quality of nerve, thus producing the first-rate man to hounds. More falls are caused through lack of nerve than through overboldness. The doubts as to the capabilities of one's horse to jump a fence are communicated, as if by telepathy, to the animal, and he loses confidence in himself. The wrong application of the leg, or the interference with his head as the horse takes off, or the clutch at his bridle if he pecks on landing—all due to lack of nerve—cause more falls than one generally realizes, while a disposition to crane or shirk is fatal to the would-be first fighter. On the other hand, the willingness to take risks, the knowledge of how to avoid interference with the horse, and, above all, the determination to get to the other side lead to the development of a strong nerve that will help out of all difficulties. The highly strung temperament of the average man to-day is an outcome of civilization, and as modern inventions make weapons more deadly, and increase the range of projectiles, so the nervous strain on combatants is ever increasing. Thus the possession of a cool nerve, as distinguished from the impetuous hot-blooded valor of a Crillon, becomes more and more desirable.

The acquisition, then, of pluck and nerve, invaluable to the man who rides to hounds, cannot fail to be equally valuable to the soldier, and he goes into battle doubly armed who has already acquired these qualities in the hunting-field. That every mounted officer should be a good horseman and a good horse-master is undeniable, and it must be conceded that the hunting-field provides the best opportunities to acquire proficiency in both. A firm seat is as necessary to the hunting-man as it is to the soldier, and it is as by hunting that a firm seat is gained.

Young officers on joining have usually a rather stiff seat in the saddle, acquired in the riding-school, and lack that suppleness of the body combined with the iron grip of knee and thigh that comes after long days spent in the saddle and over fences.

Grip and balance, which are interdependent, come only with practice, and the best opportunities for gaining them are to be obtained by hunting.

Not only will the rider learn how to sit on his horse, but he will learn how to assist him, to bend his body in sympathy with his movements, by bearing forward to take the weight off his quarters as he rises to a fence, by pressure of the leg to hold him at a fence and make a refusal impossible, by sitting firm and not rolling in the saddle to save his back at the end of a long day.

Although it might be too much to say that hunting confers the gift of hands, which is rather a gift of nature, yet hunting undoubtedly improves it. At any rate, one learns by experience to leave the horse's mouth alone, especially over fences, to guide him over rough country, to turn him quickly, and to stop him when necessary. Above all the young rider, if he is of the right sort, acquires in the hunting-field confidence in himself and in his horsemanship that will always stand him in good stead on service. Not only that, but hunting establishes a comradeship between horse and rider that is invaluable to both. The rider learns the capabilities of his mount, appreciates his efforts, and feels himself bound to reciprocate by studying his horse's comfort as well as his own. A man who learns to buy a horse, keep him fit, know when he is fit and when he is tired, and to spare him all unnecessary work in the hunting-field, will in war undoubtedly get the best value out of the horses under his charge.

The quality of judgment is developed in the hunting-field to a greater extent than any other quality. The term "judgment" is very comprehensive and embraces such qualities as initiative, quickness of decision and action, and the possession of an eye for country, all of which are shared by the leader of men and the first-rate man to hounds. Judgment comes by experience and observation; reading the acknowledged authorities such as Surtees and Whyte-Melville will assist in forming judgment, but reading is useless unless it be with understanding;

personal experience will bear out the truth of what has been read and will drive it home. But in order to gain advantage from what he has read and what he has experienced a man must ride with his head, must use his eyes, and observe what other men do, what the hounds are doing—what the fox has done. He should, like Facey Romford, ask: "What should I do were I the fox?" and by so doing train himself to appreciate the situation from the enemy's point of view in war. Thus, in time he will learn how to take advantage of every check and turn, how to ride for ground, to pick the best place at each fence; in short, will make himself master of the art of riding to hounds.

As in war, it is the object of a commander to seize the initiative, so it is initiative that makes for success in the hunting-field, and the possibility of showing initiative comes only with experience and observation. "Take your own line" is advice so often given and so seldom acted upon. But a man cannot take his own line and ride it with success until he has studied the elementary rules and principles correctly. For instance, at the covert-side he should make a mental note of the force and direction of the wind; how the cover is being drawn; and should then decide for himself how he can best obtain a good start without interference with the sport. Having watched the movements of the best men in the hunt, he will decide whether he will follow them or whether he will—if allowed—follow the huntsman. But it is when hounds go away after their fox that the critical moment comes, for it is then that initiative is so important and the quick decision followed by the quick action will make or mar the pleasure and success of the day. "Shall I follow that crowd that is making for the gateway or shall I jump these rails in the corner and get away by myself?" An instant's hesitation is fatal either to your chance of getting a good place at the gateway, or to your chance of getting over the rails, for in the latter case your hesitation will be communicated to your horse, and he will probably decide that it is better and safer for him to join the other horses.

As in hunting, more runs have been lost through indecision and uncertainty than from want of courage, so in war, more battles have been lost through the same causes.

The study of ground is of the greatest importance both as a means of acquiring that "eye for country" so important for the squadron or battery leaders, and also as a means of acquiring the art of riding straight to hounds with the minimum of discomfort to horse and rider. A judicious choice of ground is essential to success in this direction. In every run occasions abound when a man who keeps his eyes open and rides for ground may save hundreds of yards and be in a position to take advantage of every check that may occur. The rider should always make for the ground where the foothold is smooth and sound; in plough the furrows where the water is standing offer the best and easiest passage; ridge and furrow should be crossed aslant; the rider should keep an eye to blind drains; the fox will, as a rule, travel down wind, so the rider should choose a line to leeward of the pack but not so far from them that a turn into the wind would leave him far behind. The tendency of many young riders is to follow close upon a pilot or upon tail-hounds; both practices are reprehensible, and will bring their followers into deserved unpopularity. In a strange and intricate country one is often obliged to choose a pilot and follow him, but this does not mean that his footsteps should be dogged as if he were a criminal! The follower must give his pilot plenty of room and avoid jumping directly behind him. The feeling that if one falls one will probably be jumped upon is most unpleasant and calculated to upset the nerves of the boldest rider. It is usually possible to jump to one side of the pilot, and the follower should harden his heart and pick out his own spot in the fence even though it is stiffer than that selected by the man he is following. An even worse crime is to ride close upon hounds; nothing upsets them more, and the rider who does this spoils the sport for himself and for everyone else. The rider then must first gain for himself a quick start by making up his mind what is the right thing to do, and then doing it at once; secondly whether he is shaping his course by hounds or by pilot, he should make the best use of the ground he will traverse, pick his own place in each fence, and ride for that place with resolution and determination. He should always keep an eye forward for indications as to what direction the fox has taken, such as distant hollows, ploughmen waving, sheep bunching in a field.

If hounds check and cast themselves, he should stand still dismount to ease his horse, still with an eye forward; ready to be up and away the moment hounds hit off the line. As it is the soldier's business in war to take risks so as to be able to strike quickly, so in the hunting-field should one be prepared to jump an ugly place at short notice so as to get away quickly; but as the soldier, so the rider must, by using his judgment reduce to a minimum the risks that he must run.

Experience and observation will show the best way to overcome all obstacles; by observation the rider will learn that the banks of a stream are soundest in the neighborhood of trees and by experience will learn to estimate correctly the strength of rails. It is observation that makes the rider to recognize country as he gallops over it, to foresee obstacles, to take in features and remember them again. In no way can this eye for country be acquired so well as by riding one's own line to hounds, and officers on the staff, and, in fact, in every branch of the service gain incalculably by its acquisition.

As officers are given such exceptional facilities to hunt, it is "up to" them to give a thought to their profession when hunting. Many keen hunting men when on a railway journey amuse themselves by imagining that they are hunting over the country parallel to the line, and are able to pick out their places at each fence as it comes into their field vision. Similarly many keen soldiers will find that a ride to and from a meet is made more interesting by imagining oneself to be one of a reconnoitering patrol; and the study of features from a military point of view will be of considerable assistance. Even a late arrival at a meet after hounds have moved off may often be of use to the soldier, as he will have to exercise on occasions considerable skill and ingenuity in finding hounds quickly.

The advantage of the ability to ride across country was brought home to the writer very forcibly during last year's maneuvers. On one occasion he was sent out on a night reconnoissance in a country over which he had hunted some years previously. Remembering the lie of the ground he was able to reconnoiter mounted up to within half a mile of the enemy's main position by riding across the fields that lay between the cross roads held by the hostile outposts; and he was able at

dawn to lead a battery into a position that enfiladed the enemy's trenches at a very close range. Again, on the last day of army maneuvers, while employed as reconnaissance officer, he saw troops debouching from a village on the other side of a strongly fenced mile of country. His hunting experience enabled him first of all to ride up unseen so close that he could distinguish clearly the tartan of the Highland regiment that was leading, and then to gallop back straight over the country to report what he had seen without loss of time.

Generally speaking, there can be no doubt that to all arms the practical knowledge of country gained in the hunting-field is of inestimable value.

The leader of the cavalry patrol can tell at a glance what is his best way over a country, that this fence can be jumped by his troopers, that those pollards winding along the vale mean water, that that plough just ahead should be avoided if the horses are to be kept fresh; while the gunner will be able to pick out a good position for his battery, and ride the straightest way to reconnoiter positions. The infantry man will show his section leaders the best way through this wood, and how to take cover in the ditch that will be under that fence—all the hundred and one little points that come instinctively into the head of a man who has ridden to hounds with his eyes open.

In conclusion, the writer would ask those who have had experience of young officers if they would not choose for initiative, resourcefulness, nerve, horsemanship, and judgment the really good man to hounds? such a man of whom Whyte-Melville has written:

'To whom naught comes amiss
One haze or another, that country or this;
Who through falls or bad starts undauntedly still
Rides up to the motto: "Be with them I will."'

THE BREEDING OF ARMY REMOUNTS IN CANADA.

From "Country Life," London, England.

HOW many men who love the thoroughbred horse, and most real men do, have thought of him as the most prepotent thing on earth next to man? Perhaps this has not occurred to you who watch him prance in the paddock with spirits as gay as the silks he carries, or struggling down the stretch in game contest with his kind. You may praise his speed and courage in prose and poetry, and your artists may do their best to glorify him on canvas, but the chief feature of the breed may be overlooked in so doing.

The thoroughbred of today is the product of centuries of care and selection. It is admitted by all that his ancestors came from North Africa and Asia. He was once a hog-maned animal engaged in the fight for food, just as so many millions of men, less fortunate than the thoroughbred, are at present. I suppose that the first of the tribe was captured as a colt, probably after the mother had been killed for food, and was kept as a pet for the children of prehistoric man. Then some genius got on his back and discovered that four legs were better than two in getting over the ground. This lesson was learned by the tribe and more horses were secured. Centuries probably passed before a rope of twisted thongs was placed in the mouth of the horse so that man could direct his movements. And this invention, small as it may seem to us now, had more to do with the history of the human race than all the battleships, airships or automobiles that have ever been invented. From that time the human race advanced. The warriors on horseback ventured afar. They were known in ancient Babylonia, on the west of England, and in remote China. Ever since the horse has worked for man in peace and carried him forth to battle.

In trying to get the best of the breed, one with the most energy and the most courage, men, particularly Englishmen

have produced the thoroughbred. Such care has been exercised in selection and breeding, such ingenuity in perfecting environment, such rigid tests imposed, that the present-day thoroughbred has nothing to transmit except thoroughbred germ cells, and therefore he is prepotent, transmit his qualities without failure and improves all breeds of horses, which means the horse breeding industry. Above all other things he gives to his offspring the sureness of foot, courage, endurance and weight carrying ability required of the ideal war horse. Perhaps *too finely bred and fiery himself*, he is the *perfect sire to get a trooper or a charger from the cold-blooded farm mare*. This is an axiom of breeding which has fallen lightly on English ears, but other nations have learned the lesson, and that is why European powers come to England and pay any price for the best thoroughbreds to *breed to their farm drudges* at home. That is why France at the present time can assemble five hundred and twenty-five thousand horses suitable for war purposes in two weeks' time. That is why Germany can count on six hundred thousand well bred horses in time of stress. It is why Italy, Austro-Hungary, the Argentines, Japan and Russia have taken your thoroughbred sires. It also furnishes the reason as to why the Canadian National Bureau of Breeding was started seven years ago. This bureau started out to solve the remount problem of Canada, and also of England, by the free distribution of thoroughbred sires throughout Canada. It has placed nearly half a million dollars' worth of these horses from ocean to ocean, and has prepaid the freight, express and all other expenses to the points selected. The cost of the work for the first few years was met by prominent Canadians who believed in the undertaking as a bond of Empire and an aid to Imperial defence. So much has been said about Imperial defence, and so little real work done in that direction, that these men have sworn by the bones of immortal Bend Or to "say nothing, but saw wood," and I may be called to task for giving this news about the bureau; but there have been many enquiries during the past year or so from England, and it is perhaps just as well to state some plain facts.

For the past three years the National Bureau has been aided by the Canadian Government and by some of the Provincial

Governments. This has made it possible to extend the work until the thoroughbred sires are strung out from Bridgetown in Prince Edward Island to the shores of the Pacific Ocean and from the American boundary to the Sub-Artic. In all places they have attained good results when bred to native mares, and there are already over one million dollars' worth of their produce in Canada. In New Brunswick, for example, Ostrich, a grandson of Bend Or, has produced one hundred and twenty-one colts in four seasons. From end to end of Quebec, Bureau sires are producing handsome colts. Ontario has been attended to from Ottawa to Algoma and south to within sight of Lake Erie. Manitoba has hundreds of these half-bred colts, and they are winning prizes all over the Province. Saskatchewan and Alberta have been looked after thoroughly, and the Bureau work has been extended into the Okanagan country in British Columbia and over the Rockies to the Pacific.

A great portion of the work in Western Canada is done by Englishmen. Many of them have served in cavalry regiments and know what cavalymen need. Some of them hunted to hounds over here, and as soon as the young half-breeds arrive there comes a call to the Bureau for hound puppies. There you see the old spirit of sport and war, and the Bureau has found it existing on the Peace River frontier, one hundred and ninety miles north of the farthest north mounted police post, not to speak of railway lines. Your sons, the real pioneers of Empire are out there fighting the good fight of race expansion alone but their love for the thoroughbred and his get has not been cooled by hardship and solitude. They are sportsmen all and fighters at the front of Empire. Some day they may have to bear the shock which race pressure has always brought about. When that day comes they will have good horses to ride. And rest assured they will go forward, for there are two living creatures which never know when to quit—a good white man and a real thoroughbred horse.

Together they have always travelled, and where otherwise can Nature show such efficient carriers of type? Look over the list. Nature has tried the tiger, with his sharp teeth; the crocodile, with his coat of mail; the turtle, with its hard shell; the elephant, with its huge size and strength; the snake, with its poison

sac; the eagle, with its flying power and rending beak; the great and small, from the masodon to the malaria microbe; but her greatest triumph was man and his friend, the horse. Man astride of the horse has eaten everything, slaughtered everything, conquered everything, plant and animal. He has made a "den" rug of the tiger; the tusk of the elephant he has changed into bri-à-brac; the eagle is stuffed and decorates his hall. He makes shoes out of the crocodile's hide, and the turtle is in his soup. For a time it seemed that he might be stopped by the infinitesimally small, that the microbes might stop his onward march, but these he now has sealed up in test tubes classified and labelled. He feeds the few which are at large on debilitating serums before turning them out of his human system. Man, the embodiment of force goes over the earth arrogant and all-powerful. And the greatest conquerors among men have always advanced on horseback.

JOHN F. RYAN.

CAVALRY HORSE IN ACTION.

From "*The Field Illustrated*" of October 4, 1918.

WE usually look for real and authentic information in the columns of the New York *Herald*, but when we are told, as we were in last Sunday's edition of that paper that "when there is real business to be done, bodies of mounted troops nearly always move on a jog trot," and "that modern cavalry was almost never called upon to gallop except in retreat." As this piece of information emanated from the late Charles L. Railey, horse-dealer, we suppose we ought to believe it, if we don't, we have no doubt that all the great cavalry generals of this and other countries will. It was Cronje's, and particularly De Wett's wonderful speed and mobility that gave England *all* the trouble in South Africa. They were all mounted, and so fast, and their horses so fit, that they took, through speed alone, position after position tried for by the British; cut their lines of communi-

cation time and time again, turned their flanks and out galloped and out maneuvered them upon unnumbered occasions. "The jog trot"—Great Scott! We wonder whether that most excellent and lamented gentleman the late Mahdi broke the British squares at a jog trot, or whether General French, after he had got together the fastest and lightest cavalry the British Empire was capable of producing moved at that dignified gait. Amusing, very.

THE ARMY HORSE.

BY FIRST LIEUTENANT ROBERT M. DANFORD, FIFTH FIELD ARTILLERY.
(From *The Thoroughbred Record* of September 6, 1913.)

AS a constant reader and loyal admirer of your paper as a lover of well bred horses, particularly the thoroughbred, and as an officer of the army who is deeply interested in mounting our soldiers on American bred horses that cannot be surpassed by those of any other army in the world, I feel disposed to make reply to your editorial of August 16, 1913, under the subject "Uncle Sam has Horses for the Whole World." This editorial showed such an ignorance of facts, and such a warping of truth, that it was quite unworthy of the "*Thoroughbred Record*." Its whole tenor was to discredit a scheme that thoroughbred interests of all horse interests should be loyally supporting, and a scheme that I personally believe and hope will be developed under the Agricultural Department in such a way as to prove of unparalleled value to the horse breeding industry of the nation.

To take exception to a few of your statements: Your first sentence—"Uncle Sam has recently embarked in the horse business on such a gigantic scale that it is not improbable the business of private breeders will be seriously affected." Mr. Haggin, in 1907 had a farm and horses beside which "Uncle Sam's farm" would look small, yet would Mr. Haggin's holdings have been considered "gigantic" for a government undertaking?

It is hoped and believe that the business of all private breeders will be affected and affected most favorably, not through the breeding and sale of horses for the army, for only a comparatively few breeders could be engaged in that, but through government disseminated information concerning improved methods of breeding; scientific study of heredity and the laws of breeding; methods looking to the elimination of the enormous waste caused by barrenness of mares and impotence of stallions; the extravagance and loss caused through zig-zag breeding, and also through the use of any but vigorous, sound and pure bred stallions; in short, a campaign of education in animal breeding and heredity that can have no other than a beneficial effect on the breeding industry of the entire nation. If the business of private breeders be not favorably affected, it is realized only too fully that the scheme can never live, for Congress will not be guilty of appropriating public money for something that the voters do not want.

Your second sentence—"He has started what is probably the largest horse farm in the world, a farm of 5,500 acres," etc. Look at the Government farms of France, Germany, Austria and Russia, and note how our little one pales into insignificance. Take the German Imperial Stud at Trakenen. It covers 10,855 acres and is under the management of Baron Von Oettingen, who is the author of that most interesting and valuable book, "Horse Breeding in Theory and Practice." In 1909 there were 1,700 horses at this stud. These included twenty-one stallions of which thirteen were thoroughbreds, one an Anglo-Arab, and the rest half-breds reared at Trakenen, they having a distinct preponderance of pure thoroughbred blood. It is the work of the five imperial studs of Germany to breed stallions for the rural districts. When Germany purchased Ard Patrick and Galtee More at prices approximating \$100,000 each, did she do it for fun, or to compete with private breeders? She purchased those magnificent animals that she might put them in her Government studs, where they could have the best mares the Government money could buy, to produce stallions to send to her rural districts. She thus through the sons of these great horses threw their blood into

every corner of the Empire. Did individual breeders suffer, or profit, thereby?

"He (Uncle Sam) intends to start several (farms) and turn out thoroughbreds by the thousands." The army is in profound ignorance of any such intentions.

"Today the farm is supplying the United States Army with mounts." True, the army is very small—so small that there is one mounted soldier for every 5,000 of our population, yet it is not small enough to be supplied with mounts from "Uncle Sam's farm." The farm has not furnished a single mount to any organization in the army.

"This new venture of Uncle Sam's represents an expenditure of more than \$600,000 with some \$400,000 yet to be spent within the year." I am not informed as to the original cost of land, but Congress has appropriated to be "spent within the year" \$150,000.

You distort and deride the work of Captain Conrad and Mr. Rommel. Do you consider it unworthy of officers of our army to seek to revise and perfect regulations, to study newer and better methods of attack and defense, to work to improve equipment and material that the same may be kept abreast of the time? Is it then unworthy of our officers to devote some thought and study to the improvement of our, as yet, most important weapon the horse? Why then should you endeavor to discredit the efforts of two men whose patriotism in this work cannot be questioned?

You say, "The present farm is just a starter. It has proved so big a success that Uncle Sam is already planning to start at least one more." The present farm is, as you say, a starter. Its success, however, is a matter of hope on the part of the War Department, the Agricultural Department, enlisted men and officers of our cavalry and field artillery, and all public-spirited citizens.

A year or two ago when racing was at a low ebb, you eagerly endorsed General Wood's assertions that as a result of adverse racing legislation our best thoroughbreds were leaving the country in such numbers as to approach a "national calamity." Today with racing improving, you seem to see the specter of "thousands" of government thoroughbreds

with the bottom knocked out of the thoroughbred business, so you are ready to part company with General Wood, and assist in killing his government project. As I see it thoroughbred interests will never suffer as a result of the government breeding farm. In fact they have everything to gain and nothing to lose, as I shall now attempt to prove.

If our government farm proves successful, I hope and believe that it will grow into Germany's scheme. That is, we will have at the government farm a relatively few pure bred stallions and mares carrying the best blood that money can buy. With these animals, selected to a type, we will produce stallions which after being carefully culled over, will be sent to a few communities in our best horse breeding districts, there to be mated with selected and approved mares, these mares as has already been announced, to be registered in a government stud book. Thus with carefully selected, sound, pure bred parent stock in a government stud, we can control and render uniform, the quality and type of all remounts. Is such a consummation devoutly to be wished? For your answer please come with me to every troop and battery in our army and note that they are filled with mongrels and misfits, carrying every kind of blood in the world—a discredit and a disgrace to this great horsebreeding nation. One trooper rides a star gazing half-bred, gotten out of a grade standard bred mare, by an unsound cast-off from the race track; the man by his side rides a feather-legged mongrel gotten by a grade sire out of a pony mare—purchased for the army because their height and weight were according to specifications and because only professional thoroughbred and standard bred horsemen in this country have as yet learned to appreciate the value of pedigree.

What blood should be used at the government farm? Answering this question gives rise to a heated discussion. That excellent horsemen, Mr. Ware outlines perfectly the qualities and characteristics of the ideal cavalry horse, then sees the whole exemplified in his favorite, the standard-bred. Mr. Spencer Borden similarly describes the perfect cavalry horse, and draws therefrom the conclusion that the Arabian only will answer all requirements. General Castleman and other eminent saddle horsemen see in the American Saddle

every corner of the Empire. Did individual breeders suffer, or profit, thereby?

"He (Uncle Sam) intends to start several (farms) and turn out thoroughbreds by the thousands." The army is in profound ignorance of any such intentions.

"Today the farm is supplying the United States Army with mounts." True, the army is very small—so small that there is one mounted soldier for every 5,000 of our population, yet it is not small enough to be supplied with mounts from "Uncle Sam's farm." The farm has not furnished a single mount to any organization in the army.

"This new venture of Uncle Sam's represents an expenditure of more than \$600,000 with some \$400,000 yet to be spent within the year." I am not informed as to the original cost of land, but Congress has appropriated to be "spent within the year" \$150,000.

You distort and deride the work of Captain Conrad and Mr. Rommel. Do you consider it unworthy of officers of our army to seek to revise and perfect regulations, to study newer and better methods of attack and defense, to work to improve equipment and material that the same may be kept abreast of the time? Is it then unworthy of our officers to devote some thought and study to the improvement of our, as yet, most important weapon the horse? Why then should you endeavor to discredit the efforts of two men whose patriotism in this work cannot be questioned?

You say, "The present farm is just a starter. It has proved so big a success that Uncle Sam is already planning to start at least one more." The present farm is, as you say, a starter. Its success, however, is a matter of hope on the part of the War Department, the Agricultural Department, enlisted men and officers of our cavalry and field artillery, and all public-spirited citizens.

A year or two ago when racing was at a low ebb, you eagerly endorsed General Wood's assertions that as a result of adverse racing legislation our best thoroughbreds were leaving the country in such numbers as to approach a "national calamity." Today with racing improving, you seem to see the specter of "thousands" of government thoroughbreds

with the bottom knocked out of the thoroughbred business, so you are ready to part company with General Wood, and assist in killing his government project. As I see it thoroughbred interests will never suffer as a result of the government breeding farm. In fact they have everything to gain and nothing to lose, as I shall now attempt to prove.

If our government farm proves successful, I hope and believe that it will grow into Germany's scheme. That is, we will have at the government farm a relatively few pure bred stallions and mares carrying the best blood that money can buy. With these animals, selected to a type, we will produce stallions which after being carefully culled over, will be sent to a few communities in our best horse breeding districts, there to be mated with selected and approved mares, these mares as has already been announced, to be registered in a government stud book. Thus with carefully selected, sound, pure bred parent stock in a government stud, we can control and render uniform, the quality and type of all remounts. Is such a consummation devoutly to be wished? For your answer please come with me to every troop and battery in our army and note that they are filled with mongrels and misfits, carrying every kind of blood in the world—a discredit and a disgrace to this great horsebreeding nation. One trooper rides a star gazing half-bred, gotten out of a grade standard bred mare, by an unsound cast-off from the race track; the man by his side rides a feather-legged mongrel gotten by a grade sire out of a pony mare—purchased for the army because their height and weight were according to specifications and because only professional thoroughbred and standard bred horsemen in this country have as yet learned to appreciate the value of pedigree.

What blood should be used at the government farm? Answering this question gives rise to a heated discussion. That excellent horseman, Mr. Ware outlines perfectly the qualities and characteristics of the ideal cavalry horse, then sees the whole exemplified in his favorite, the standard-bred. Mr. Spencer Borden similarly describes the perfect cavalry horse, and draws therefrom the conclusion that the Arabian only will answer all requirements. General Castleman and other eminent saddle horsemen see in the American Saddle

the embodiment of perfection for cavalry purposes. The thoroughbreds and the Morgans have their full share of champions. All these worthy gentlemen are sincere in their views and probably none of them realize that what they desire is to make the army a market for the misfits of their favorite breed, a breed in every case produced for a specific purpose and that purpose not for the army. Perhaps I make enemies with all when I make the declaration that not one of these breeds as they stand today is a suitable breed for cavalry purposes. Why should they be, when as I stated above, they have been selected and bred, each with a distinct and well defined purpose and that purpose not for cavalry service.

The thoroughbred is the most perfect specimen of equine excellence in the world. Of all horses he is the unchallenged aristocrat. But he has been bred for the express purpose of running and winning races. He has been perpetuated through the best of his kind, the test of the best being the race course which as Count Lehndorff (from his experience in charge of the German government studs) says is "the only appropriate test, proved by the experience of two centuries." Today however the thoroughbred is being selected more and more to win a five or six furlong sprint, rather than distance races. This encourages the production of a light boned animal with little substance and an animal with such a high strung nervous temperament as to be of little use any place except on the race track. The average present day thoroughbred is not a cavalry horse.

We honor the Standard bred as an American production and one that excels in the purpose for which he has been selected and bred—to win trotting races. His conformation is becoming more and more suited to the trotting faculty, and this is not the conformation of a saddle animal. His back is getting longer which adds to his advantage in stride but detracts from his power to carry weight. His neck is short and thick which makes his training for saddle difficult. Both his trot and his gallop are most fatiguing to his rider. He is a wonderful horse and we all love him, but it is nothing to is discredit for his friends to admit that he is not a cavalry horse.

The beautiful American Saddle Horse excels in the purpose for which he has been selected and bred—pleasure animal and show horse. Is it reasonable to expect him to possess the courage, strength and stamina possessed by the thoroughbred and standard bred, which have had to undergo and survive the grilling test of the race course? And again, his mixed gaits with all the various degrees of speed represented make him undesirable as a cavalry horse.

No one wishes to minimize the many excellent qualities of the Arabian. However without going into reasons, it seems true that in the last 200 years the Arabian has stood still—the thoroughbred is in most ways an improved Arabian.

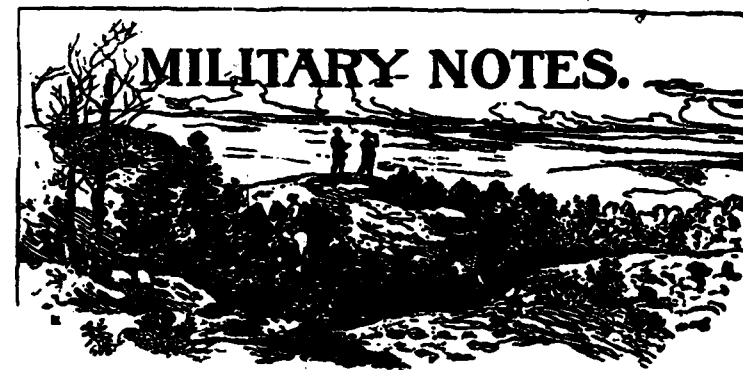
The Morgan is at present a breed in name only. It is hard to separate him from either the standard bred or the saddler with which breeds he has been crossed and recrossed. Is it not true that the standard bred and the saddler owe their excellence to the thoroughbred blood that predominates in their veins? Does it then seem unwise to accept the adopted policy of foreign governments, that of adopting the fountain head of excellence, the thoroughbred, as the blood through which to seek improvement in our army horses?

Bakewell, Bates, Cruikshank, Darwin, Mendel, De Vries and Burbank all teach the utter futility of creating a new breed through crossing. All scientific and practical breeders know how comparatively easy type may be modified through selection. It should therefore be the adopted policy of a government enterprise to take pure bred animals for parent stock and mold them into a better and more suitable army type purely through selection, be this breed thoroughbred, standard bred, saddler, Morgan, Arabian, or even Percheron. Personally I believe the road shorter and more certain of success through the thoroughbred. He has been bred pure longer than any other breed and his pedigree is accordingly more valuable. He should be selected with a view to securing more bone and substance and a better temperament. The stallion selected and purchased for the government farm should be sound and as perfect individuals as possible, also those that have withstood the test of the race course. They should be animals that have been able to carry weight over a distance. Such horses

as these would thus be the grandsires of our remounts. The enterprise would lead to government support of clean and sportsmanlike racing, as in France and Germany, and perhaps would lead to more races like the Kentucky Endurance Stakes and to the establishment of American Classics not surpassed by those of England. As I see it the thoroughbred has much to gain and nothing whatever to lose through this government enterprise.

A number of our most eminent horsemen claim that the army can get any number of suitable horses by paying more money for them. This I do not believe. Our army is so small that its influence in the horse market will never be seriously felt. The production of horses that can run and win will always be the controlling influence in thoroughbred breeding. To produce a stepper in the 2:10 list or better will likewise always be the controlling motive in standard bred breeding, and the production of a fancy priced show horse will govern saddle horse breeding. The army even at much higher prices must always, as now, be supplied with misfits and mongrels from these three breeds, and uniformity, so much to be desired can never be secured until the government takes hold and controls and subsidizes the output for the army.

The scheme now being launched by the Agricultural Department in coöperation with the War Department, will it is hoped, benefit at least a few breeders financially (as liberal prices for remounts must and will be paid); it is further hoped that it will benefit to a degree, all plant and animal breeders, in being an authoritative source of the best and most reliable information concerning improved methods of breeding. Incidentally it will in time arm the American soldier with a horse that he can know is the equal or superior of that in the hands of a possible enemy.



ORGANIZATION FOR ARMY POLO ASSOCIATION.

(APPROVED BY THE SECRETARY OF WAR.)

1. The Army Polo Association shall be organized under the direction of the Chief of Staff for the purpose of developing polo in the army and controlling it for the best interests of all concerned.

2. The officers of the Army Polo Association shall be:

(a) The assistant Secretary of War, who shall be *ex officio*, Honorary President of the Army Polo Association.

(b) The Chief of Staff, who shall be, *ex officio*, the Honorary Vice-President of the Army Polo Association.

(c) The Delegate from the Army to the Polo Association of America, who shall be, *ex officio*, Chairman of the Army Polo Committee and its representative in all dealings with the Polo Association of America, (in case of vacancy to be selected by the Central Committee in consultation with the Polo Association of America).

(d) The Secretary, who shall be appointed annually by the Chief of Staff. The Secretary shall also act as Treasurer of the Army Polo Association.

3. The control of polo in the army shall be vested in the following committees:

(a) The Army Polo Committee, which shall be composed of one Polo Representative from each post or station where polo is played. Each Polo Representative shall be appointed by his Post Commander, and shall transact all business through the Post Commander.

(b) The Central Committee, which shall be composed of one officer of cavalry and one officer of Field Artillery appointed by the Chief of Staff from the officers of those branches stationed in Washington, the Polo Representative from Fort Myer, Virginia, and the Secretary of the Army Polo Association. The Chairman of the Army Polo Committee shall be an active member of the Central Committee whenever he is in Washington.

(c) The several Post Polo Committees which shall consist of the Post Polo Representative (appointed by the Post Commander) a representative from each duly organized Polo Club from organizations stationed at the post (elected by the Club), and the duly elected Captain of each duly organized polo team from organizations stationed at the post (*ex officio* members).

4. The duties of the Post Polo Committee shall be:

(a) To exert every proper effort to further the development of polo in the several posts.

(b) To bring to the attention of the Central Committee all matters requiring the action of the War Department or of the Polo Association of America, and to keep the Secretary fully informed of the progress made in polo at the several posts.

(c) To take prompt action on all matters referred to them by the War Department, the Polo Association of America, through the Polo Delegate, or the Central Committee, to make timely preparations for the entry of teams in tournaments approved by the War Department, and to comply with all arrangements made for tournaments which have been made by the Central Committees.

(d) Not to enter any tournament in which civilians participate without referring the matter to the Chairman of the Army Polo Committee to ascertain whether or not such tournament has the sanction of the Polo Association of America.

5. The duties of the Central Committee shall be:

(a) To submit every matter of interest to Army Polo players to the several Post Representatives and to take no action of importance except in emergencies without first obtaining or attempting to obtain the consensus of opinion of the several Post Representatives.

(b) On or before January 1st of each year to draw up an annual program for Army Polo Tournaments in the United States and to submit such program to the several Post Representatives who shall each, on or before February 1st, return this program to the Central Committee, together with any suggestions or modifications they may desire to submit. This correspondence, together with all correspondence between the Central Committee and Post Representatives, shall pass through the Post Commanders concerned.

(c) Upon receipt of the program as returned by the several Post Representatives, the Central Committee shall embody as many suggestions or modifications as meet with the approval of a majority of Post Representatives and lay the amended program before the Chairman of the Army Polo Committee who shall then confer with the Polo Association of America in regard to any matters which involve the participation of Army teams in tournaments held under the auspices of the Polo Association of America. The Chairman shall then submit the program to the Chief of Staff with the request that it be given the approval of the War Department. Such portion of the program as may be approved by the War Department shall then be published promptly and sent to every Post Polo Representative.

(d) Before such final tournaments the Central Committee shall appoint a sub-committee to manage the details. The captains of all competing teams shall be additional members of all tournament committees.

(e) In its annual program the Central Committee shall include a set of eligibility rules for players and teams which shall, after approval, govern all tournaments for the year and which shall not be departed from except by consent of a majority of captains of competing teams and the approval of the Chairman of the Polo Committee.

(f) In arranging annual programs the Central Committee shall be governed by the following general considerations:

1. That, if possible, some tournament play shall be provided for each regularly organized army team, even though it is impossible on account of expense to have each team participate in such tournaments as may be held to decide the Army Championship.

2. That, if possible, a series of tournaments shall be held for the purpose of deciding the annual Army Championship, which series shall include as many regularly organized teams as possible.

3. That, if acceptable to the Polo Association of America, an opportunity be given for the participation of army teams in the annual tournaments of the Polo Association.

6. The duties of the Chariman of the Army Polo Committee shall be to represent the Army Polo Association in all its relations with the Polo Association of America and to preside at meetings of the Central Committee whenever he may be present in Washington at the time of such meetings.

7. The duties of the Secretary shall be to keep the records of the Army Polo Association and to be custodian of its funds.

8. Assessments. Whenever expenditures are authorized by the Central Committee the Secretary shall notify each Post Polo Representative of the pro rata share required of his post, and the Post Polo Representative of each post shall collect this amount from the supporters of polo at his post. All expenditures shall be limited to the amounts actually necessary to transact the business of the Army Polo Association.

9. The details of this organization may be changed or amended by the vote of the majority of the Army Polo Committee, subject to the approval of the Chief of Staff.

FRENCH OFFICERS AT THE NEW YORK HORSE SHOW.

The Editor:

IN my contribution to your July 1913, number, *in re* Government Horse Breeding in France, I made use of the following expression, p. 43:

"That was a travesty of judgment, in the Charger Glass at the New York Horse Show of 1910, when, a team of French officers who came with well-trained horses, from the great cavalry school at Saumur, Lieutenant Jolibois, riding perfectly a mare that made no mistakes—one of the very horses that won at Olympia in 1912—could get no better than third place."

I was mistaken in the name of the rider. It was Lieutenant de Meslon of the Fourth Dragoons. His mount was the b. m. Amazone; she won at Olympia last year. Coming again to Madison Square this year she was the cynosure of all eyes, and was properly placed in the ribbons.

I enclose herewith a communication from Baron de Meslon in the New York *Herald*, of November 21, 1913, which may interest your readers.

SPENCER BORDEN.

Having found a true sportsmanlike appreciation of their successes at the Horse Show, both from the members of the Association and from the crowds of spectators who have been in Madison Square Garden, Baron de Meslon, Lieutenant of the First French Cuirassiers, who made a tremendous hit on the tanbark with his mare Amazone, yesterday sent to the *Herald* the following:

(Translation.)

"I have already been here once before—for the Horse Show in 1910—and I have kept such a happy memory of the way in which I was received by the members of the Horse Show and

New York society that I was extremely glad when the French Government designated me again to represent the French cavalry.

"In 1910 our horses arrived very late—after the opening of the Horse Show—and the animals were very tired because of the bad crossing. This time we took care to have our horses reach this country a week ahead of time. Thus my comrades and myself have been more successful this year.

"We have had a real pleasure in mounting our horses in the splendor of Madison Square Garden, where there were gathered an elegant throng of spectators, of 'sportsmen' and of pretty women, such as one does not see elsewhere, and we have felt to a marked degree the great sympathy with which each one of our successes has been received.

"In speaking of this permit me to contradict a report which has spread in New York in regard to my excellent little mare Amazone, which has been called the \$30,000 horse. This is very flattering for her and for myself. But I must explain that our Government, like the American Government, cannot purchase horses of great value, and Amazone was bought for only \$300 from a French breeder when she was three years old. Her fine qualities then could only with difficulty be realized. *It was only after a long period of training, according to the system of the Saumur School*, that she really elicited the admiration of 'sportsmen' and has earned me many successes at the contests in France and foreign countries. Not for anything in the world would I sell her, and if the journalists having merely wished to say that Amazone is not for sale, not even for \$30,000, they are right.

"After a brief trip to Niagara and Canada I shall return to France, taking with me once more a charming memory of my stay in New York and the desire to come back again to the Horse Show in 1914."

A NEW METHOD OF TEACHING GUARD DUTY IN THE ORGANIZED MILITIA.

BY J. FRANKLIN MCFADDEN, CAPTAIN FIRST TROOP PHILADELPHIA CITY CAVALRY.

GUARD DUTY both in theory and practice has always been difficult to teach in the Organized Militia from the obvious reasons that it required a great deal from the imagination, and more study at home than experience has found the citizen-soldier willing to give to the subject, so practically all theoretical instruction has to be given at the Armory, and the old method of posting sentries and asking questions was alike tiresome to both the instructor and the instructed, and wasteful in time, as of necessity men had to be separately questioned, and more time units were lost than utilized.

It occurred to the writer about two years ago that this lost motion might be avoided and a new interest created if the principle of competition between individuals could be utilized in the theoretical study of the subject, and having given this method, which I have called the Guard Duty Game, two years trial in my troop, I am convinced of its success in the direction of theoretical instruction. It has resulted in a better general knowledge of the subject, and what is most important, has turned the study of guard duty from a very dull one into an interesting feature.

The plan followed is very simple and as follows:

As the weekly drill period is divided into three equal parts each platoon has half an hour in the ring, and two other periods in theoretical or practical work in other parts of the Armory. At drills when guard duty is one of the subjects, each member of a platoon is provided with a paper box, about five inches long by two and one-half inches wide, numbered with his *own* barrack room number, and inside this box is a smaller one similarly numbered, with a cover fastened on with gummed paper, and having a narrow opening in the top. In the larger boxes are

fifty colored pasteboard counters numbered from one to fifty, about one inch square in size, and of different colors for each of the six squads of the troop.

The squads are paired at a long table, and a man from the right squad plays the game with a man from the left squad. One of the right squad, for example, draws at random from his own larger box a counter and calls out its number. His opponent then asks the question corresponding to that number found in a little book compiled by Captain M. C. Kerth, 23d Infantry, U. S. A., called "Instruction and Problems in Guard Duty for a Private Soldier," (Militia Affairs Circular No. 8). Any series of questions will do but this book furnishes a good list, with answers to each, and is well adapted for use in the Organized Militia, as the author evidently knew the weak spots in the citizen soldier's idea of what is expected from a sentry. If the question is correctly answered, the counter is retained by the man answering, and dropped through the opening into the sealed smaller box. If it is incorrectly answered the opponent takes the counter and drops it in his (the opponent's) sealed box. The process is then reversed, and the two men alternate in asking and answering questions during the allotted period.

No one likes to lose in any game. This is the spur.

The game can be continued throughout the winter until all the questions have been answered and the totals of correct and incorrect answers will place the individual and squad in their order so far as knowledge of guard duty is concerned. Not a minute is lost and everybody in the platoon is receiving instruction, errors are corrected at once and authoritatively, and from being the duller part of our winter's work it has now become a source of interest and even amusement.

I have made this guard duty game a part of the annual competition between the squads.

The principle is susceptible of being applied by the same method to everything in which the quiz can be used as a method of instructing or fixing facts in the memory, and as it can be readily seen there is a great saving of time as well as the securing of a uniform standard of instruction which is always difficult to secure in the Organized Militia.

This account is rather detailed in its character but is purposely so in order that any militia officer can try the experiment for himself. The expense of the paper boxes is only a few dollars and the books cost five cents each, and may be obtained from the Superintendent of Documents, Washington, D. C.

The practical part of guard duty, posting sentries, ceremonies, etc., must of course be actually done, but I know the theoretical instruction is more easily absorbed by the above method than the old way.

If it is desired score cards may be substituted for the boxes. This has the individual's name and date and the subject at the top. On the left a column of the numbers from one to fifty and opposite double columns with a space at the top for the date, and the single columns marked "R" (for right) and "W" (for wrong). The questions may be then selected by using the counters or at the will of the opponent, and the answers whether "R" or "W" recorded in the column opposite. As in golf tournaments the score card is kept and the totals initialed by the opponent. The cards have the advantage of preserving a permanent record and showing where the individual is most in need of instruction, and also enables men absent to make up the competitive work.

It seems to the writer that it would be worth while if one of the Army Service Schools prepared a series of questions and answers in the Drill Regulations, Field Service Regulations, and any other subject which can be taught by quiz, for the use of the Organized Militia, in the same way as the above described guard duty game.

ARMY REMOUNTS.*

Sir:

THE improvement of horseflesh for the army of the United States is being attempted through the establishment of breeding districts under the Department of Agriculture. Stallions of various breeds, thoroughbreds, saddle breds, standard breds and Morgans have been purchased for this purpose and are now stationed in the Central Breeding District with headquarters at Front Royal, Va., and at the Morgan horse farm, at Middlebury, Vt.

The experiment, so far, has been fairly satisfactory, considering the number of mares bred in the three seasons during which the new breeding scheme has been in operation. In 1911, 1912 and 1913, 1,583 mares have been served by government stallions, as follows: 612 by thoroughbreds, 334 by saddle breds, 396 by standard-breds, and 241 by Morgans.

It appears, however, that in the attempt to build up the quality of our horses, one important factor has been omitted: I mean the infusion of Arab blood. If we study the history of horse breeding in European countries, a breeding which is not experimental, but the result of centuries of experience, we find that the Arab blood is the foundation of every great breed and family, and that new infusions of this blood are found necessary from time to time to retain the qualities (stamina, great strength and intelligence and wonderful endurance of lungs and limbs), which have been the characteristics of the Oriental race of horses for centuries past.

The English thoroughbred traces its ancestry back to the three stallions, Godolphin Arabian, Darley Arabian and Burley Turk; the unbeaten race horse, "Eclipse," foaled in 1764, was a descendent on his sire's side of Darley Arabian, on his

*Extract copy of a letter from M. F. DeBarnville of the U. S. Remount Depot at Front Royal, Va., to the Chief of Staff, U. S. Army.

dam's side of Godolphin Arabian. Our own Morgans have a strain of Arabian blood in them and were considered years ago as being among our best cavalry horses; this was before haphazard cross-breeding almost exterminated this interesting race.

In France, 120 pure-bred Arabian stallions and 275 Anglo-Arabs are stationed in the Government "haras," and their colts are much sought after by the officers of the remount department. In Germany, the remount depots of Trakenen and Beberbeck use a number of Arabian stallions; the aim at these studs being to breed for the cavalry a half-bred having 50 per cent. of English thoroughbred blood, twenty-five per cent. of Arabian blood and twenty-five per cent. of native blood.

Austria yearly purchases stallions and brood mares in Syria and these are distributed among the breeding stations of Mezohegyes, Kisber, Babolna and Fogaras; the Gallician horse which has a strong cross of Arab is considered the best cavalry horse in the Austrian army. In Russia, the well known Orloff breed has its origin in the stallions (notably "Smetanka" and "Saltan") brought from Arabia by Count Orloff-Tchesmenki. At the Count's death, the Russian Government purchased from his heirs the entire stud which is now used for breeding the famous Orloff trotters and saddlers. Besides this, the Government stud at Streletsk breeds exclusively from pure blooded Arabian stock. In the Don province the Russian army keeps a breeding establishment where native stock is crossed with horses from Arabia, Asia-Minor and Turkestan.

It has been repeatedly proclaimed that the height of the Arabian horse is against its adoption as a sire of cavalry horses for the United States Army; but I believe that by careful selection of large, well-bred native mares to be bred to Arabian stallions a good sized product would be obtained.

Anyway their small size does not prevent the Arabian horses from being great weight carriers; the French cavalry in Algeria is mounted exclusively on Barb horses, very much like the Arab or Syrian, both being of Oriental descent. I have personally seen these Barb horses, most of whom are under fifteen hands, carry their rider and his packed saddle with five days rations'

for man and horse (a combined average weight of 225 pounds) on an all-day march under the scorching sun over rough mountain trails, and repeat this performance daily for a week at a time without showing any signs of weariness or lameness.

The late Homer Davenport stated that during his trip to Arabia, in 1906, whence he went to purchase some Arabian stallions and brood mares, Mr. Arthur Moore who accompanied him rode a small mare, eight years old, on one occasion this mare carrying nearly 300 pounds covered thirty-five miles in four and a half hours, with the thermometer at 125 degrees.

So much for the weight carrying ability of the Arabian horse; as for its staying power and speed, we may quote from General E. Daumas, who, in his book, "Les Chevaux du Sahara," relates that during the campaign of Algeria, in 1837, the general commanding the province of Oran wishing to have an important message delivered at Tlemcen loaned his own horse, a pure-bred Arab, to a native who rode it one hundred and eighty miles in twenty-four hours. General Daumas also mentions an Arab chief by the name of Ben Zyane, whom he knew personally, and who rode a mare from Medeah to Laghouat in the desert, a distance of about three hundred miles in thirty-six hours.

The Emeer, Abd-el-Kader, one of the greatest chieftains of Algeria before the French occupation, claimed to have kept up a race of several miles with a flock of partridges on his horse "Aouadj."

Similar evidence of the endurance and speed of Arabian horses can be found in the book written by Lady Ann Blunt, whose father, Sir Wilfred Blunt, imported in England several horses from the Orient; also in the late Major Roger D. Upton's book.

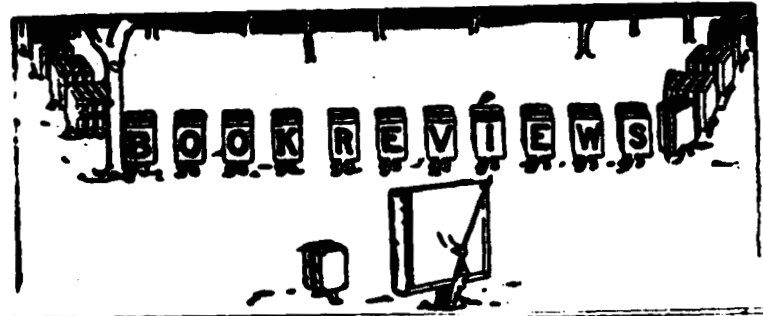
The value of the Arab as a sire of cavalry horses has been demonstrated abroad; would it not be wise to give it at least a test in our new breeding establishment? Infusing this blood in our saddle bred and half-bred mares of good size and bone would add much stamina to these native breeds, and endurance is what is mostly needed in a cavalry mount. I think that the test would convince many sceptics and unbelievers.

There are a number of Arabian stallions and mares scattered throughout the United States, some of which could perhaps be

purchased by the Department of Agriculture. Among these I would mention the ones owned by Colonel Spencer Borden, of Falls River, Mass., Mrs. J. A. P. Ramsdell, of Newburgh, N. Y., and the thirty or so stallions and mares imported by the late Homer Davenport and scattered in various parts of the country at the dispersal sale of the Morris Plains farm, after the owner's death. One of these stallions "Caraveen" is the only living son of the great "Kismet" an Arabian horse sent to race in India and which won every event he was entered in. Mr. R. W. Tully, of Los Angeles, Cal., owns the stallion "Ibn Mahrus," a Seglawi Jedran, bred by Lady Ann Blunt, and there are probably several other Arabs which could easily be located.

I give you the above suggestion for what they are worth, but you may remember that I have always been a fervent partisan of the Arab and Barb, and this because I have seen what they can do in army service, under the most trying conditions and over the roughest country, standing without any apparent discomfort any change in temperature. The French Chasseurs took with them to China in 1900 only Barb horses, two squadrons of the 6th regiment being sent as part of the expedition against the Boxers. These Barb horses stood the rigorous winter of Northern China after coming from hot Africa and very few died, while the fine English horses of the British cavalry suffered greatly from the cold weather and the hardships of the campaign.

* * * *



Technique of Modern Tactics.* A new book on tactics has appeared which, judging from the opinions expressed by those at the Army Service Schools who have read it, will fill a long felt want for the student of modern tactics.

The book came from the press too late for an extended and critical review of it to appear in this number of the CAVALRY JOURNAL.

The following is a synopsis of the contents of the book:

Introduction; Organization of the U. S. Army; Road distances and camp areas; The preparation and solution of tactical problems; Field orders; Patrolling; Advance guards; Rear guards and Flank guards; Marches, changes of direction of march, camps and bivouacs; Convoys; Artillery tactics; Cavalry tactics; Outposts; Combat, attack and defense; Organization of a defensive position; Combat—attack and defense of a river line, withdrawal from action, rencontre or meeting engagements, delaying action, night attacks and machine guns; A position in readiness; Sanitary tactics; The rifle in war; and Notes on division tactics and supply.

"TECHNIQUE OF MODERN TACTICS." A Study of Troop Leading Methods in the Operations of Detachments of all Arms. By Majors P. S. Bond and M. J. McDonough, Corps of Engineers, U. S. Army. Price, \$2.65, postpaid.

The following are extracts from the Introduction:

"The purpose then of this volume is to supply in compact form the help needed by the instructor—or the student working alone—in the applicatory method of study. It is not intended as a text alone; its principal rôle is that of a guide to those engaged in the study of practical problems in tactics, either as instructor or student—for the preparation or solution of these problems. Nearly everything contained in this volume can be found elaborated in special treatises, but time is of value to the military student and this work gives in a single volume authoritatively the data that must otherwise be searched for through a small library. The organizations used in the text are those of the American service, but the tactical principles discussed are of general application. They pertain however, primarily to systematic organized warfare against a civilized foe, and have but limited application to "bushwhacking," guerrilla and savage warfare. Many minor details given in the Field Service Regulations, Infantry Drill Regulations, and other manuals, are of necessity omitted. This volume is not intended to take the place of authorized government publications.

"The apparently deliberate evasion of definite or even approximate statements as to formations, strength, distances, intervals, etc., and the frequent repetition of the phrase, 'this depends upon circumstances,' which characterize many writings on the subjects of tactics, give rise to a desire, frequently expressed, for more specific information on these and similar matters. So far as seemed practicable the authors have endeavored herein to satisfy this desire. This is done with the full knowledge that warfare cannot be pursued as an exact science, and that the endeavor to be specific may in some instances elicit criticism.

"Whatever one attempts he should be familiar with the methods which have characterized good practice in that particular line of endeavor. When confronted with a specific case the individual searches for the underlying principles which find application therein, and it is here that his resourcefulness and originality are called into play. The authors in each case discussed have endeavored to state clearly all the principles which may be applicable, giving at the same time some concrete illustrations in figures, distances, etc., of simple cases. These

illustrations are not to be considered as models or patterns. Their purpose is solely that of illustrating the manner in which stated principles are exemplified by a stated case.

"For the officer charged with the conduct of garrison schools, field maneuvers, war games, the preparation of lectures and problems, etc., it is believed that this volume will form a valuable ready reference. And of equal importance will it be to the officer of the army or militia, compelled for any reason to study alone. To such, the book is a silent instructor, a guide, a critic. To officers preparing for promotion examination, and to those at the Service Schools or in preparation therefor, it has special application."

Signal Book.

We have received from the Office of the Chief Signal Officer a copy of the revised Signal Book for the Army. It is the edition which gives the International Morse or General Service Code which again has been adopted for use in our service. The old American Morse Code is still retained for use over telegraph lines.

The book gives, as usual, full and complete descriptions of the various apparatus used in visual signalling as well as instructions for their use. From it we learn that each troop, battery and company are still to be supplied with flags and it is presumed that a certain number of men in each are still to be instructed in visual signalling with flags.

Spasmodic efforts have been made in our army for the last forty years, to the writer's knowledge, to train one or more men in each organization of the line in this work but, as a rule, without success. However important this instruction may be, it has been carried on in a perfunctory sort of way, like the instruction in packing and First Aid that has been from time to time prescribed for the army, and we will in time of war still have to depend on the signal corps for such work as has been the case in the past.

Visual Signaling.*

This is a small pamphlet—4"x6"—of thirty-four pages which is intended as a guide for the officer having in charge the instruction under this head in a company, battery or troop.

The short preface is as follows:

"This book is not a treatise on visual signaling. Its aim is merely to furnish a system for training men in visual signaling. The system is the fruit of the author's efforts to train men in the company in the use of the flag kit furnished by the signal corps and it is published with the hope that it may be of value to the service."

The work is divided into ten "Lessons" so that the instruction may be progressive and not carried on in a haphazard, any-old-way sort of fashion. In the earlier lessons the more simple combinations are taught and a list of words using them are given for practice. These are followed by the more complex combinations, those for the numerals and the conventional signals. The other lessons cover the general instructions for sending, receiving and recording messages.

On the whole, this work will be found useful to the officer having to instruct in this subject, especially to those who have not had previous experience in teaching it.

"LESSONS IN VISUAL SIGNALING." By Lieutenant M. A. Palen, 25th U. S. Infantry. Paradise of the Pacific Press, Honolulu, H. T. Price unknown.



PREPAREDNESS FOR WAR.

The following extract from the "Introduction" of a recent work by Majors Bond and McDonough, Corps of Engineers, is so *apropos* as regards this subject that it is worthy of notice. While the facts thus so pertinently set forth are and have been well known to the thinking officers of our army, yet they are not known or appreciated by the public at large. It is unfortunate that we have not, at the present time, any means of forcing the attention of the public mind to them. That is the function of the Army League which it is hoped will some day be able to carry on such work.

EXTRACT.

"The almost studied indifference of the American people toward reasonable preparation for the contingency of war makes more urgent the duty of all officers or those who hope to become officers, to do all in their power in advance to prepare themselves and those committed to their care for the immense responsibilities that will rest upon them when the storm bursts upon the nation. The trend of history shows in general a progressive decrease in the length of wars due to the enormous massing of men now possible, and the increasing power of destruction of modern weapons. The decision, in short, is sooner reached. This being the case there is more than ever before a need for adequate preparation in advance of the outbreak of war. The unprepared people or government who now-a-days find themselves on the brink of hostilities with a nation that is trained for the struggle must expect inevitably to pay a severe

national penalty: as witness the recent examples of Russia and Turkey.

"The preparation of a nation for war is of two kinds; one of material things, the constructions of fort, arsenals, fabrication of weapons, munitions, etc., the other the training of its people. And the second is more important than the first, though in the United States the estimate of their relative importance is reversed. The people of the United States are willing to vote immense sums for preparations that concern materiel, but they grudge time or thought devoted to the war training of the fighting unit—the man.

"The best training for war is, of course, the actual experience of warfare, but for practical purposes this school is too limited to be of much assistance to the actors in person. If a reasonable period of peace intervenes between wars the actors of one war are to a very limited extent only those having experience of the previous conflict. Even the general lessons of war are too quickly set aside. How little military knowledge has the present generation of Americans to show for the priceless expenditure of the Nation in the unsurpassed school of the Civil War. Wars are fought by the very young men of the country, and this is true not only of the rank and file but also of the majority of the commanders. The hope of the Nation lies therefore, in its youth, and how shall this youth be trained?

"The duty devolves upon the older officers. There is no higher mission for older officers in time of peace than the systematic development of the talents of the younger officers entrusted to their care. These young officers will be the leaders in the next war and the fate of the nation may indeed depend upon them. The nation therefore, has every right to demand of the superiors that nothing will be left undone that may prepare these youths for the trial. Thus will the superiors be exerting their powerful influence upon the course of the coming war. The methods available are the study of history, working of map problems, and terrain exercises, tactical rides or walks, the war game—all in connection with field maneuvers with troops.

"Correct training for service in campaign must aim to develop the sound characteristics of the individual, rather than

to bind him to a system. The eternal fighting unit being the man, and no two men being created alike, anything which unduly hampers the initiative or self reliance of the officer, though intended as an aid, is in fact a restraint. Hence the caution cannot be too oft repeated that the officer must exert himself to keep aloof from rigid forms or models or precedents because, as in the military service there are no actual equals in rank, so also there is no actual precedent for a military situation. Each situation is unique, as is also the man who meets it.

"Nevertheless in the broad training of large numbers of young men the whims of the individual must not be confused with his sound characteristics, lest the results of his training be as a crop of weeds. Because it is desired to develop the essential traits of each individual's character is not a reason for haphazard instruction or lack of system. Those charged with the education of officers can accomplish broader results if their methods are based on systematic effort with the fundamental idea that the system is an aid to the individual, rather than that the individual is an agent of the system.

"Outside of campaign the officer gets his schooling from the experience of handling men and from individual study. These sources are complementary, neither is complete without the other. The commander receives his education not only in the saddle, but at his desk. It is fortunate that this is so because if out door maneuvers with troops were alone of value, then the greater part of his time would have to be spent unprofitably. And no single effort expended in the peace training of officers will give greater results in the supreme test of war than the inculcation of habits of ceaseless industry.

"On Von Moltke's estimate of the value of tactical problems as a preparation for war we get an interesting sidelight in an incident related of him by a French officer who, prior to the Franco-Prussian War, was on a mission to Berlin. Von Moltke was speaking of the decadence of French military training at that time and he said to the officer: 'Have you even the superficial smattering of the elements of military art? I am tempted to doubt it. I wager that you do not know the most valuable piece of furniture of an officer in garrison. Come

with me' and so saying the old Prussian led his interlocutor into a small bed chamber suitable for a sub-lieutenant, containing a small bed without curtains, three straw chairs, shelves of books from floor to ceiling, and in the center a blackboard on an easel, the floor littered with pieces of chalk. 'It is this,' said Von Moltke, 'that we beat our adversaries every morning, and as for art, here is all we want,' and he exhibited a series of topographic sketches.'"

CAVALRY REORGANIZATION AND DRILL.

We have received several letters from cavalry officers of the grade of captain and higher in which all decry any attempt at reorganizing our cavalry at the present time and especially do they condemn the plan proposed or rather approved and recommended by the Cavalry Board and now about to be tried out in our cavalry service.

While these letters were not intended for publication—the tone of some of them unfits them for reproduction, even if they were so intended—yet the liberty is being taken of quoting from some of them.

As regards the subject of drill, many of these officers state that our present Cavalry Drill Regulations do need revision, and along the lines of the excellent Infantry Drill Regulations, yet they do not favor the proposed double rank formation and the scheme for having the old time squadron of two troops, commanded by the senior captain.

EXTRACTS.

"There have recently been put into effect measures looking toward establishing our cavalry on the lines of that of Europe. While naturally ascribing to the champions of these measures an honesty of convictions, there exists in the mind of the remainder of the cavalry, possibly as much as ninety per cent. or more, that some points have more or less been overlooked.

"Although research has been far from complete, I beg to submit the following quotations from recent European sources which seem peculiarly pertinent to the situation and which, so far as known, have not received the eminent consideration of our present reformers.

"From *Cavalry Studies* by General Haig, of the British service, the best book on cavalry tactics now in print, published in 1907, at page 66:

"This known physiological fact, namely, that the physical shock hardly ever takes place, should help to determine the conduct of cavalry. Only combats unscientifically entered into end in a *mêlée*."

"In other words, actual contact indicates unskillful leading.

"From 'On War of Today,' the latest Clausewitz, by General Von Bernhardi, himself an eminent cavalry general, published this year, in Vol. II, at page 452:

"The low estimation in which it is everywhere customary to hold this arm (cavalry) today is solely due to the fact that people insist upon wishing to use the cavalry as an arm for battle and for charging, while they do not understand how to use it strategically, nor have organized it at all with that object. But that it can be employed in this sphere to the greatest advantage, and can also conduct a vigorous fire-fight without being unduly hampered by its horses or losing them, is sufficiently proved by the American War of Secession and by the South African War."

"As indicating what is now being done in Germany in a practical way, the following synopsis of an article taken from a Berlin, Germany, daily newspaper, October 26, 1913, is cited:

'THE END OF THE SABER.'

"It is the intention of the War Department to shortly issue automatic pistols to all of the mounted Jagers for experimental purposes. The belief is spreading that the saber should soon be done away with in all cavalry regiments, because it is a nuisance for dismounted work and its value as a weapon mounted is of a doubtful quantity. It undoubtedly adds to the weight on the horse more than a pistol; the pistol is of equal or greater value as a weapon for a mounted man and can be used instead of a bayonet for dismounted work."

"If there be any merits in the foregoing citations, it would seem that the charge frequently made against us, to the effect that we adopt what others cast into the discard as worn out or useless, has some foundation."

"In view of the prominence that has been given to the experiments carried on this past summer at the Winchester Virginia, Cavalry Camp of Instruction, to the glowing accounts of success of the work as sent out from certain sources, and to the resultant view which is apparently being created, to the effect that practically all the officers present approved the work of the camp, we have made inquiries on the subject and state our conclusions, as follows:

"The majority of officers present at the camp felt that considering the political situation the holding of the camp was unnecessary and unwise.

"That tampering with our organization at this time is unwise.

* * * * *

"That in assembling such a large force of cavalry, their drill in double rank only to the exclusion of applied cavalry work proper was an occasion of wasted opportunities.

"That instead of ninety per cent. of the officers there present concurring in the results and satisfaction of the Board, probably that number were of the contrary view.

"In fact, the case was summed up by one officer present who said: 'There are only two views in the camp; one is held by a majority of the Board; the other is held by everybody else.'"

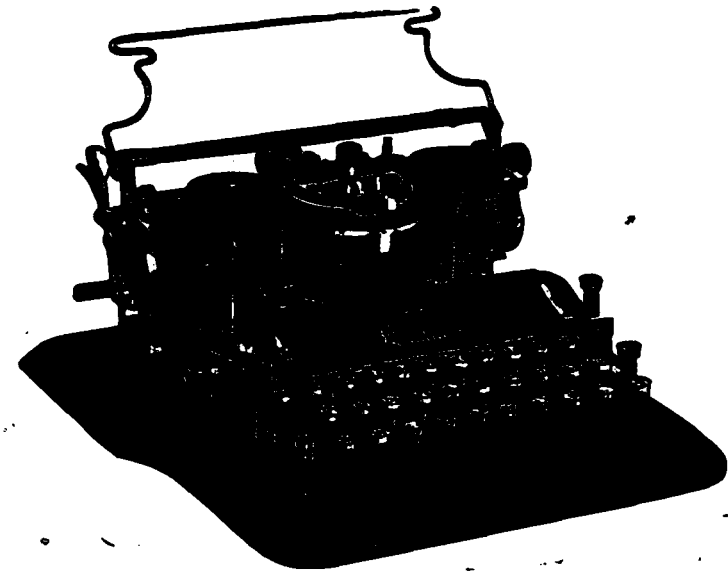
"Somebody should call attention to the fact that only four field officers of cavalry are in favor of reorganization." * * *

"Gresham's article seems to have caused quite a stir. Others along the same line are to be expected.

"The attitude of the two virile young cavalymen just returned from Europe is most gratifying. They claim that the Europeans are all off when it comes to the use of the principal weapon, the rifle.

"You will observe that the advocates of the French drill compare it, not with an up-to-date revised American drill, but with the old drill written twenty-five years ago."

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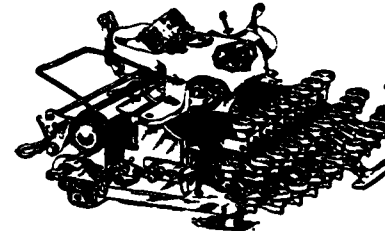
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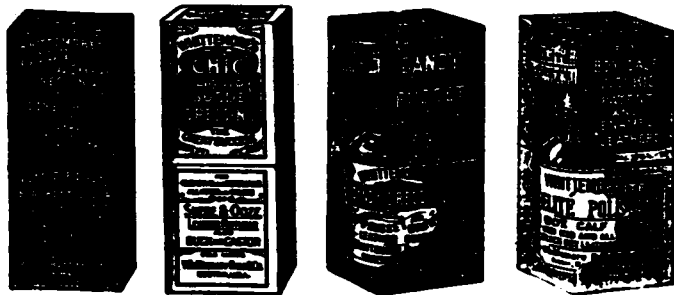
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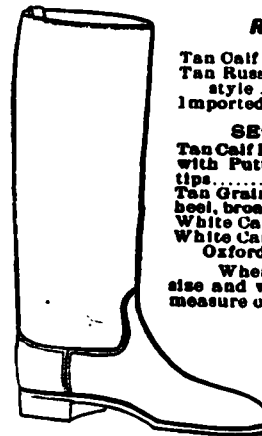
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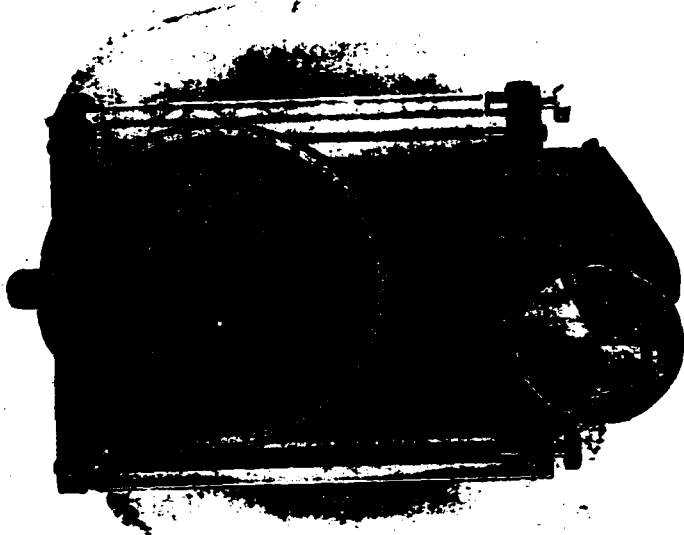
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CAVALRY INSTRUCTION.*

BULLETIN }
No. 18.

WAR DEPARTMENT,
Washington, October 3, 1912.

With a view to standardizing the instruction imparted at the Military Academy and at the various service schools on the subject of the employment of Cavalry, the following is announced as the policy of the War Department in respect to the use of that arm:

1. Mounted action is the main role of the cavalry arm and its organization, armament, and instruction should be with a view to rendering it effective in such action.

Dismounted action is, however, a very important role of the cavalry, and neither an organization nor the method of instruction which falls to provide for the effective use of cavalry dismounted will enable it to perform fully its functions in war.

2. The organization should be such as to permit of the greatest mobility, which is the essential quality of the cavalry, while providing units of great smashing power in the charge and a sufficient number of rifles to make effective its use when required as a dismounted force.

3. Cavalry must maneuver freely and widely without fearing too much for its rear; and being often at a distance from the main body of an army, its commander must be clothed with authority to conform to actual conditions.

*Reprinted by request of the Chief of Staff of the Army.

4. While the chief task of the cavalry is to assist the other arms in accomplishing the common object, its role is often of primary importance. The action of cavalry must be bold and daring; it must, whenever practicable, assume the initiative, seeking out the enemy and placing him upon the defensive.

5. The principal weapon of cavalry in mounted action is the horse and the force of impact should be utilized to the utmost. The terrain and nature of the operations will determine which of the other weapons must be used.

6. When circumstances permit, cavalry opposed to cavalry should fight mounted, thus retaining the mobility and power of maneuver necessary to its security and success.

7. The historical value of cavalry, including the experience and evolution of our own and that of other countries, must be carefully studied, and due consideration should be given to the greater magnitude of our future cavalry operations as compared with our experiences since the Civil War.

8. The use to which cavalry should be put in campaign is summarized as follows:

- a. To seek and destroy the enemy's cavalry.
- b. Screening, contact and reconnaissance.
- c. Seizing and holding important advanced or isolated positions, thus delaying the advance of the enemy until the arrival of the other arms.
- d. To operate on the flank and in rear of the enemy.
- e. Raids and other enterprises require great mobility.
- f. The mounted charge at the opportune moment against Infantry or Field Artillery.
- g. Energetic pursuit of a retreating enemy or covering retreat of its own forces.
- h. When none of the above roles has been assigned to it, cavalry may go to the assistance (dismounted) of hard pressed infantry to fill gaps in the firing line.

By order of the Secretary of War:

W. W. WOTHERSPOON,

Official:

Major General, Acting Chief of Staff.

GEO. ANDREWS.

The Adjutant General.

THE RICHMOND RAID OF 1864.

BY MAJOR GENERAL GEORGE B. DAVIS, U. S. ARMY.

THE Cavalry Corps of the Army of the Potomac was a more efficient fighting machine at the beginning of the Wilderness Campaign of 1864 than it had been at the opening of the Chancellorsville Campaign of the preceding year; but it had not been materially increased in strength, nor had its composition been changed in any essential respect. Of its old division commanders Gregg alone remained; Averell had been relieved more than a year before and had recently been assigned to the command of a division of cavalry in the Valley of the Shenandoah; Buford, in many respects the ablest leader of them all, had died at the close of field operations in 1863 as the result of hardship and exposure, in which he had never spared himself, or failed to score whenever he came in contact with the enemy. Buford had been replaced by General Torbert, an officer with an excellent infantry record, and Averell had been succeeded by Gregg, while General Wilson, who had served with distinction under the Lieutenant General in operations about Vicksburg, had relieved General Kilpatrick in the command of the Third Division and was now to exercise, for the first time, the command of a general officer.

General Pleasanton, who had been identified with the cavalry of the Army of the Potomac from the first, and who had commanded the corps for a little more than a year, was replaced by General Sheridan, who had been selected by General Grant to accompany him to his new field of military duty in the east. Of the new commander but little was known. The Army of the Potomac had but little first hand knowledge of the relative abilities of any but the generals in chief command of the armies in the west. During the season of active operations General Lee kept them fully employed, and the summer opera-

tions—east and west—had become history before the army settled down into its cantonments for the winter, where the discussion of past and future operations could be intelligently carried on. For that reason General Sheridan was something of an enigma to the officers and men of the Army of the Potomac, when early in April, he assumed command of the Cavalry Corps at Brandy Station. Although no one was able to speak with full knowledge on the subject, it was assumed that General Grant knew what he was about in bringing General Sheridan from the west, and it was discovered, after the operations were well under way, that the Lieutenant General had made no mistake in his choice of a commander for the Cavalry Corps; which was to work as it had never worked before, but it was now to work to some definite advantage and, contact once gained with the enemy's cavalry, was not to be lost until the corps threw itself across General Lee's path at Appomattox Court House and forced the surrender of the Confederate Army of Northern Virginia.

At the beginning of the campaign the cavalry was stationed along the Orange and Alexandria Railroad, the greater part of it in the vicinity of Stevensburg* and Brandy Station, where its headquarters were established. Two divisions were in the upper waters of the Rapidan, where a line of outposts twenty-eight miles in length was maintained, with a strong outlying post at Hartwood Church, a short distance above Falmouth. Gregg's division was at Warrenton to the right and somewhat to the rear of the infantry. Too much outpost duty had been required of the cavalry during the winter, and both men and horses were not in the best condition for the field service upon which they were about to enter. General Sheridan largely reduced the force thus employed, but too late to restore the command to proper condition for work in the field.

General Lee had gone into winter quarters on the south bank of the Rapidan, not far from the position occupied by him at the close of the Mine Run Campaign in December of the

*See map facing page 537 of the January, 1914, number of the CAVALRY JOURNAL for the location of this and nearly all other places mentioned in this article. It is to be regretted that, in reproducing this map, the mistake was made of reducing it too much, thereby making it very indistinct.

preceding year; his right was in the vicinity of Mine Run and his left on the Rapidan, not far from Orange Court House, where his headquarters were located. Longstreet's Corps had been absent since the battle of Chickamauga, but had returned just as the operations began, and took an important part in the Battle of the Wilderness. Stuart's Cavalry had been somewhat scattered during the early spring, with a view to supplement its uncertain forage ration by such grazing as was afforded at that season in the upper valley of the Rapidan.

Although a little stronger on paper (15,000), than it was at the opening of the Chancellorsville Campaign, the corps was considerably more powerful as a fighting machine than it had been on the Stoneman Raid of 1863. Its work under Stoneman had been of the greatest value to such of its officers as were called upon to exercise the higher grades of military command. The series of engagements from Kelly's Ford to Gettysburg had been fruitful of results in all the details of the field service of cavalry—mounted or on foot; charges had been made, battles had been fought on foot, culminating in Gregg's repulse of Stuart, on the last day of the battle of Gettysburg, in what was intended to be the supreme effort to turn Meade's right flank and thus add to the embarrassments of an already difficult situation. The captains, many of whom had now had over two years service, had become able and experienced troop and squadron commanders; the field officers who were in the constant exercise of regimental command had also benefitted by the gruelling experience through which they had passed, and were able to acquit themselves creditably in the performance of the difficult and exacting duties that were about to be required of them by their new and energetic commander.

The problem of advancing on Richmond, which had confronted McClellan, Burnside and Hooker, still confronted Grant and Meade as they counselled together at the headquarters at Brandy Station. Two lines of advance still presented themselves; that through the open country, by Gordonsburg, appealed strongly to the commanding generals, while that by Fredericksburg appealed still more strongly to the administration. As the balance of power was with the President, the main line by the Wilderness and the lower Rapidan was chosen,

and General Grant addressed himself to the task of bringing the Army of the Potomac, and the Army of Northern Virginia as well, on the new line of operations. The new commander was to follow the route of his predecessors, but with an important difference; there was to be no return ticket for his plans called for a direct passage to the Confederate capital and, when thousands of dead and wounded lay in the impenetrable Wilderness, bearing silent testimony of the difficulty and danger of the route, came the grim reply of the Lieutenant General that he proposed *"to fight it out on this line if it took all summer."*

In the campaign of 1864 it was General Grant's intention, by a series of large turning movements, to force General Lee back in the general direction of Richmond. The first of these had for its object to oust the Confederate Army from its winter lines along the south bank of the Rapidan, and May 4th was fixed upon for the beginning of this operation. As both armies had been in winter quarters for several months, they had become less mobile and more encumbered with baggage and impedimenta than was consistent with the work upon which they were about to enter. In the old days of the Navy a ship which had remained at anchor for a considerable period of time was said to be "aground on her bones," and such indeed was the condition of the troops that were so soon to measure strength with the enemy in the Wilderness. To restore mobility, the several corps were broken out of their winter huts and placed in camps where they could be inspected with a view to ascertain their fitness for immediate field service.

The preliminary concentrations were accomplished without particular difficulty and, on May 4th, the several corps composing the Army of the Potomac were put in motion for the Rapidan. The Second Corps, preceded by Gregg's cavalry, crossed at Ely's Ford on two pontoon bridges which had been laid under the skillful direction of Major Duane, the Chief Engineer of the army. The Fifth and Sixth Corps, following Wilson's division, crossed at Germanna Ford. The Ninth Corps moving from its bivouacs on the line of the Orange and Alexandria Railroad on the 4th crossed at Germanna Ford on the following day and proceeded to Chancellorsville, where it took position on the left of the army. When the duties in connection

with the crossing with which General Wilson was charged had been performed, he pushed out on the plank road in the direction of the Old Wilderness Tavern, an impossible house of entertainment for man and beast on the Fredericksburg Pike near the crossing of Wilderness Run. From that place scouting parties were sent toward Parker's Store, from which point, a little later in the day, a strong reconnaissance under Colonel Hammond of the 5th New York Cavalry was sent toward Mine Run to ascertain the positions and movements of the enemy; but no enemy was discovered save a few outposts on the Orange and Fredericksburg turnpike near the crossing of the Run.

On the morning of the 5th Colonel Hammond was again sent toward Parker's Store, while General Wilson, with the main body of the division, advanced in the direction of Craig's Meeting House, on the Catharpin Road a few miles to the southwest of Todd's Tavern, an old and dilapidated inn, still standing at the junction of the Brook and Catharpin Roads, which was shortly to be the scene of considerable hard fighting, in which both cavalry and infantry were to be engaged.

In the tangled jungle which goes by the name of the Wilderness it is easier to engage a command than to disengage it. Hammond was attacked beyond Parker's Store by a force composed, in part, of infantry; his command, which was armed with Spencer rifles, offered a stubborn resistance to the enemy but was steadily pushed back. General Crawford of the Fifth Corps was urged to advance with his division to relieve the pressure upon the cavalry but made no response. The situation was relieved, however, by the timely appearance of Getty's division of the Sixth Corps. Chapman's Brigade, advancing in the direction of the Meeting House, encountered Rosser's Brigade and, after an obstinate engagement, succeeded in forcing it to retire. As the ammunition of a portion of his command had been exhausted and as his orders in connection with the movement of the infantry had been fully executed, General Wilson determined to retire in the direction of Chancellorsville. At Todd's Tavern he found Gregg's division in order of battle and formed his division to assist in holding the position. Wilson was not seriously engaged on the 6th, save in a reconnaissance to determine the position of the enemy.

On the 7th a brigade was sent to the right of the infantry for a similar purpose but was unable to find any indications of force in that quarter; the road to Germanna Ford being still open. On the morning of the 8th, Wilson's division was ordered to Spottsylvania Court House with instructions to reach Snell's Bridge on the Ny River. At the Court House Wickham's Confederate brigade was encountered and driven back with a loss of fifty prisoners. McIntosh was also engaged in the same vicinity with a force of the enemy which afterwards turned out to be a portion of Longstreet's Corps. The occupation of Spottsylvania Court House was an important incident in the Wilderness Campaign and it is a matter of regret, on many accounts, that the support which Wilson had been led to believe would be afforded him by the Ninth Army Corps was not furnished. In obedience to orders from General Sheridan, Wilson withdrew to Alsop's. On the following morning he moved to Tabernacle Church, on the Fredericksburg turnpike, where he joined the main body of the corps under General Sheridan.

Gregg who had preceded the Second Corps in the crossing at Ely's Ford, advanced by way of Chancellorsville to Alrick's on the Fredericksburg Plank Road. On the 5th he moved to Todd's Tavern, where he formed up in support of Wilson and contributed to the defeat and pursuit of the enemy. The skirmishing continued throughout the entire day of May 6th, without anything in the way of a decisive result. On the following day Gregg was reinforced by the First Division under the temporary command of General Merritt, and immediately engaged the enemy near Todd's Tavern and defeated him, all the fighting being on foot. Some heavy skirmishing took place on the 8th, on the road leading to Shady Grove Church, in which one of Gregg's brigades took part. Towards evening of the 8th the division marched to Silver's House where it joined the command under General Sheridan.

Torbert's First Division crossed at Ely's Ford at midnight on May 4th and followed Gregg to Chancellorsville, where it remained in position on the left of the infantry until it moved to the Furnaces, about two miles from Todd's Tavern, where a connection with Gregg was established. On the evening of the

7th the Regular Brigade of Torbert's Division encountered the enemy in the vicinity of Todd's Tavern, in coöperation with Gregg, and succeeded in driving him for some distance in the direction of Spottsylvania C. H. On the 8th Gregg advanced with his entire division to the Court House, with a view to take up a position there; before reaching it, however, he became heavily engaged with the dismounted cavalry and infantry of the enemy, but persisted in his advance until he was relieved by Robinson's Division of the Fifth Corps. The losses on this occasion were extremely heavy, Captain Ash of the Fifth Cavalry being killed and Major Starr and Captain E. V. Sumner wounded, the former seriously. On the evening of the 8th Merritt joined the main command at Silvers.

Two short reports are all that remain to tell of the participation of the Confederate cavalry in the operations of the Wilderness Campaign; one of them by General Wade Hampton, commanding the First Division of Stuart's Cavalry Corps, the other, hardly more than a dispatch, was furnished by General Rosser and relates exclusively to the engagement at Piney Branch Church on May 15th; in addition to these there are two dispatches, one of seven lines by Captain Kennon, and one of two by Colonel Bradley T. Johnson of the First Maryland Infantry (Confederate), advising the Secretary of War that General Stuart had engaged the enemy at Ashland, on the morning of the 11th and had driven him out without loss, which was not entirely true. The railroad at that point was destroyed, with some railway material, by a portion of Davies' Brigade, the entire undertaking being accomplished without serious loss. It is now known that Stuart's Corps consisted, at the opening of the campaign, of three divisions commanded, respectively by Generals Wade, Hampton, Fitz Lee and W. H. F. Lee, whose division, consisting of six regiments, was the smallest in the corps. Save in the case of unexpected encounters with portions of Stuart's command, which were of frequent occurrence while the troops continued to operate in the Wilderness, due to the absence of roads and the dense growth of scrub, most of the cavalry fighting was brought on by Stuart, always dismounted, and frequently supported by infantry. The watchfulness of the great Confederate cavalry commander was never remitted

for a moment, and the least misstep on the part of a Union brigade or division commander caused him to feel the heavy hand of his alert and resourceful opponent.

In such a terrain as that presented in the Wilderness the mounted employment of cavalry was simply impossible; in fact such employment was not attempted, and the troops engaged at Parker's Store, Todds' Tavern, and Craig's Meeting House, were dismounted, save in the case of a few mounted attacks in the vicinity of the Meeting House, where the ground was somewhat more favorable for the mounted employment of the arm. During the operations in the Wilderness proper, it must be conceded that Stuart missed no opportunity to do battle with Sheridan, and his lines were, as a rule, as long and well manned as those of his adversary. The constant proximity of the Confederate infantry enabled Stuart to call upon it for support when portions of his command found themselves in difficult or critical situations. In Wilson's operations about Parker's Store and Craig's Meeting House the enemy had the advantage that attends superiority of numbers; in those about Todd's Tavern the Union cavalry was successful for the same reason.

The concentration of the cavalry at Alrich's grew out of a misapprehension on the part of General Meade as to the relative positions of the enemy's troops and his own. In the belief that the Alrich place was within the lines of the Army of the Potomac, the great army trains were ordered to go into park at Piney Branch Church, a short distance from Todd's Tavern on the way to Spottsylvania C. H. This order was communicated to General Sheridan and, as the church was in the possession of the enemy, it became necessary to halt the trains at Alsop's while ground was being gained in the direction of the Church. This succession of events led to the engagement at Todd's Tavern on the 7th, the most severe encounter in which the cavalry was called upon to take part during the early stages of the campaign.

General Sheridan's entire command was now concentrated at Alrich's on the Fredericksburg Plank Road, where orders were received from General Meade to go out and engage the cavalry of the enemy. The corps consisted of three divisions of cavalry

now about ten thousand strong, with several batteries of horse artillery, under the command of Captain James M. Robertson.

General Sheridan's estimate of his command and of the work upon which it was about to engage is extremely interesting. The officers and men, he says, "were in pretty good condition, so far as health and equipment were concerned, but their horses were thin and very much worn out by excessive and, it seemed to me, unnecessary picket duty, the picket line almost completely encircling the infantry and artillery camps of the army, covering a distance, if stretched out on a continuous line, of nearly sixty miles. The enemy, more wise, had been husbanding the strength and efficiency of his horses by sending them to the rear, in order to bring them out in the spring in good condition for the impending campaign; however, shortly after my taking command, much of the picketing was done away with, and we had about two weeks of leisure time to nurse the horses, on which so much depended; consequently, on the 4th of May, when the campaign opened, I found myself with about ten thousand effective men and the same number of horses in passable trim. After carefully studying the topography of the country from the Rapidan to Richmond, which is of a thickly wooded character, its numerous and almost parallel streams nearly all uniting, forming the York River, I took up the idea that our cavalry ought to fight the enemy's cavalry, and our infantry the enemy's infantry. I was strengthened in this impression still more by the consciousness of a want of appreciation, on the part of infantry commanders, as to the power of a large and well managed body of horse; but as it was difficult to overcome the established custom of wasting cavalry for the protection of trains, and for the establishment of cordons around a sleeping infantry force, we had to bide our time."*

As there was sufficient ground for the operation of a large force of cavalry between the right flank of the army and the Rappahannock, General Sheridan determined to pass around General Lee's right and place his command to the south of the North Anna River before giving battle to the enemy. The belief that forage for the animals was to be found in that region

*Official Records of the Union and Confederate Armies, Vol. XXXVI, Part I, p. 787.

and that Stuart would be met there without infantry support, strongly favored the plan which was immediately carried into effect. The corps moved on the morning of the 9th taking the road to Fredericksburg as far as Massaponax Church, where the telegraph road was reached and it turned sharply to the south. The command marched in a single column of fours, at a walk. as the country did not permit of the march of columns on parallel roads. Indeed there was but a single road, if it could be called such, which ran in the direction of Richmond; to call the other pathways for men and beasts "roads" was to give them standing as means of communication to which they were by no means entitled. As the only danger to be apprehended was from the rear, it was not necessary for the command to assume a formation which would facilitate deployment to the front, or to either flank.

Stuart, ever watchful, soon satisfied himself as to the nature of the movement and pushed forward in rapid pursuit—so rapidly in fact as to overtake Sheridan's rear brigade just at night fall. An attack was promptly delivered, but was repulsed without delaying the march of the column, the head of which reached the crossing of the North Anna at Anderson's Ford. Early in the day Custer's brigade had been sent to Beaver Dam Station where the station buildings, considerable railway material and a large quantity of subsistence, estimated at ten days rations or Lee's entire army were destroyed. Gregg and Wilson, who had encamped on the north bank of the stream, were attacked by Stuart, with cavalry and artillery, just as they were about to cross on the morning of the 10th. These attacks were repulsed without serious loss and the crossing was effected without further mishap.

The maxim that "a stern chase is a long chase" is as true on land as on the sea, and Stuart now discovered that he must adopt some other plan than that of attacking the rear guard if the steady advance of Sheridan was to be checked, or even impeded. To that end he left the Negrofoot Road, on which Sheridan was advancing, and succeeded, by heavy forced marches in reaching Yellow Tavern, a point on the Brook turnpike about six miles to the north of Richmond, in time to dispute Sheridan's approach to the Confederate capital. The march of the raiding

column had not been materially interfered with during the day of the 10th and it became possible to collect some forage and subsistence for the command in a region which had thus far been exempted from the hardships of war. Indeed it was not until Yellow Tavern was reached that it became possible for a decisive trial of strength between the contending forces.

Stuart had hardly gotten into position at Yellow Tavern when he was attacked by Merritt, who had succeeded in gaining the Brook Road, whereupon Stuart reformed his line a few hundred yards to the east of the turnpike and was enabled to subject the enemy to a severe enfilading fire.

He was held firmly in line, however, by the brigades of Devin and Gibbs, while Custer led a mounted charge, supported by Wilson and one brigade of Gregg's division. The charge was brilliantly executed, first at a walk, then at a trot and finally at a gallop, capturing the enemy's guns and then riding over his line, which had received the charge in line of battle and at a halt. In this engagement Stuart, while endeavoring to reform his line and ward off the impending disaster, received a mortal wound from the effects of which he died, several days later, in the city of Richmond. The sorrow and distress occasioned by his death were deep and widespread, extending beyond his command in the Army of Northern Virginia to the people of the entire South who saw in his death, as in that of Jackson, a calamity from which the Confederate cause was hardly likely to recover.

As the immediate result of Custer's charge the enemy's line was broken in two; one part retreating to the town of Ashland, the other toward Richmond. A reconnaissance sent along the Brook Pike in the direction of the latter place crossed the South Fork of the Chickahominy and succeeded in entering the exterior line of defensive works. This party was followed by the main command, which, turning to the east was massed at Meadow Bridge at daylight of the 12th, having encountered on the way a number of land mines buried in the surface of the roadway, some of which were exploded by contact with the passing column, causing the loss of a number of horses. Wilson came upon the artillery of the enemy at daylight, along the Mechanicsville Pike, which operated to stay his march for the

moment. Custer was ordered to cross to the north bank at Meadow Bridge, which was found to be destroyed. Merritt's Division was then assigned the task of putting the bridge in repair, which was accomplished, under a heavy fire from the enemy's artillery. As soon as the bridge was reported as passable, Merritt's Division crossed dismounted, driving the enemy from his works; the pursuit was continued to Gaines Mill. The side expedition to Ashland was less fortunate; a portion of Davies' Brigade became engaged there and, without sufficient consideration, attempted a charge; the command chiefly engaged—the First Massachusetts Cavalry—lost severely, among others three commissioned officers.

While the main command was picking its way between the lines of defensive works the force in their front was reinforced from the garrison of the city, the weight of the attack coming on Wilson and Gregg. Wilson was forced back, but Gregg rallied to his support and compelled the enemy to seek shelter behind the inner line of works. Robertson's excellently handled artillery contributed powerfully to the repulse. The attack from the direction of the city having been driven back, advantage was taken of the lull in the operations to find some practicable fords in the upper reaches of the Chickahominy. These efforts were successful, and in the late afternoon of the 12th, the remaining portion of the command crossed the Chickahominy and encamped in the vicinity of Walnut Grove and Gaines' Mill. On the 13th, Bottom's Bridge was reached and, on the following day, the White Oak Swamp was passed without opposition and the command encamped at Haxall's Landing, near Malvern Hill, on the north bank of the James.

Six days had been consumed in the operations of the raid. The daily marches of the corps had averaged 18 miles; the longest march on any one day being thirty miles. The losses in killed, wounded and missing amounted to 625, and these, added to those incurred in the battles in the Wilderness (710) carried the grand total to 1,335—not far from ten per cent. of the fighting strength of the command. The loss in horses most of which were shot to prevent them from falling into the hands of the enemy—for they were simply "played out" and could be recruited and restored to duty by two weeks rest—

is said not to have exceeded 300, and General Sheridan himself made it 250, not far from three per cent. of the total strength of the horses belonging to the Corps. As in most cavalry operations—during and since the Civil War—the new horses were found to be the least able to endure the hardships of incessant marching, and easily gave way to overwork on an insufficient forage allowance. On its next important operation—the Trevillian Raid—the losses were considerably greater, aggregating 1,512 in killed, wounded and missing, as contacts with the enemy were more frequent and, on the Confederate side at least, more stubbornly contested. From the loss sustained in General Stuart's death the cavalry of the Army of Northern Virginia never wholly recovered. It continued to be a force to be reckoned with during the remaining months of the war, and was well handled by its able commanders, Fitz Lee and Hampton, but its severe losses in men and horses deprived it of the formidable character which it had maintained since it fell under the skillful leadership of General Stuart at the outbreak of the Civil War.

After the troops had been rationed and the command supplied with forage, and to some extent refitted, General Sheridan addressed himself to the duty of planning his return trip, a task beset with difficulties. When Sheridan reached the James River it is quite safe to say that he had not the faintest idea of the position of the army which he had left eight days before. Of the last stages of the conflict in the Wilderness he knew nothing; he had no means of knowing that the battle of Spottsylvania had been fought, or that a battle in that vicinity was contemplated by the commander of either army; its subsequent fortune in the turning movements above and below the North Anna were equally unknown. This was a serious handicap, as the position of the Army of the Potomac was his immediate objective, and should have been known, at least approximately, before he could plan the route of his return march with any certainty. The road taken in his southward march, or one parallel to it, was obviously impossible, for, as we have seen, it abounded in obstacles, many of which were susceptible of an obstinate defense, which would operate to delay if not to prevent, his junction with the main body of the army.

It was finally determined, however, to make for the White House, a holding of the Lee family on the Pamunky River about due east from the city of Richmond and far enough away to avoid the swamps, soft bottomed streams and other obstacles that abounded along the upper waters of the Chickahominy. The White House was also in a fairly open country, and the enemy, should he venture to attack, could be met on something like equal terms.

The return march was therefore begun on the morning of the 17th; the Chickahominy was passed at Jones Bridge and Baltimore Cross Roads was reached on the following day.

As soon as a point of destination had been determined on, the necessary movements were ordered. Custer was sent towards Hanover Court House with a view to the destruction of the bridges across the South Anna River; Gregg and Wilson were ordered to demonstrate in the direction of Richmond, as far as Mechanicsville, to cover the movement of General Custer, while Merritt was to remain at the Cross Roads. Out of an abundance of caution a pontoon bridge was ordered up from Fortress Monroe for use in crossing the Pamunky at the White House, but this precaution was subsequently found to be unnecessary. Custer encountered a considerable force of the enemy in the vicinity of the South Anna bridges after the object of his expedition had been partially accomplished. Gregg occupied Cold Harbor but nothing of importance occurred; he returned to Baltimore Cross Roads on the 20th where the command remained until the 22d, when it marched to the White House. Wilson with the Third Division followed substantially the same route and reached White House on the same day.

It was found that the White House Bridge had been very imperfectly destroyed, the heavily timbered structure remaining almost intact, only needing a floor covering in order to make it passable for troops. Heavy details from Merritt's Division scoured the country in the immediate vicinity for planks and boards, each trooper bringing his individual contribution to the work on his horse. So diligently was the work prosecuted that the planking was relaid in one day and, Gregg and Custer having returned, the crossing began on the 22d and was completed on the same day. The command encamped at Aylett's

on the Mattapony River, where it was learned that the Army of the Potomac was at Chesterfield Station on the North Anna River at the crossing of the Richmond & Fredericksburg Railway. The movement was resumed on the 23d, the command encamping at Reedy's Swamp and on the 24th rejoined the main body of the army at Chesterfield Station.

Something remains to be said as to the nature of the operation which I have attempted to describe, and the first difficulty which I encounter is that of giving it a name. It has been called a *raid*, a term without a definite meaning, which has been applied to a number of undertakings which had nothing in common save that they were carried on at a greater or less distance from the main body of the army. To reach a conclusion as to the meaning of the word it will therefore be necessary to make those operations the subject of analytical criticism. Where an army undertakes to live on the country, wholly or in part, its supplies are usually collected by small parties which are, in fact, engaged in the execution of requisitions, a right fully recognized by the laws of war. But these collections are, or should be carried on in an orderly and methodical manner, under the close and constant supervision of the officer who orders them; for that reason they are hardly to be called raids. Again small parties are frequently sent out by the commanding general of an army in the field to gain information as to the movements or positions of the enemy, or to obtain similar information as to the theater of operations; these are also carefully conducted and contact with the enemy is avoided unless it is absolutely necessary to the success of the expedition.

Larger commands are also employed at a distance from the army and some form of destruction may be an essential element of their operations; the destruction of railroads, highways, bridges, for example, and of certain things, or classes of things over a considerable area—growing crops which may be consumed, subsistence, forage, together with mills, elevators or storehouses that are needed by the enemy; but here the destruction is frequently incidental and does not always constitute the chief purpose of the undertaking. The dictionaries tell us that a *raid* is a "hostile or predatory incursion, a foray." It goes without saying that the movement of 10,000 men into the

country of the enemy, a force which is not only able to take care of itself, but to do incalculable harm to the enemy is very far from being a foray, or a predatory incursion.

One of the most important clauses in General Stoneman's instructions, in his movements of the preceding year, directed him to get into a position in the rear of General Lee's army in six days, at the most, after his departure, when Hooker was to meet him, having in the meantime pushed the enemy back to a point where Stoneman could hold him until the main army was able to connect up and inflict a decisive defeat upon the Confederate Army of Northern Virginia. The contemplated junction never occurred for, in less than six days after Stoneman's departure, Hooker himself had been defeated and forced to withdraw to the north bank of the Rappahannock. Sheridan's movement was a definite and carefully thought out military operation, in which a large mounted force was given separate employment, but with a view to ultimate coöperation with the army from which it had been detached. Such, in fact was the character of the movement under General Sheridan which terminated, so successfully on May 23, 1864. But the fact remains that it was called a *raid* and will be known as Sheridan's Raid to the end of time. The compiler of the Official Records of the Rebellion goes against established usage when he calls it the "Richmond Raid," a name not sufficiently descriptive, and one calculated to detract from the credit due to General Sheridan for its skillful conduct and to the officers and men under his command for the intelligent and efficient execution which was given to his orders.

MUSKETRY INSTRUCTION.

(Some exercises in field practice.)

BY BRIGADIER GENERAL JAMES PARKER, U. S. ARMY.

ON page 138 Small Arms Firing Manual, 1909, we are directed:

"Instruction will be carried out under simple tactical schemes or exercises directed by company or battalion commanders and made to simulate as much as possible under actual war conditions."

In my opinion, it would be advantageous also if such exercise were such as to aid in solving certain moot questions as to combat fire. In such cases the results should be published.

Can an advancing skirmisher gain comparative immunity from fire, by a "zig-zag" advance?

Is the rifle used on horseback, ever efficacious?

In the dismounted attack of cavalry can the horse be used to cross the bullet swept space, with advantage, under certain circumstances?

Which is more effective—simultaneous volley or the irregular volley?

In the direct attack, over open ground, at what ranges shall the defender open fire.

In short ranges, known distance target practice, can better and quicker results be obtained by using miniature targets and the methods of special course "B"?

Under what conditions should the battle sight be used?

I will state these propositions at greater length as follows:

1. In the attack on a position, or in the retreat after the attack has failed, it has been claimed that the skirmisher runs less danger of being hit if he moves diagonally rather than perpendicularly to the position. This of course depends largely upon the interval between skirmishers, since when skirmishers

have a small interval and move in this manner a shot intended for one may hit a contiguous skirmisher.

A skirmisher moving directly towards the rifleman presents a target which apparently does not change its position. If the skirmisher moves diagonally he presents a target which seems to move across the front. The American Indian made use of this diagonal advance, and especially in retreat, with great success. It is believed that it can be used today with advantage in attacking a position or retreating from it, provided there is a very large interval between skirmishers.

2. Ever since the introduction of fire arms there has been a certain amount of firing with the musket or rifle from horseback. The efficacy of such fire, it is thought, has greatly increased since the introduction of the automatic or magazine rifle. How efficacious this fire is is a matter of some importance and especially in combats of small detachments and patrols.

3. That a competitive test be made between the pistol and the rifle, mounted, using the course laid down in Par. 212, Firing Manual, 1909.

4. During the Boer War instances were known of successful mounted attack upon infantry intrenches, the mounted rifleman dismounting on arrival at the trenches and using his rifle. Such attack would be made preferably from behind cover at 600 yards or less. It is claimed that in charging 600 yards the cavalryman exposes himself but one minute, whereas the infantryman at full speed would expose himself three minutes, and by the ordinary method of attack from ten minutes to half an hour. It is recommended that experiments be made to compare the relative vulnerability of the soldier in these two attacks.

5. While volley firing is a desirable method of maintaining fire control, the present method of firing the volley has the disadvantage that it is necessary for each soldier to pull the trigger at the word of command. This causes many men to jerk the trigger, diverting the aim at the moment the gun is fired. I believe a preferable method of firing a volley would be for the men to be instructed that at the command "Fire" they should

pull the trigger slowly, not firing necessarily at the word of command, but when ready, and within three seconds. This would produce an irregular volley, but one in which each man could exercise all the care he takes when firing singly. In a platoon or company the bullets would fall sufficiently together to enable the commander ordinarily to determine the point of impact. It is recommended that experiments be made to determine whether a select body of men practiced in these two methods of firing volleys would or would not make more hits with the irregular volley than with the simultaneous volley.

Taking a square bullseye 10 inches by 10 inches; it is as hard to hit this bullseye at 200 yards, as a bullseye 5 inches by 5 inches at 100 yards; i. e., the inaccuracy of fire increases with the square of the distance. Taking the silhouette of a man at 100 yards it is four times as hard to hit that silhouette at 200 yards, nine times as hard at 300 yards, twenty-five as hard at 500 yards, and one hundred times as hard at 1,000 yards, as at 100 yards.

These principles can be proved by the tables in the "Regulations Prescribing Standard of Field Firing and Proficiency Test."

The question arises, if a position is defended against an enemy advancing over an open space of 1,000 yards (cover not being considered) and the ammunition supply is limited, we will say, to 100 rounds per man, at what range should fire be opened in order to make the greatest number of hits. Our ancestors with their single-shot guns were able to wait until the enemy exposed the whites of his eyes before firing on him and then repelled the assault. Without considering this extreme case, but comparing ranges within the limits of the battle sight of 1,000 yards, we have the following advantages to accrue by allowing the enemy to come within short range before opening fire. If we open fire at the longer range an error in the estimate of distance is disastrous. At the shorter range it is of little account. At the longer range many shots are wasted, due to poor vision. At the shorter range the target is plain. If the enemy is fired upon at the longer range he can be fired out of range of the fire. If he is allowed to come up to the shorter range he

can be fired upon while he is retiring over a distance of 500 yards that is, back to the 1,000 yard point.

Given an enemy advancing towards our trenches and who surely will be driven back before he reaches a point 100 yards from them, at what range can 100 rounds per man be most profitably expended?

It appears to me that a test conducted on these lines would be of great value in determining methods of attack and defense.

7. It is very desirable, especially in the cavalry, where the preliminary training of horse and man takes so much time, that the course of known distance firing be shortened, provided equal results can be obtained. I believe this can be done by substituting special course "B," Par. 146, Slow and Rapid Fires (omitting the rapid fire at 300 yards simulated prone). For the Marksman's course, Par. 137, Slow and Rapid Fire, to include the ranges 200, 300 and 500 yards.

To determine this I recommend that fifty men who have never fired, to be selected by lot, be put through the Marksman's course, as I recommend it, and fifty men, selected by lot, be put through the course as now prescribed. On the conclusion of this course I recommend that these two squads have a competition in skirmishing and at long range firing, to determine whether there is any practical difference in their proficiency.

The advantages of this Special Course "B" method of instruction are that ordinarily from 30 to 50 men can shoot at the same time; and the course of firing at known distance is completed much more quickly; all the essential points having previously been taught the men in gallery practice and aiming and position drill.

8. To test the advantages of the battle sight, conduct skirmish runs, distance being unknown, first with battle sight, next with sights adjusted according to the distance as estimated. Vary this by changing the targets and conditions.

HINTS FOR DIRECTORS IN MAP MANEUVERS.

BY MAJOR FARRAND SAYRE, SEVENTH CAVALRY.

IN starting a class which is taking up map maneuvers for the first time the following course is suggested:

FIRST MEETING.

- (a) A talk based on Chapters I and II.*
- (b) Show the class what maps and other material you have and explain the use of guide maps (see "Guide Maps," Chapter II.)
- (c) Have the class work out the "Preliminary Exercises" at the beginning of Chapter IV or other problems of a similar character, explaining the work of the director, giving them an insight into the mechanism of map maneuvers and familiarizing them with the blocks so that they will understand readily situations represented by them.

SECOND MEETING.

- (a) A talk on one side maneuvers (see "Methods" and "One Side Maneuvers," Chapter III).
- (b) Have a map placed in a vertical position and have a member of the class read aloud "One Side Map Maneuver No. 1" (Chapter IV), at the same time making needful explanations and illustrating positions of troops with blocks.
- (c) Carry out and discuss "One Side Map Maneuver No. 2" in the manner illustrated by Maneuver No. 1.

THIRD MEETING.

- (a) A talk on two side maneuvers (see Chapter III).
- (b) With the map on the table, have a member of the class read aloud "Two Side Map Maneuvers Nos. 1 and 2, the

*The numbers of chapters refer to those of "Map Maneuvers and Tactical Rides" by Major Farrand Sayre, late Instructor Department of Military Art, Army Service Schools.

director representing positions and movements of troops with pins and blocks.

(c) Carry out "Two Side Map Maneuver No. 9" "Leavenworth" (Chapter IV) or No. 1, "Gettysburg" (Chapter V).

After three meetings the class will be ready to participate in two side maneuvers and suitable problems may be selected from this book or drafted by the director.

Do not communicate the situation to the commanders earlier than is necessary. If they are inexperienced or the problem is difficult it may be necessary to give them the situations a day or two before the exercise, and it is sometimes better to require some preliminary work (an order or an estimate of the situation); but if a half hour is sufficient for preparation, give out the problems a half-hour before the exercise and no sooner. The most successful map maneuvers are those which are begun and finished at one meeting with the interest kept at white heat.

But the director should omit no opportunity to familiarize himself as thoroughly as possible with the problem in advance; if possible, he should rehearse it with officers who are not apt to take part in it later, or, better, induce some experienced officer to direct it and act, himself, as a commander.

If the initial dispositions of one of the parties (say the Blue) will probably depend, in measure, upon information which they will soon obtain of the dispositions of the Red party, it is better to call the Red Party to the map first. You will then be able to give the Blue party, when it comes to the map, information beyond that contained in the problem and thus save time.

After imparting the situation to the first party called in and learning their decisions and orders, make whatever notes are needed to impress them on your memory (you will not need many) and then immediately call in the other party. Do not at this time make any measurements or computations. There is ordinarily no benefit to be gained by figuring ahead before you have learned the orders of both parties.

After you have learned the intentions and orders of both parties dismiss both of them. You will now need a little time for measurements and computations. Do not "move both parties up ten minutes and see if they come in contact with one

another" as is sometimes done. This usually leads only to another trial move, much unnecessary work and loss of time. Ordinarily the first things to be determined are the place and time at which the first contact takes place and the time and place at which a commander receives a report of it. In most cases you can tell by inspection of the map which detachments of the opposing forces will come in contact first; if doubt exists, however, make whatever measurements are necessary. Then compute (by the method described under Problems Nos. 1 and 2, Preliminary Exercises, Chapter IV) when and where this will take place. You must then decide, from inspection of the map, which of these detachments first gains knowledge of the presence of the other or whether both come into view of each other at the same time. If one of the participants is supposed to be with a detachment which has gained knowledge of the presence of a hostile detachment and this knowledge is likely to influence his decisions, he should be called in and given appropriate information. But if none of the actual participants are supposed to be at the place of contact, the director usually acts for the commander of the detachment; if a message should be sent he computes the time necessary for it to reach the proper participants and his location when he receives it. Thus the length of the first "move" in a map maneuver frequently consists in the time from the opening of the exercise (mentioned in the problem) to the first contact plus the time necessary for the report of the contact to reach one of the commanders.

Do not leave any gaps in your narratives of events. When a commander is called in, it is usually best to recall to him the salient features of the situation as it stood when he was last at the map and remind him of the orders issued by him at that time, and then to unfold the situation continuously by describing movements of troops and other important events which properly come to his knowledge in the order in which he would learn of them.

While unfolding a situation to a commander in this manner he should be given to understand that he is free to interpose orders at any time; that he is in command of his troops and that he is as free to give orders to them at any time as he would be if the situation were real.

And while the director is unfolding the situation his hands should be busy in illustrating the movements and positions of troops as he describes them by the use of blocks and pins on the map.

Make measurements and computations with sufficient care to keep your decisions within the bounds of probability and to assure the participants of your fairness and accuracy. But it is not necessary to measure every road used. For instance, where several detachments are moving on parallel roads or where several patrols are sent out from a common point, it is usually sufficient to measure one road only and to locate the detachments or patrols on the other roads by eye.

Do not try to command the troops or let the commanders see that you are trying to influence their actions. Carry out the commanders' orders in good faith whether you are in sympathy with them or not. The director should be as facile as a weather vane while he is carrying out the orders and expressed wishes of commanders, and as unyielding as iron in enforcing decisions in regard to the results of contact, the progress of troops, interpretations of the map, etc., etc.

At the same time, the director should continually look ahead and keep in view the channel into which events are carrying the exercise. He should never be surprised into unexpected situations but should foresee every contingency. He will usually by the exercise of foresight and tact be able to draw the exercise into interesting and instructive channels without the commanders being aware that he is exerting an influence upon it.

If the opposing forces do not gain contact with each other it produces a feeling of disappointment and an impression that the problem was poorly drawn. To ensure contact the director may sometimes communicate to one of the commanders a report from a patrol that a cloud of dust has been seen on a certain road, or he may introduce an inhabitant with gratuitous information or, in extreme cases, he may give a commander an order from his military superior to reconnoiter certain roads, etc., etc.

The exercise should be made definite. There is no field for speculation or vague generalities in a map maneuver. Avoid

approximations, the subjunctive mood and conditional clauses. Use the first and second persons as much as possible. Do not say, for example,—“I think that by this time some of your men might have crossed the river;” say instead,—“You are on Hill 609, here, from there you see at 9.17 o'clock Corporal Y's patrol enter the river here, at 9.22 you see seven men on the other side here, etc.” And encourage commanders to address orders directly to their subordinates, making use of the first person.

Avoid every appearance of bias or unfairness but remember that drawn games are not interesting. Where opposing troops are nearly equally matched the director can avoid the appearance of unfairness by calling the result a “standoff,” but this is likely to result in an impossible situation and does not satisfy either commander. When mistakes have been made which result in placing troops at a disadvantage, the nemesis should be prompt and thorough.

The greatest danger to be feared is loss of interest on the part of the participants and this is most likely to come from long waits and periods of enforced inactivity. The best mode of avoiding this is not by trying to hurry the progress of events but by keeping the participants occupied and keeping them informed as to what is going on. When you call in a commander ask yourself if other members of the party or even the whole party may not be consistently called in. Thus if you wish to consult an advance guard commander and his commander-in-chief is supposed to be with or near him, call in both; but, of course, the advance guard commander should be given an opportunity to act before the commander-in-chief. When it is apparent that the main engagement will be preceded by a cavalry combat all of the participants not on duty with the cavalry may often be permitted to come in and observe the cavalry combat. The director should seize every suitable opportunity for playing open, i. e. calling all of the participants to the map. It is possible to play open at various stages of the exercise, especially near its close. When playing open, commanders are cautious to avoid language which would disclose the presence of concealed troops or giving information which the enemy is not known to possess. Commanders who wish to communi-

cate privately with the director may sometimes write notes and hand them to him, or may ask that the other party may be directed to withdraw.

Participants may also be required to perform certain kinds of work while not at the map, they may write messages whose substance has been communicated to the director, write orders, make sketches showing troops in order of march, etc. The time consumed by the director in making measurements, computations and notes is usually inconsiderable. The most fruitful source of delays is ordinarily the slowness of certain commanders in arriving at decisions and issuing orders. In extreme cases a stop watch should be used to take the time consumed by the decision and order, and this time is added to that computed for the operation ordered.

Commanders sometimes take up time after giving their orders by explaining in detail how these orders are to be carried out. This should not be permitted as the orders are to be carried out by other persons, if not by other participants, the director should take the responsibility for the execution of them upon himself. The director is sometimes at fault in going into details not necessary to the conduct of the exercise. Thus in the handling of divisions the director sometimes consults participants and, acting in accordance with suggestions from them, works out in detail the operations of the advance cavalry, the infantry point, the support of the advance guard, etc. In such exercises no officers should be assigned to small units. The actual commanders should be restricted to their proper spheres and required to issue only the orders appropriate to the grades assigned them. The activities of small units are not considered in detail but their results are supplied by the director.

THE RÔLE OF CAVALRY IN WAR.*

BY CAPTAIN EDGAR A. SERMYER, FOURTEENTH CAVALRY.

IN beginning my subject I know of no better principle to enunciate than the following: Cavalry, like artillery, is an auxiliary of the infantry—so important, it is true, that it is indispensable—but nevertheless an auxiliary.

I say indispensable because it must *prepare for*, *aid in* and *complete* the action of the backbone of the army, the infantry. *Prepare for* by reconnaissance, *aid in* by cooperating with the infantry on the battlefield itself, and *complete* it by first—if the action is successful—by energetically pursuing and second—if unsuccessful—by covering the retreat or the broken infantry and, if necessary, sacrificing itself to save the main force.

But while it is true that cavalry is an auxiliary of the infantry, it must be remembered that for reconnaissance and security, for operating against the enemy's lines of communications, for the pursuit of a beaten enemy and for operations of a similar character, cavalry has been, is, and always will be the principal arm.

I shall try to show a few things that it has done, can do, and *must* do in the future to accomplish its mission.

We often hear the cry that "cavalry is too costly." If our detractors say that cavalry is too costly, let us not answer by trying to prove the contrary, but let us justify its cost by making it so efficient that all officers of whatever arm of the service will believe in it and come to realize its worth. To do this, we must continually remember German General von Schmidt's motto: "This arm is so costly that it cannot let itself do nothing."

I do not expect that everyone will agree with a great many of the ideas here set forth, but if they cause discussion, I shall have accomplished a great deal, for I firmly believe we need stirring up.

*Thesis—Staff College, Army Service Schools, 1910.

While we all know that the action of dismounted cavalry played an important rôle in our Civil War and that neither the Germans, nor the Austrians, nor the French profited by our experiences—as is shown by their use of cavalry during the wars of 1866 and 1870, still to-day we find that all nations are putting thought and study on the use of dismounted cavalry.

Since the Civil War have we not gone to the other extreme? Have we not dwelt too much on the successes of dismounted cavalry and forgotten that a cavalryman should be a horseman first and a rifleman afterwards. If we are to be mounted infantry, well and good—then let us use our horses merely as a means of locomotion and let us change our name, but if we are to be cavalymen, capable of serving as cavalry has always served and capable of meeting any cavalry in the world; then let us go back to first principles and train our men and horses so that we can act in mass mounted.

In speaking of acting in mass, I do not mean a mounted mob. We want cohesion, endurance and mobility. The latter ensures the cavalry's moving rapidly over dangerous zones and gives it the choice of range and target.

It must be remembered that every hour spent in training men in mounted combat teaches them mobility and cohesion, and, above all, gives them that confidence in themselves which is essential in the mounted service. On the contrary, every hour on the range—in theory at least—detracts from that feeling. In practice, however, the evil only begins when the cavalryman commences to rely on the firearm and not the saber for, when that time comes, he looks on his horse merely as a means of locomotion.

As stated above, in speaking of mounted action I do not mean starting off a mob of mounted men at a run in the direction of the enemy, as has been done in the past with badly trained cavalry for, within a hundred yards of the starting point there will be no *cohesion* and consequently, at the moment of collision there will be no *shock*. But I do mean a charge of trained cavalymen riding knee to knee, boot to boot—at a gallop certainly, but never faster than the slowest horse.

These things spell training and again more training, so that such a body is under the perfect control of the leader—to be

used as the father may use the hairbrush on the erring youngster—he picks out the spot to hit and accomplishes his object—Why?—because his arm is under perfect control. Such must be the control of the cavalry leader over his unit, be it large or small.

General von Bernhardt in his "Cavalry in Future Wars" constantly refers to the necessity of first seeking out and fighting the hostile cavalry and driving it from the field. To do that, if we are opposed by well trained cavalry, we must know how to fight mounted.

I have often heard our cavalry officers, even here at Fort Leavenworth, where the belief in mounted action is stronger than at most posts, say: "Well, when we fight, I want to get off my horse and fight with the rifle."

I believe we must fight the spirit shown by officers who always want to fight dismounted, and must increase the enthusiasm of those who at least negatively believe in mounted action, until every regiment in our service is imbued with the spirit which has animated true cavalymen from the earliest days—that is, the spirit to do and to dare everything—even to sacrifice itself if by so doing, it can save the main army.

I do not mean to say that the American cavalryman is lacking in courage or even in the necessary dash, but I do believe that we have allowed ourselves to fall into the rut of thinking that all we will have to do will be to reconnoiter mounted and to fight dismounted and that if the time should come when we are called upon to charge mounted in large masses—admitting that we would do our best—the charge would be ineffective simply because we have not been trained properly.

In fact the spirit we want in our cavalry seems to be well illustrated by the story told by General E. A. H. Anderson, British Army, before the Aldershot Military Society. He says: "As regards the getting off the horse I am personally inclined to think that cavalry should be rather like 'James Pigg' when he was asked to get off his horse and pull down a fence for 'Pomponius Ego.' He replied 'Ar niver gets off' and jumped the fence at once."

We know how poorly the German cavalry performed its duties during the Napoleonic Wars. After these wars, General Blucher put the following questions to the cavalry leaders:

1. Why has not the Prussian cavalry rendered the service which we could rightfully expect of it?

2. How may the defect be remedied?

In answering the first question, the generals unanimously attributed the inefficiency of the cavalry to the weakness in effective strength of the arm, its numerical inferiority, and above all, to the complete lack of instruction in the employment of masses on the battlefield.

Let us then begin that instruction so that we will not have to make the same answer after our next war.

Apropos of this, let us take as an example the Russian Cavalry. In 1882 the Hussars and Uhlans were transformed into Dragoons and all armed with the rifle and bayonet, and from that time up to the Manchurian War, we find the immense importance of dismounted fire action drummed into the heads of the cavalry. In reading various accounts (written before the Manchurian War) of opinions of foreign writers on the value of this instruction, all, tentatively at least, seemed to doubt the wisdom of laying such stress on dismounted work and there was great speculation as to the effect of it on the mounted work of the much feared Cossacks.

We all know how miserably the Russian cavalry performed its mission during this war, and, among the many excuses brought forward by Russian cavalymen to account for their failure, we find many who are brave enough to say that they were improperly trained, that they had forgotten that they were cavalymen and depended almost wholly on dismounted fire action.

In a little book called "Reconnaissance in the Russo-Japanese War," a translation from the German, are found many examples in proof of this. On February 9, 1904, the combined cavalry brigade of Mischchenko was ordered to advance into northern Korea to reconnoiter. This force consisted of eighteen sotnias and six guns of horse artillery. After some work, Mischchenko on March 28th decided on a reconnaissance in force in the direction of Anju, taking with him six sotnias. This force advanced to the east and, forced on by a small force of Japanese from the walls of Chongju, stopped to fight dismounted. Mischtschenko was therefore delayed and after about two hours

of fire action a battalion of Japanese infantry coming up from Kasan at the double time, he broke off the fight and retreated.

The author of the book mentioned criticises this movement as follows:

1. With the moment of being surprised and the deploying for dismounted action, all offensive spirit tended to disappear. They all dismounted and allowed themselves to be held by a weak Japanese force, instead of pushing on the reconnaissance with the main body, disregarding the Japanese force in Chongju, which were sufficiently held fast by the two advance guard sotnias.

2. In this fight the Cossack of today has shown that his offensive spirit only goes as far as undertaking an enterprise when success is apparent; that his favorite weapon is no longer the sword and dirk, but the rifle, and that it is easier to keep these unruly and feared hosts at arm's length than was generally thought possible.

3. During the fight no further reconnaissance was attempted, so that after the fight the same uncertainty as regards the situation of the enemy existed as before.

Major General S. J. Soobel, C.S., commanding the First British Cavalry Brigade, in a lecture before the Aldershot Military Society, says on this same subject:

"I think therefore, we may dismiss the so-called Russian Cavalry with the remark that they proved themselves useless as cavalry *owing to their want of training and want of every quality which makes cavalry a body of horsemen to be feared and reckoned with.*

* * * * *

"Their only value as far as I can make out, lay in their numbers, and, in that negative sense, they were useful in preventing the mere handful of Japanese cavalry from doing more damage than they did to the railway and lines of communication generally."

A distinguished cavalry officer put this question directly to General Akiyama of the Japanese cavalry:

"It is argued in England that if the cavalry of Japan, a nation which has a veritable cult for the sword, which boasts

that the bright steel is their very soul, have in this war abandoned it for the firearm, then indeed the day of shock tactics is definitely over, and cavalry need in future no longer waste time in such useless exercises as the charge."

General Akiyama's reply was that his cavalry were fighting in altogether exceptional circumstances, they were continually out-numbered and forced to act on the defensive; his squadrons were too few and too valuable to risk in an encounter with vastly superior forces in the open, and therefore he always found himself at a disadvantage and forced to act with the greatest caution. Fortunately for him, he said the Russians appeared to be incapable of forcing an issue with him at close quarters, and it is to that fact that he attributed his ability to have accomplished what he did. *Had he to encounter a Russian Cavalry truly trained as such and determined when opportunity offered to close with him and ride him down instead of inenterprising masses who fought only on foot*, the case would have been a very different one.

This is the deliberate opinion of the commander of the Japanese cavalry, given after he had had some fifteen months of experience in the field, and it goes without saying that he was an able and competent man, as the Japanese did not keep any one who was *not* so in important commands.

To show the value of General Akiyama's testimony it must be remembered that in the autumn of 1904 the Russians had 207 squadrons in the field while the Japanese had only 47.

I have gone into this subject of the relative value of the Russian and Japanese cavalry because this is the last war of which we have had an opportunity of studying the action and value of cavalry, and it is desired to show that the failure of the Russian cavalry does not prove that cavalry, *any cavalry*, even the much dreaded Cossacks, will be of absolutely no account if improperly trained.

Let us consider that the aftermath of the Russo-Japanese War was that the glorious Japanese foot soldiers—the victors over the useless Russian horsemen—in time of peace gave themselves eight divisions of horsemen.

After this Colonel Zaleskig of the Russian General Staff wrote as follows:

"The charge in closed ranks which *in the past* was considered in Russia the most important if not the only method of fighting cavalry, *must be revived* with the value of the bayonet attack of the infantry."

General von Verdy du Vernois, the author of the book on troop leading and the first authority on that subject, says:

"When attacks by large masses are now-a-days undertaken, it is essential to have the most perfect accord among all the commanders in viewing the situation and in conducting the action; and this can only be attained by the most careful training. It is for this reason that we should practice combat tactics of large forces as thoroughly as possible, not alone on the drill ground but also on the most varied terrain."

CAVALRY ORGANIZATION.

In considering the proper organization for cavalry, we must consider its uses in war. From the use of cavalry in the past and from the form of its organization in modern armies, we can easily see that either it will be used as divisional cavalry or the regiments will be forced into brigades and divisions for use with corps and armies, and will even, if conditions make it desirable, be formed into separate corps for independent action.

The size of the regiment should therefore depend upon the number of horsemen necessary for the divisional cavalry and since, on account of its cost, no nation can hope to maintain in peace the amount of cavalry which may be necessary in time of war, the divisional cavalry must be reduced to the minimum consistent with safety. In foreign armies this number is placed at from 300 to 700.

In our armies the divisional cavalry consists of a regiment of approximately 1,200 men. This cavalry will rarely be used out of the sphere of action of the division itself. Its duties are to keep communication between the covering troops and the main body; to take charge of the exploration in the vicinity of the command and to secure such data concerning the roads and resources of the country as may be necessary for immediate use of the commanding general.

I believe that our regiment is about twice too large for these duties, *i. e.* these duties can be performed just as well by a

regiment of 600 men. Moreover, a regiment of 600 sabers will be large enough to meet the divisional cavalry of other armies.

Should war be declared to-day between the United States and another great power, it would soon become evident that we needed fewer cavalry with the infantry divisions and more for independent action in mass. How, then, could the defect be remedied. Only by splitting up the regiment and thus destroying their esprit.

Recognizing the above, let us therefore have a regiment of a size consistent with its use as divisional cavalry. I will not go into a discussion of the pros and cons between the three unit and the four unit systems, and will take as an example a regiment of three squadrons, each of three troops of 65 or 70 men.

That will give us a regiment of either 585 or 675 men, one plenty large enough for divisional cavalry and many times more efficient because there will be a larger proportion of officers to enlisted men.

RECONNAISSANCE.

On account of the enormous increase in the power of the modern fire arms and also on account of the aids to modern war given us by science, as well as the immense cost of war, great standing armies are now the rule and every effort will be made to gain a favorable decision at the first possible moment after the declaration of war.

The larger the army, the harder it is to direct and the more difficult it will be to change the dispositions for battle which have been made on false premises; hence *the greater the value of thorough and accurate reconnaissance.*

Some of the world powers advocate the use of cavalry immediately after the opening of hostilities and keep large masses of cavalry practically on a war footing along their frontiers at all times. Immediately after the declaration of war these cavalry masses are to be pushed across the frontier with the object of breaking up railroads destroying supplies and hindering in every way the mobilization of the infantry.

While on paper this looks very fine, to my mind it has the serious objection of risking the loss of large numbers of well trained cavalry without adequate compensation; for all the

damage done in the enemy's country can be rapidly repaired unless the cavalry be immediately followed by the army of occupation. Furthermore, in any case, the losses in this cavalry may be such as to severely cripple the effectiveness of the main armies when they are mobilized and ready to start for the theater of operations.

While one of the duties of the General Staff in time of peace is to collect information of military value and also to prepare plans of campaign for possible future operations, still the commander of the newly mobilized army must have information of the hostile troops as soon as he begins his march. *This information* must be obtained by the cavalry, and from the beginning of the march until the enemy is met and the decision gained, the cavalry must continue to perform this duty, that is the cavalry must gain contact with the hostile forces as soon as is possible and *never* lose it.

If the cavalry is not handled properly and loses contact with the enemy, the main body will naturally come to a halt—it will be like a blind man trying to find a thistle in a ten acre lot—he comes on it finally unknowingly, and is stung. For an example note the action of the Prussian forces on August 8, 1870. They remained halted throughout this day simply because the cavalry was not properly used, nothing being done towards keeping the enemy at St. Avold under observation or towards gaining accurate information in regards the arrival of fresh troops from Metz.

Throughout this advance we find that, as a rule, cavalry was indifferently handled. General von Moltke was continually sending orders from Royal Headquarters to the different armies to *send out* the cavalry and locate the enemy. On August 10th, he sent orders that the cavalry be pushed well to the front and General von Steinnetz obeyed by ordering the Third Cavalry Division to follow the leading (first) Corps and the First Cavalry Division to follow the army. But the crowning mistake of General von Steinnetz in his use of cavalry was when, on August 13th, Royal Headquarters ordered that his cavalry reconnoiter on the left bank of the Mosel.

To give effect to these instructions, von Steinnetz issued this order to the Third Cavalry Division: "The Third Cavalry

Division will proceed to Avancy, press forward towards Metz and Vigny, and *try* to push detachments across the Mosel to see what there is on the far side."

The orders of the commander of the Third Cavalry Division in regard to the crossing of the Mosel were as follows: "Patrols are to be sent towards Metz and Diedenhofen, and *attempts* made to throw detachments over the Mosel, to see what troops there are on the opposite side."

A study of this campaign, especially the orders from Royal Headquarters on this day shows conclusively that Moltke's idea was to cross the cavalry above and below Metz and thus completely isolate that place.

To carry on the subject of the reconnaissance mentioned above the result of von Moltke's orders was as given in the official History of the War was as follows: "Another patrol of the 7th Uhlans, which had reached the other bank of the ferry at Hauconcourt, returned without having met the enemy." In other words, the result of the cavalry reconnaissance of the First Army on August 13th, was that one small patrol crossed at Hauconcourt, saw nothing of the enemy and returned.

In regard to the failure of von Steinnetz to use his cavalry properly, General Pelet Narbonne has this to say:

"At this point (after the failure of the 13th) all attempts to carry out the orders of Royal Headquarters came to an end. The serious engagement on the 14th, had turned attention to another direction, and the matter seems to have been entirely forgotten, though even on the 15th, if only one squadron had succeeded in getting across it would have rendered valuable assistance. How accurate and easy the location and the extent of the French right wing on the 18th would have been if only German Cavalry had pressed on westwards from Hauconcourt, the distance from Hauconcourt to Roncourt is only seven and one-half miles."

Take a case in our own war. Would Stonewall Jackson have been able to make his turning movement at Chancellorsville unobserved if the Federal Cavalry had been performing its proper duties?

The mission of the cavalry is then to gain contact with the enemy's main body and to maintain this contact.

But we must not think that to gain contact with the enemy is an easy task. Before we gain this contact, the enemy's cavalry must be disposed of.

With a great many writers we find the theory advanced that to one and the same force—the independent cavalry mass—should the duties of screening and information be intrusted. General v. Bernhardt has pointed out very convincingly that these two duties can be performed by one and the same force in only one way. That is in order to screen properly or to be able to reconnoiter properly, we must first get rid of the opposing cavalry.

Of course a writer can pick out incidents in the Franco-Prussian War and by these incidents seek to prove that this is not so but such arguments would only go to prove that the writer in question was not a close student of the war, for there is not a single incident in that war to show that the French Cavalry knew anything about its duties? Brave they were, certainly, as is shown by their charges during the battles around Metz and at Sedan; but they seemed to be absolutely ignorant of reconnoitering and screening duties. In fact the German cavalry also as a rule performed its duties poorly and only succeeded at all because it was unopposed by any cavalry worthy of the name.

As stated before, the superior commander, in order to intelligently plan his movements, must be kept informed of the hostile forces. Information obtained by the cavalry will be worthless if it does not reach headquarters in time to be acted upon.

We must not expect to have opposing cavalry as poorly trained as was that of the French in 1870, but must consider it to be as highly trained as in the German Cavalry today, if we are to discuss lucidly the screening and reconnoitring duties of our arm.

On account of the great masses of the armies of today and the great range of modern arms, cavalry must reconnoiter many miles further to the front than formerly. If the attempts is not made to seek out and gain the decision over the opposing cavalry, we will have a great number of patrols spread out, making long detours to avoid the hostile cavalry; then even if they

succeed in piercing the hostile screen and gaining valuable information, the long distances must be passed over again, still greater care being taken to avoid hostile cavalry, and, when the information secured by these patrols finally reaches the superior commander, it is too late. In how much shorter time could this same reconnaissance be made and how much quicker could the information obtained be made available for the superior commander if the enemy's cavalry had first been beaten out of the field? This combat becomes all the more necessary if, in addition to reconnaissance, one must also carry out screening duties.

It can be plainly seen that the only way to deprive the enemy of the power of breaking through our own screen is to actually drive him from the field.

It is not meant that we should carry out this idea of seeking the enemy's cavalry to the extreme of following any where he may lead but that our actions should be such as to force him to meet us and thus make a combat inevitable. In other words, one should from the very beginning secure command of the ground between the two armies.

The psychic factor in this seeking out and destroying the enemy's cavalry must also be taken into account. The superiority of the masses will make the individual feel his own superiority, and if the cavalry mass is always to avoid a combat, the morale of the individual is bound to be affected. How can we expect the maximum amount of courage and determination from men who are taught to avoid the enemy and never to fight unless compelled to.

On this subject General v. Verdy says:

"We must familiarize ourselves with the maxim that to see at all we must first of all be able to fight. The training of large cavalry masses must therefore be carried out in the most thorough manner."

That the German cavalry did not thoroughly understand this principle in 1870 is shown by the following incident: On August 15th during the retreat of the French, General v. Rheinbaben with 4,380 sabers by a mere demonstration checked the retreat, yet the presence of General de Fortin's totally inactive

cavalry hindered him from observing the French Army and gaining information.

This failure on the part of General v. Rheinbaben to do his full duty calls forth the following gentle comment from Pelet-Narbonne.

"He should have considered his task fulfilled only after he had established contact with the enemy's forces of all arms. Reconnaissance after all, means fighting, for which preparation must always be made, even in the dispositions made for the advance. This principle was not then established in the minds of cavalry leaders. They had not been educated up to it."

To-day, however, Germany, as well as the other great powers, does recognize this important principle, and the cavalry is being educated up to it.

How is this reconnaissance to be carried out? Will the cavalry mass be broken up into numerous small units and strewn over the theater of operations, or shall this mass as a whole be kept intact, sending out only patrols with their proper support?

The cavalry should by all means be kept together—that is—should be kept in groups or masses having a great deal of striking force, and marching in such a way that a certain amount of concentration is always possible, at the same time covering the front in breadth by small reconnoitering patrols.

It is not meant by this that all the cavalry except small patrols should be kept in one mass, for small patrols will only be able to accomplish their missions when properly backed up. That is, a body of troops must follow these patrols at a distance of from eight to ten miles, especially if what remains of the enemy's cavalry is active or if the inhabitants of the country are liable to resist as was the case during the latter part of the Franco-Prussian War.

Since, upon the reports sent in by the cavalry depends the action of the superior commander, no pains should be spared to have the leader, the trooper and the horse as perfect as possible.

"These factors are of equal importance, each of which is the compliment of the other."

1. "The leader, an officer, who observes and reports;

2. "The trooper, who makes possible the leaders advance, protects him, and finally carries to the rear the important communication—daring all, if necessary, suffering everything so as to reach the superior commander in ample time;

3. "The horse, upon which depends the success or failure of the mission of both leader and trooper."

The faculties of the leader should be intelligence, good judgment, bravery, audacity, perseverance, energy, arder and a taste for responsibility. Moreover he should have a strong physique, endurance, good sight and hearing; must have a good knowledge of terrain and the manner of utilizing it to the best advantage, he must know how to orient himself by day or by night; must know how to read a map; a good memory for locations so that he can travel without a map in a strange country without danger of getting lost; should be able to follow a trail and, by reading that trail, come to valuable conclusions. He must know the tactics of the different arms, their formations, and the space occupied by different units; the armament, organization, and uniform of foreign armies.

Besides, he must be an officer of character and judgment, for, in order to execute his mission properly, he must be informed, perhaps before anyone else, of the intentions of the commander, so that he will be able to make his reconnaissance intelligently.

The troopers employed on this service should be resourceful and well-instructed, good horsemen, and should possess a physical and intellectual ability and a professional knowledge far above the average.

The horse must be sound, have speed and endurance, and be trained both in the use of rapid gaits over rough ground and in jumping obstacles.

Let us go back again to the first question put by General Blucher to the cavalry leaders after the Napoleonic Wars.

Why has not the Prussian Cavalry rendered the service which we could rightfully expect of it? As stated before, one reason given was the complete lack of instruction in the employment of masses on the battlefield. Another was the fact that the cavalry of the landwehr, organized on the spur of the moment, had in no way furnished the cavalry of the line of

support so necessary for it, but had, on the contrary, been a veritable millstone about its neck. The Prussians had mingled the two kinds of cavalry to form mixed units and had carried out this purpose to the point of dividing up the regiments of the line in the vain hope that troopers of the landwehr, poorly instructed as they were, would learn by watching the performance of their comrades of the regular army.

The units thus formed naturally offered no cohesion and their leaders (obliged to limit their demands to the capability of the horses of the landwehr, badly broken and in nowise trained) were powerless to act with the desired dash and enthusiasm.

In Frederick the Great's instruction for the training of the Cavalryman, dated June 17, 1742, we find the following:

"The officers must see that their men ride continually, so that each can handle his horse by itself, turn and twist it, and be completely its master. When they can do this then the squadrons are to be formed." Again: "The men must be as completely masters of their horses without saddles as the best trained in the school saddle."

To illustrate how highly cavalry can be trained and should be trained, let us take the cavalry of Frederick the Great at Lobositz. Sixteen squadrons took part in two attacks and charges, covering 10,000 yards over broken ground, although the horses had been short of food for several weeks and had been saddled up for twenty-nine hours before charging most of them without either food or water.

After the Waterloo campaign, when Blucher had so bitterly criticised the Prussian Cavalry, Marwitz, one of the Frederickian school wrote a pamphlet explaining what Blucher meant.

He says: "What are the elements which go to make up an efficient cavalry?" In answering, he says these elements are partly moral and partly physical and that, while similar to those required by good infantry, their application is much more complicated because not only the *man* but also the *horse* must be taken into account. Continuing, he says that the moral elements are personal courage and "esprit de corps," both of which must necessarily be possessed by good infantry; and that the physical ones are soundness and condition, combined with horsemanship in the ultimate unit—the horse and his rider;

and mobility and precision in all field movements of the whole body.

Further on he says: "Taken together, the usefulness of the unit (man and horse) depends on this—that the man is able to take his horse at *any desired pace in any direction and over any ground*, and under all conditions to be able to use his weapons with effect against the enemy."

To carry out Marwitz's ideas, one must be a horseman, and a cavalryman who cannot control his horse so as to accomplish that result is simply an unfortunate surrendered to the uncontrolled impulses of that timid but dangerous beast.

Let me give one more quotation to show that even in the 17th century the value of the training for the cavalryman was recognized. It is from "The Souldiers Accidence" by S. Markham, 1643.

"Infinite great (and not without much difficulties) are the considerations which dependeth on him that taketh upon him to teach, Command, and Govern a Troope of Horer; For to instruct Men only (who is a reasonable creature, can understand my language and apprehend my directions) though he be never so ignorant and peevish, yet there is much ease in the progress, and what favor cannot persuade, authoritie and punishment may enforce. But to bring ignorant man and more ignorant horse, wilde man and mad horse, to these rules of Obedience, which may crowne every Motion and Action with comely, orderly and profitable proceedings; *His Hoc opus.*"

Now, after this discussion, to show the value in training of both man and horse, in order that cavalry may be efficient and carry out its proper missions, let us find an example to show what has happened and what will surely happen again with improperly trained cavalry.

Major Kunz, in his, "*History of the Cavalry in 1870*," has given us many examples to show the worthlessness of improvised cavalry. One in particular will illustrate the point. In this example, it must be remembered that the improvised French cavalry, even after Sedan, was composed almost entirely of old soldiers and reservists, men who had far better opportunities of becoming good cavalrymen than will our volunteer cavalry at the outbreak of war.

At Bois Commun, November 24, 1870, a Hessian patrol rode into the town and was engaged with the advance guard of a French lancer regiment. While the fight was going on, the main body of the French regiment came up. The Hessians therefore cut their way out and were hotly pursued by the French advance guard. The French commander did not wish to pursue because his horses were tired and his rapid advance had caused a great deal of straggling; but the senior squadron commander had already ordered two squadrons to pursue in column of threes. The colonel therefore started to gallop forward to stop the advance, but his horse ran away with him and he soon found himself at the head of the whole force. The lancers, seeing their colonel dashing ahead naturally tried to keep up with him and soon the whole regiment was running away in the direction of the enemy, the horses entirely beyond the control of their riders. Unfortunately, the main body of the Hessians arrived on the scene and, striking the wild mob on the flank, killed or captured every man in the lot.

The examples cited are given because they represent the experiences of the great powers and because it is believed that we, as American cavalrymen, should profit by these experiences so that after *our* next war, we will not have to look for excuses for our failure or for means to justify our existence.

The size of our cavalry troops should be the same in peace or war. If the peace strength be sixty-five men per troop, let that be the war strength and let our training be such that, when war does come, every man will be the master of his horse and the regiments will be so that the day war is declared, they can move out, ready to take the field without waiting to be filled up with twenty or more new men and horses. If that plan is carried out, there can be no valid excuse for failure. It will be up to the leader. If the unit fails, the leader will be to blame, for on his shoulders rests the responsibility for the efficiency of this unit.

In speaking of the cavalry of the Waterloo campaign, v. Verdy says: "The superiority of the defenders cavalry may, indeed, interfere with the reconnaissance and thus make it very desirable for infantry to come up rapidly. But above all else, a thorough peace training for cavalry is necessary, for the results

to be expected, if this training is lacking, are here amply illustrated."

Given the proper leader, troopers and horses, we now come to the reconnoitering itself.

Rules for this duty cannot be laid down absolutely. The leader must make his own rules to follow in each particular case.

However, there are some maxims which may be mentioned because their worth has been proved by experience. The nearest distance which a mounted man can approach the enemy for the purpose of observing is only determined by the extreme range of the rifle. There are few chances to hit a single mounted man at 700 or 800 paces, especially if the latter be moving rapidly or is partly under cover. At this distance, a man with keen eyesight can distinguish troops of the different arms and can approximate their strength.

But, if we are dealing with large masses, the observer may not be able to get within that distance on account of the hostile covering detachments. These will keep the observer, considering only perfect safety, at a distance of from 1,500 to 2,000 yards from the objective and therefore the observer must be provided with an excellent pair of field-glasses and must know how to use them properly.

However, it will not always be practicable to observe the enemy at this distance on account of the terrain, and in that case, the observer must endeavor to slip in between the meshes of the hostile covering detachments. This requires a good knowledge of the terrain and its uses, and will be practicable since the screen of the large hostile masses will never be a continuous line.

The patrol should never move in close order but should be dispersed to such an extent that, if suddenly fired upon, there will be no danger of all members being placed *hors de combat* at the same time. When he reaches a good point of observation, the leader must dispose of his patrol in a way to cover his own position and thus leave himself free for observation. Before leaving one observing position, he should observe to the minutest detail the ground between his position and the next probable observing point, and, when moving between the two, the patrol should go as rapidly as possible.

It should be kept in mind that the mission of a reconnoitering patrol is to observe and it should never be diverted from this mission. General Pelet-Narbonne, in his "Cavalry on Service," cites several instances where, during the Franco-Prussian War, a leader spoiled an otherwise excellent reconnoissance by allowing himself to be diverted from his mission of observing because he had a chance to capture a couple of wagon loads of supplies or possibly a few prisoners. As soon as such a thing is done, the independence of the patrol is lost and therefore its mission suffers, because the patrol must take care of its booty instead of gaining and maintaining contact with the enemy.

An officer sent out to observe *must* keep contact with the enemy after he once secures it. This was not appreciated by the Germans in 1870 and we find numerous instances where the failure to do it was fatal to their plans. General von Bredow with the Twelfth Cavalry Brigade, reconnoitered to within 2,000 paces of the French at Rohrbach but did not maintain touch and, as a consequence, the Fifth French Corps left and joined McMahon and for two days all touch with the enemy on this flank was lost.

The size of the patrol will depend on the activity of the enemy, the attitude of the inhabitants of the country, and the distance from support which the patrol is to operate. A small patrol, say three or four men, sent out several miles from support will be absolutely useless unless backed up by relay posts for the purpose of sending back messages. Otherwise this small patrol, while of a size convenient for slipping through the hostile covering detachments, will not be able to send back word of information received until the patrol itself returns.

It would be much better to have a patrol of say nine or ten men and when it is found necessary to penetrate the hostile lines, the leader should leave all but two or three troopers in a well covered position and then go on with his small patrol. It will then be possible to send messages back to this waiting group and the latter will forward them to their destinations while the leader can remain in observation. The patrol leader should bear in mind that the information he obtains is of no value unless it reaches

the commander at a time when it will aid him in issuing his orders.

In sending in reports, a leader should recapitulate briefly the information contained in a former one, as numerous instances are recorded in all wars where the messengers with important information have never reached their destinations and this method will at least render later messages intelligible.

It is important that the leader verify the names of places by asking different inhabitants.

In regard to the manner of making reports, it is always well to report important facts both to your immediate commander and to army headquarters. The time element may be of immense importance to the army commander.

All cavalrymen should be of mutual assistance in the transmission of reports. If an exhausted despatch rider of some other patrol is met, forward the message to its proper destination by a fresh man, especially if the message is an important one.

It might be a good idea to give the name of the bearer in the message, and if this fact be made known to him, it may have a favorable influence on his zeal.

Do not give up your reconnaissance because you find it impossible to advance on the road ordered. Try another one and persevere in your mission.

A cavalry leader of whatever rank should never wait for orders if he can fulfill any useful object. Cavalry is the arm of initiative *par excellence* and any man who is afraid of taking on himself a great deal of responsibility when necessary, has no right to belong to it.

Patrols sent to distant points should be informed as to what is known at Supreme Headquarters of the enemy's dispositions, so that the leader can intelligently carry out his mission.

Members of a patrol should be warned that in case of capture they are to divulge nothing. This may not be thought necessary but history gives us numerous examples of important information secured in this way, and good may come from impressing on the men the fact that information obtained from them might bring disaster to the whole army.

In covering the front of an advancing army, the cavalry forces sent out to find the enemy will, of course, each be given a di-

rection. This does not mean, however, that the orders must be literally obeyed. If the leader finds the situation different from that anticipated by his superior in his instructions, he must act independently and on his own initiative as the change in conditions warrant.

If sent out to find the enemy in a certain direction and the track of a large force is met with, the leader must, without further orders, follow it untiringly until the objective is located.

When advance cavalry takes a town formerly occupied by the enemy, the leader should immediately inquire of the inhabitants what regiments were there; seize letters, telegraph files, newspapers, etc. Napoleon in his "History of the Campaigns in Italy" explains fully the value of this.

The leader of the advance cavalry should always back up his patrols—with or without orders. Small patrols properly supported will always accomplish more than those sent out without hope of support, for in the latter case the leader may not take the risks that are possible when he knows that help is near.

It is important to emphasize the point that reconnaissance has only obtained its objective when the main bodies of the cavalry have gained touch with the enemy's column of all arms. When ordered to gain touch with a neighboring friendly army, that object is not accomplished by simply meeting a patrol of that army, but the task demands that communication be established with some superior authority, who is in a position to give information of its situation, etc.

When a cavalry division has gained contact with the hostile army, that is, has reached a position from which the hostile army may be observed, the leader, instead of simply forwarding the reports of his subordinates, should observe for himself. General von Pelet-Narbonne says on this point: " * * * this personal seeing and judging, which is worth striving after even for a piquet commander, must be regarded as the rule for all cavalry leaders. Every dispatch sent in from his own observation by a leader of a division—that is, to say, an officer of particular intelligence and acquainted with the whole situation—will naturally be regarded as of considerably higher value than reports of officer's patrols."

When opposing forces come so close to each other that there is no room in front for the cavalry masses, the leader must withdraw to the flanks. Strategic reconnaissance to the front stops, but patrols will pass around the enemy's flanks to see if there is any change in the situation, etc. The vital point is to find a commanding position and remain concealed. See, either by relay posts or otherwise, that reports are properly transmitted.

Reconnaissance to the front will now be done by the divisional cavalry.

II. TO AID IN THE VICTORY OF THE INFANTRY.

We now come to the second phase of the activity of the cavalry.

The invention of the dirigible and of the flying machine has not made the cavalry useless for gaining information. While there is no doubt of the value of these new inventions, under favorable conditions, still they are of little value at night, when it rains, and, at present, in a high wind. While a great many enthusiasts claim that they have taken the place of cavalry in reconnaissance, we also find some opponents of the mounted service crying that on account of the long range rapid firing rifle, cavalry will be useless on the field of battle.

To show the fallacy of such reasoning, it is only necessary to look back at military literature immediately after each improvement in the fire-arm. The argument has always been that cavalry must now leave the field of action. The history of wars have not proved the truth of these claims. In the olden days, we find cavalry the deciding factor on many a hard fought field. Even granted that, under present conditions, it will be more dangerous for cavalry on the battlefield than it was in the days of the muzzle loader, should that be a reason to keep it in the background. If we would go to war, we must expect danger, and, if an army can be saved, the tide of battle changed, or an important point can be held for our advancing infantry by the sacrifice of a portion of the cavalry, then that sacrifice should be made.

However, I believe that the danger to cavalry on account of the range accuracy and rapidity of fire of the modern weapon, is much over rated.

Compare the dense firing lines, two and three deep, with each weapon firing a missile so large that a hit on man or horse would place the victim *hors de combat*, with the thin firing lines of today and the small caliber bullet, the effect of which on the excited horse will be small unless a vital spot is reached. I believe that this comparison will show that the rapidity of fire of the modern firearm with its lessened effect will about balance the old fire with its maximum effect.

Consider now the great range and accuracy of the new rifle. While it is true that we will have to pass over greater distances under fire, yet it does not mean that we *cannot* pass over them. It simply means that we must take advantage of cover now more than formerly. The accuracy and range of the new arm are only valuable while the soldier remains cool and collected and fires with precision. This is especially so when used against cavalry from the fact that the exact range of a troop in action is extremely difficult to obtain.

General Perron of the French Army says: "The modern long range rifle in the hands of tired and exhausted men, has no more value than the old and obsolete weapons, when fired precipitately and without aim. Whatever be the arm of the infantry, a moment will come when men will lose their coolness and when cavalry can charge with a fair chance of success."

Prince Hohenlohe also says on the same subject: "I have often noticed how fire discipline suffers in moments of danger. When one has for six or eight hours been in an undecided conflict, when nerves are strung to their limit during all this time by the roaring of cannon and the rattle of musketry, when one has been torn by powerful emotions, one is shaken in body and in morale."

When that moment comes, is there any doubt but that cavalry can pass over the dangerous zone without subjecting itself to annihilation.

Captain Gossard, of the French Cavalry, a writer who favors shock tactics, says: "All charges which have been made against infantry in position and in cold blood have always failed, and this must be more true than ever in this day of perfected arms. On the other hand, with green troops only fairly

well disciplined and inured to war, it *may* happen that the cavalry can successfully attack demoralized infantry and cause a panic."

I take issue with this statement and will try to prove that it is far too conservative and that the opposing infantry does not necessarily have to be demoralized to make a cavalry charge possible.

On the day of the battle of Vionville, just beyond that town lay the remnants of the 24th Regiment of German Infantry, extending in a single line of skirmishers from the Vionville—Resonville road to the old Roman road which formed the boundary of the Tronville woods. They were without supports of any kind, their ammunition was running low, and the men were completely exhausted from the terrible heat. About 1,000 yards in front of them lay the French Third Division drawn up in two lines and supported by the whole of Canrobert's Corps Artillery, in all fifteen battalions and nine batteries. Later a large body of French Cavalry; estimated to be a division, rode up and took post in the northeast angle between the Roman road and the country road running from Villers aux Bois to Resonville.

Feeling that if the French Cavalry leader realized the condition of the German line and charged, the German infantry would be lost, a lieutenant suggested to General von Buddenbrock, commanding the Sixth Division, that the nearest German cavalry force be called on to charge first and thus anticipate the French. The general at first demurred with the time worn phrase that cavalry could not charge unshaken infantry, but realizing the seriousness of the situation, he at last gave his consent.

The nearest cavalry happened to be Major General von Bredow's brigade, of six squadrons, and, after receiving the order from the Corps Commander, von Bredow gave the command and the whole force charged across the 1,000 yards in line, notwithstanding a murderous fire poured on it from both front and flank, for the whole Roman road was lined with infantry.

They swept over the first line, then over the second, but by this time the horses were blown and all order lost, and then de Porton's cavalry division on fresh horses, rode down upon them, nearly five to one. What followed may be best described

by the German Official Account: "General von Bredow sounds the recall. Breathless from the long gallop, thinned by the enemys' bullets, without reserves, and hemmed in by hostile horsemen, they once more cut their way through the previously over-ridden lines of infantry and artillery; harassed by a thick rain of rifle bullets, and with the foe in hot chase in rear, the remnant of the two regiments of Prussian cavalry hastened back to Flavigny. The victims of this charge, courageous unto death, had not fallen in vain. The advance of the Sixth French Corps was checked, and was now it is stated, by order of Marshal Bazaine, entirely abandoned; at any rate the French made no further advance from the direction of Resonville this day."

It should be remembered that von Bredow's success with his six squadrons was against the same corps (Canrobert's) that stopped the Prussian Guard Corps only two days later at St. Privat.

That this is not an isolated case of cavalry charging unshaken infantry is shown by the charge of the First Guard Dragoons on the same day. This happened when the 38th German Infantry Brigade was struck and defeated by Grenier's Division of the 4th French Corps. The advance of the victorious French had to be stopped until the arrival of the remainder of the 10th German Corps. This enormous task was given to the First Guard Dragoons and well they performed their duty. The charge was delivered against the dense masses of advancing infantry and, after a desperate conflict, in which the Guard Regiment lost one-third of its strength, the enemy's career was stopped and the pressure on the retreating 38th Brigade relieved.

In this case, not only have we unshaken infantry ridden down and broken, but troops advancing in the full flush of victory; besides, the cavalry had to cope with the difficulties of the ground, and actually executed a series of maneuvers at the trot under both artillery and infantry fire before delivering their charge.

Other examples during the same war are Du Prenil's charge with one brigade, about 11:00 A. M., at Vionville to cover the right flank of Frossard's Corps which was beginning to retire, and General von Rauch's charge about noon on the same day

with the 14th and 15th Brigades to stop the French advancing from Resonville.

Later on in the campaign we find the charge of the Fifth French Cuirassiers against the 27th German Infantry at Beaumont, and the wonderfully self-sacrificing but really useless charge of Margueritte's French Brigade at Sedan. In the latter case, for a half hour, it is admitted, the course of the struggle defied description, and that no advantage of this half-hour's grace was taken by the rest of the army, was no fault of the cavalry. This charge failed, but had it been made to form a screen for an organized attempt to break out, and had the attempt been successful, the cavalry attack could hardly have been disparagingly spoken of as a failure, but would rather have gone down to posterity as one of the finest examples of its employment in history.

One more example is taken from Prince Hohenlohe's "Letters on Cavalry" to show what good cavalry could achieve against the rifled muzzle loaders, cold theories of the drill ground to the contrary notwithstanding.

"At the commencement of the battle of Custoza, the two Austrian Brigades, Pulz and Bogdanovitch, together fifteen squadrons, at the outside 2,400 sabers, attacked the two Italian Infantry Divisions, Humbert and Bixio, in front; they rode down the skirmishers, broke several squares, and carried terror and confusion into the most distant line. In the highly cultivated Italian fields, most of the Italian Infantry found cover behind rows of trees and opened a deadly fire on the cavalry as they retired. But the result of this charge was to disable thirty-six battalions for the remainder of the day."

"The cavalry, however, was neither destroyed nor even lamed. From 7:00 A. M., the time of the first attack, till five in the afternoon, they held these two divisions in check by their confident bearing and prevented their going to the help of the rest of the army."

"Thus these 2,400 cavalry held in check upwards, of 25,000 infantry, and eventually made more prisoners than their own numbers."

It should be noted that the Italian rifle was sighted for 1,200 yards and swept the ground for a good 500 yards from

the muzzle with a large bone smashing bullet, and that the Italian infantry stood six deep, so that the number of bullets fired was about equal to a modern skirmish line at two pace intervals.

These instances are noted to show that nothing is impossible for a properly trained, well disciplined body of cavalry. I do not mean to say that cavalry can charge unbroken infantry in front with any strong hope of success, but neither do I believe that the mounted charge is *only* possible when the enemy's infantry is demoralized and on the point of breaking. In fact, the horse and saber are the inherent weapons of the cavalryman and when there is any chance of success by using them, they should be used. When he dismounts, the cavalryman loses not only his mobility and makes himself particularly vulnerable to a charge from his opponents, but he loses over one-quarter his strength from his fighting line. To keep his led horses mobile, one man must be left in charge of four horses, and, where a counter attack may be expected, a guard must be left for these horses.

In the course of a campaign, a great many situations are met where either the dismounted or the mounted attack would probably be successful, but the true cavalryman will instinctively use the latter method and by so doing, the fruits of his victory will generally be greater both in the demoralization caused in the ranks of the enemy and the greater morale which his own force is bound to possess.

It may be true that if cavalry charges unbroken infantry in front it risks complete destruction, but even so, the time may come during a battle when that risk must be run and the effect of the charge will be well worth the sacrifice; but a careful study of the charges made in war against supposedly unbroken infantry lines will show a surprisingly small loss to the attacking cavalry as compared to the results accomplished and also as compared to the loss expected when the charge was made.

Probably the most perfect example of the decisive action of cavalry on the battlefield is that at Naseby where Cromwell so completely defeated the Royalists. After that the English cavalry deteriorated but we find it coming to the front again in Marlborough's time.

At the battle of Blenheim, we find cavalry on the flanks of the infantry until within 500 or 600 yards of the enemy, when they charged the hostile cavalry.

This method of using cavalry was the forerunner of the modern cavalry action, for if the opposing cavalry was defeated, then, theoretically at least, a part of the victor's force was to pursue the beaten horsemen while the greater part turned on the flanks and rear of the enemy's infantry, I say theoretically because, as a matter of fact, the victor generally kept after the beaten horsemen and was lost to the battle for the rest of the day.

In our own great Civil War, while the development of the cavalry both North and South taught the world many things, still we cannot go to this war to prove that cavalry can charge infantry, for there is nothing recorded of large cavalry masses charging infantry.

However, there is a reason for this. It must be remembered that, while the men from the south and west were generally good horsemen for the cavalry there was no training such as is necessary for pure mounted action. Regiments were organized and shipped to the front, there to obtain such training as was possible in front of the enemy. There was no perfect discipline nor was there perfect mastery of the cavalry unit such as a leader must have in order to lead that unit and have it under such perfect control as to use it as he wishes.

But does anyone imagine that, if either side possessed a well trained, well disciplined cavalry, such brilliant leaders as J. E. B. Stuart, Sheridan, Forrest, or Fitzhugh Lee would not have given us examples of charging infantry?

It is not desired to advance the theory that cavalry should always fight mounted. On the contrary, the times are so numerous when cavalry should fight dismounted that care is necessary to prevent it from thinking and training as mounted infantry.

It may have to fight dismounted at night when in cantonment or bivouac, guarding bridges, defiles, groups of houses or barricades. At the beginning of a battle, it may have to cover a flank threatened by an unexpected turning movement by defending a position until the infantry has time to come up to resist the attack; in defending batteries which it supports, or a

parked convoy which it guards; during a battle, it may be ordered into any part of the fighting line to prevent a threatened defeat and thus fight dismounted until infantry reserves can take its place; when operating on the enemy's flanks, a surprise fire at from 1,000 to 1,500 yards on the flank of the enemy's reserves, especially when the terrain does not permit of mounted action. Cavalry will have to seize and guard against hostile cavalry, more or less numerous, bridges, defiles and important points, in order to permit our columns to deploy.

However, even in these instances it is not always necessary to dismount your whole force. Unless the situation is so critical that, in order to accomplish your mission, your reserves must be thrown into the line, a mounted reserve should always be kept on hand.

On the other hand, in mounted action it may be well to dismount part of your force and thus have fire action assist the shock action. This principle is well stated by General French of the British Army who says: "While a well posted squadron or two of dismounted men in a favorable position may greatly assist the action of cavalry against its own arms, it must never be forgotten that it is only by the employment of 'shock tactics' and the superior morale of the highly trained horsemen wielding sword and lance, that decisive success can be attained."

Following the strategical reconnaissance, it is believed that the cavalry masses should be united under one commander, to be used as circumstances dictate during the action and immediately thereafter. At the beginning of the action, cavalry may be required to hold important points until the arrival of the infantry. It may be sent to any threatened point in the line, there to act dismounted until the infantry can be brought up. It may be used to cover the flanks of the army engaged. It may be used mounted to charge hostile infantry, even at the expense of sacrificing itself, if so doing it can gain time for its infantry.

Wide outflanking movements ably led by an energetic cavalry commander will still be productive of great results by producing confusion in the enemy's rear, they will materially aid their infantry comrades in the enemy's front. Another great opportunity for cavalry on the modern battlefield will be that of

attacking the large mass of guns used by the enemy, and possibly only supported by small infantry forces.

The third duty of cavalry as an auxiliary of the infantry is that of completing the victory or, if the fortune of war should so declare, covering the retreat. Its use here begins on the battlefield but may end a great distance away.

The value of cavalry for the pursuit of a beaten enemy is incalculable. In fact, a victory *may* be rendered null and void, if the victor is without cavalry and, in case the last reserves have been thrown into the battle, no troops are available for immediate pursuit on account of the disorder and the terrible exertions made by the men during the battle.

"Look at Manchuria. Were you not surprised by the extraordinary lease of life of the Russian Army? Continually beaten; chased from one mountain crest to another; from one river to another; from the Taitse to the Taung-Ha-o; from Antung to Liauyang, from Mukden to Kerin; always destroyed, and like a modern Phoenix, rising from its ashes, continually in condition to begin again farther off. And yet it was not the Trans-Siberian Railway, with its quota of 500 men per day that was the cause of this weekly and monthly re-organization. Do not believe, moreover, that the reports of Japanese victories, undeniably true one day, were so on the succeeding day.

"In other words, as soon as the Russian line was forced, contact with the enemy was lost, the retreat was quickly organized, without a shadow of a pursuit, and without disorder—even without uneasiness. This is explained by saying that Kuropatkin was a great tactician, skilled in retreating. Could the Russian retreats have been effected as they were in the presence of even the slightest opposition . . .

What the Japanese lacked was a harassing force, and, because of this, the Russian bear, tormented always, never found his Waterloo.

The Russians gave way before well planned and well directed attacks; before a threatened attack on the flank when there was no chance for a counter attack; but they left in a leisurely manner on account of the enemy's lack of cavalry. The force was reorganized, ammunition was replenished, entrench-

ments were prepared, and they were all ready to begin over again with a loss of morale certainly, but never without hope

The great Japanese victories amounted to so little that, until the end of the war, the Russian soldier had never the impression of being beaten. His letters home showed that he had retreated but was certain that he would soon assume the offensive. This delusion lasted for twenty months, or until peace was declared. Would this have been the case had the Japanese been accompanied by a large, well trained cavalry?

Look at Jena—prepared, decided, and completed by the cavalry. What would Waterloo have been without Gneisenau and the cavalry? Certainly the pursuit would stopped at Genappe.

Von Verdy du Vernois in his book on strategy, speaking of Grouchy's pursuit after Ligny, severely criticizes the cavalry of Pajol and Exelmens and in conclusion says: "Above all else, a thorough peace training of the cavalry is necessary, for the results to be expected if this training is lacking, are here amply illustrated."

In our own great Civil War, suppose that Grant had not had Sheridan and his cavalry. Would there have been an ending of that bloody campaign at Appomattox?

On the other side of the picture, what was the value of the Prussian victory over the French First Corps at Froeschwiller? There was no pursuit and the First Corps was able to pass over the Vosges, reform behind the Mosel, embark at Neufchateau and come again to the front two weeks later. And at Spicheron, Von Steinmetz, he who was absolutely ignorant of the use of cavalry, was so surprised by his victory that he quickly put the Saar between himself and his conquered enemy and the latter commenced operations again ten days later.

What chance is there for the beaten army if it has no cavalry? The infantry is routed, the enemy's cavalry is at its heels and allows no time for re-organization. But what a difference if their cavalry is still in hand. This cavalry has not been under the awful strain of fighting for from a few hours to several days. It may have been in the conflict, but most of the time it has been off to one side under cover. The men are cool and collected. The order comes—either from the army head-

quarters or from the cavalry leader who sees his opportunity—to save the army. The cavalry charges, maybe to its utter destruction, but what matter if time has been gained for the infantry leaders to get their forces in some kind of order and also to organize a rear guard.

In this connection, remember again Du Presnil's charge at Vionville to cover the right flank of Frossard's Corps which was beginning to retire, and the charge of the First Guard Dragoons against the Second French Division of the Fourth Corps to cover the retreat of the 38th German Brigade.

But to go further, it is the duty of the cavalry with the horse artillery to cover the retreat in any case; using both mounted and dismounted action; cavalry armed with the modern arm is especially useful in this case for it is mobile and can remain farther from supports than can the infantry.

In delaying action, however, cavalry should take care not to allow a too close approach of the pursuing force. The delay must be only sufficient to cause a deployment and it must always act on the supposition that it cannot expect support from the infantry it is protecting.

CONCLUSION.

In conclusion, my whole idea has been to show a few of the rôles cavalry will be called upon to play in modern war and to prove that there are just as many opportunities for the true cavalryman today as there has been at any time in the past.

* * * * *

Our missions today are the same as they have been in the past, notwithstanding the improvements in fire arms and we must therefore train our cavalry to meet the conditions that we must expect in war.

A cavalryman's chief weapon should be the horse and the saber, and to use those weapons properly we must, as stated before, train the trooper in the use of the saber and train him to be the master of his horse at all times.

I quote here from "Volunteer Cavalry" an article just republished by the CAVALRY JOURNAL.

"We may say without boasting that at the close of the great Civil War in America the armament and training of our volunteer cavalry on both sides were more practical and efficient than those of any regular cavalry of Europe.

"If in drill and personal appearance many a crack regiment of the latter could surpass them, in a week's real hard campaigning over any country at haphazard, one of our regiments could have marched all around their opponents, decimating them without loss to themselves. Under the system of *raids* our cavalry, with a battery of flying artillery to each brigade, put the whole country in terror for a distance that would require a whole army to influence in Europe. Infantry and artillery of equal force we despised. The mobile and elastic dismounted skirmish line with artillery supports was far superior in destructiveness to the infantry line of battle, on account of its rapidity and dash.

"This is the bright side of the picture. I expose the dark with the greater readiness now because the fault is easily remedied in the future, and if so done, our cavalry would then be the best in the world.

"The fault is this:

"Had one of our cavalry regiments been put into a level plain with no arms but sabers, opposed to a like force of European heavy cavalry, especially cuirassiers, they would in all probability have been routed. With lancers opposed to them in the same manner their defeat would have also been nearly certain. *Deprived of fire arms*, our cavalry would have been overthrown.

"The fact is an unpalatable one to an American cavalry officer, and many will utterly deny it from *esprit de corps* and national vanity. But a fact it is, and both the reason and the remedy are simple.

"The reason was that our men had little or no confidence with the saber. The reason of that again was that they were never taught to use it properly."

In speaking of the mounted work during the first year of the war, the same author says: "In the first year of the war the Southern Cavalry displayed a marked superiority. On horse-

back they felt a home while the green levies from the North were in a strange and uncomfortable position."

Maude, in his "Cavalry, its Past and Future" has carefully traced the evolution of cavalry. In discussing the Prussian cavalry he shows that during the nine years immediately succeeding the treaty of Hubertsberg which followed the wars in which Seidlitz showed the world what cavalry *can* do, the Prussian cavalry reached their absolute zenith. Then in explaining its decadence, one reason stands out which will appeal to every American cavalryman. He says: "War seems very distant and the inspection very near. The more ambitious and practical an officer is, under such circumstances the more certainly will he devote his time and energy to the practice of movements which will tell in the latter. If then the inspector is wanting in activity or knowledge, the doom of any arm, but particularly of the cavalry is sealed."

That was true with the Prussian cavalry; it is true in the English Army. In our own army, how many times can each one of us remember that the cavalry post was inspected by an infantryman or an artilleryman, an infantry post by a cavalryman or an artilleryman, an artillery post by a cavalryman or an infantryman.

In order that our cavalry be raised to the standard which will be necessary in case of war, we must be given inspectors who are trained cavalymen and who will require the best efforts of our officers to be strained throughout the year to get their commands in the state of preparedness which should be insisted on.

Another thing which would be of advantage, to not only the cavalry but to the whole service, would be to have published a set of maneuver regulations for umpires regulating the decisions in regard to cavalry acting mounted. Too often has it been seen at maneuvers that a squadron of cavalry is put out of action in a few minutes by artillery fire, or the fire of a few well posted dismounted men. Such umpiring has had a bad effect on the cavalry of Germany, France, England, etc., and it has been bitterly complained of by v. Bernhardt, v. Kleist, Maude, and other prominent writers on cavalry. It cannot help but have a bad effect, when a young cavalry officer, imbued with the spirit

of mounted action, is brought to a sudden stop and told that his force has been utterly destroyed by some force which he cannot see. If umpires would only remember that rapidly moving cavalry is a very difficult target and that when moving over dangerous zones (as would be shown in actual battle by the effect of the hostile fire) it moves at a gallop dispersed—only to close in at the moment of decisive action, I am sure they would be more lenient.

In fact those of the other arms, as you train us to act during the maneuvers, only so much must you expect in time of war. Can you expect your cavalry to charge and save you when you have taught it that it is of absolutely no value on the battlefield?

For us to aid you in time of war you must aid us in time of peace and with a properly trained cavalry force, believing in itself and knowing that it is believed in, there is absolutely nothing which you may not require of it.

COMBAT OF CAVALRY VERSUS CAVALRY.

BY BRIGADIER GENERAL JAMES PARKER, U. S. A.

FORMATION FOR THE CHARGE.

"THE charge is the decisive and most important and characteristic cavalry movement" (Cavalry Drill Regulations). But the question is, what is a charge? Wherein lies its value?

We are told that the horse is the principal weapon of cavalry. On the other hand, we are also led to understand that battles and skirmishes, especially when cavalry is fighting against cavalry, have been won as a result of the effect solely of the cavalryman's sword, his pistol, his lance. We read in history of battles where enormous slaughter has been inflicted by the use of these weapons.

We read also of all kinds of formations in the charge. In the ancient days cavalry was often marshalled in solid phalanxes. Later they charged ten ranks deep. We hear of attacks made in four ranks, in three ranks, in two ranks, in one rank. During the American Civil War attacks were made with regiments in double rank, in line of columns of fours, or in line of platoon columns, having two, or three or four platoons, and in some occasions were made even in columns of fours.

By reading history we learn of instances where successful charges have been made horses moving at full speed. We also hear of successful charges where the horses have arrived at a slow gallop, a trot and even a walk.

In essays on the use of cavalry in war we are apparently expected to assume that no cavalry is of any account in which all the horses are not thoroughly trained and which can not move on the battlefield with the utmost precision and charge boot to boot. We know, on the other hand, that in no great war in which the cavalry is energetically used, has it been pos-

sible to avoid having the vacancies caused by the inevitable casualties filled with horses more or less untrained.

What is the charge? Do we overcome the enemy with the shock, or with the saber or pistol? Is it necessary to throw back the enemy's line, or is it sufficient to pierce it with our force? Is it desirable to combine these methods of meeting it?

I think, we can obtain a vivid idea of what a charge at full speed is like if we imagine a stampede of horses. A few horses lead, then follows a mass of horses, greater in depth than in width, each horse struggling to keep his distance from his neighbor. A man in front of such a stampede is in imminent danger, whether mounted or dismounted. He can probably dodge the leading bunch of horses, but if he escape the first line he is almost certain to be run into by one of the succeeding lines, and will probably be knocked down and trampled under foot. If a fence is met in the wild rush it will be carried away.

So, in the actual charge at full speed (thirty miles per hour) the horses are maddened with excitement. They stop for no obstacle. They avoid nothing. The riders also are carried away with excitement of the rush and the passion of combat. To imagine that under such circumstances a boot to boot, serried, line can always be kept is ridiculous in the extreme. Not only will some horses outrun others but many horses will bolt, others will be reined in. The accidents of the ground will retard others. There will be openings, gaps, intervals. When this mass of horses reaches the enemy the question as to whether he will be pierced or overthrown must to a large extent depend upon relative velocity and *depth*.

Moving at full speed a horse must have room not only to the right and left but to the front and rear. For, the run is a succession of violent leaps. If there is a rear flank, it will fall back to get room. This accounts for the almost irresistible tendency to open up the ranks in practicing the charge.

If, however, the runaway bunch of horses is moving only at half speed (sixteen miles per hour) they will gallop more closely. They do not require so much room. If they meet an obstacle, they seek to avoid collision by pulling up or turning aside. If the runaway herds meet each other going at half speed it is

not likely that they will plunge into each others closed ranks. The leaders will recoil. The horses in rear will attempt to pass to the right and left, circling their opponents.

So, in the actual charge against an enemy both opponents being at half speed, it will be very difficult to force the horses into the enemy's ranks. On both sides the ranks will in all probability be close, serried, "boot to boot." The tendency will be to recoil, to turn aside, to circle. In the same way that a horse will balk and stop suddenly at a high hurdle, he will refuse to collide with a serried line. On the other hand if the charge at full speed is made against an enemy moving at half speed the tendency is for the enemy's ranks to open up to avoid collision as well as to give way. This should result in his lines being pierced and thrown into confusion, leading to panic and rout. It is only when this has been accomplished that the sword can be used with effect.

It is evident that on nearing the collision the troopers must use every means to excite and urge the horse and prevent him from slowing up. For this purpose a vigorous use of the spur is necessary as well as of the voice. The men will cheer and yell, and the trumpets sound.

With the enemy in confusion and panic, his line pierced in many places, his troopers attacked in rear and flank as well as in front, the sword should reap its harvest.

In the charge the attacking line should be followed closely by a strong support, which by furnishing reinforcements when necessary, and by a nearly simultaneous charge on the enemy's flank aids in completing his overthrow.

Thus, the effect desired by the charge, while preserving the impenetrability of our line, is to pierce the enemy's line, to force him back in disorder, in order that the sword may be used to advantage on his fleeing masses.

It is said that in the charge one trooper hitting the enemy on the flank or rear is worth ten troopers in front. This might seem an overstatement, ordinarily speaking, but if the enemy is assaulted in front and at the same time in flank and rear, it is difficult for him to defend himself from both attacks. If the enemy's line is pierced, the troopers who have gotten through the enemy's line can assault the troopers of the enemy in flank

or rear. That is, they can do so with effect, provided these troopers are also being assaulted from the front. A trooper who is being threatened in front falls an easy prey to a swordsman who falls upon him from the rear. This is where the great advantage of successive ranks would come in.

What formation of the attacking line of a regiment is most suitable for this purpose? The double rank, the line of platoon columns, or the line of fours?

In considering the double rank formation some people have in mind a case somewhat like that of the wedge formation of a foot-ball team. But, we must remember that the rear rank does not, like the rear men in the wedge formation, impart more weight—more solidity to the shock. The rear horses are not pressing against the front horses. They must, as we have shown at fast gaits leave a space in front. The shock, then, of a double rank that is closed boot to boot is, first, the shock of the front rank against the enemy, then the shock of the rear rank against the front rank.

In the charge the chiefs of the second platoons followed by their troopers have time when they strike the enemy to so direct their march as to ride into such intervals as are left open by leading platoons.

But, as we have seen, boot to boot riding at full speed is usually impossible. Some rear rank troopers force their way up into the front rank. Some front rank men fall back into the rear rank. Some troopers besides fall behind, and what we usually obtain in the charge is a mass of stampeding horses.

The regimental formation in double rank is in fact similar to the formation of the "line of platoon columns," which is a line of troops, each troop being formed in a column of platoons. When each troop has but two platoons it differs from it only in the fact that in the latter formation the rear rank follows at platoon distance and is led by platoon commanders. But the troop of ordinary strength is usually formed in three or four platoons. The effect of this disposition is, then, that of a regimental line of three or four single ranks, each rank following at a distance equal to a front of a platoon. Note that these distances may be increased or decreased as desired.

It is evident that for many purposes the double rank formation offers many advantages and that it should be incorporated in our drill regulations, to be used when desirable. But, should, for that reason, the line of platoon columns be discarded? It is thought not.

At full speed, as has been said, all formations tend to break up and merge. But, at half speed, the gait used in the advance to the charge formations should be maintained. Moving at half speed, the extended gallop, of sixteen miles per hour or a mile in four minutes, the line of platoon columns is found to have the advantage that the horses of the rear ranks are not likely to run up on and injure each other; that they are able to see and clear obstacles, and that they are therefore able to gallop more freely.

The other platoons in rear can attack the troopers of the enemy who have managed to get through the line. The rear platoons on the flank, moving more or less independently, can envelope the enemy's flank.

In general, it is believed, the line of platoon columns is more mobile.

It is true that when each troop is in four platoons the line is deeper and thus more vulnerable to artillery or rifle fire. It is also true that the front of the regiment is less extended. But, on the other hand, the impenetrability of the three or four rank formation and the ability to stop the enemy and prevent his piercing the line is thought to be much greater than that of the two rank formation.

Taking into consideration the line of troops in column of fours so often used during the Civil War, it is evident that this formation has great piercing power, since the heads of the columns are narrow and the ranks of the enemy naturally open up so as to give passage for such a formation. But, it has this disadvantage—that moving at high speeds the horses of each four must fall back to obtain room to move and the column of fours is then immensely strung out. Further, the enemy may be able to force his way between these columns and thus pierce our line. It is probable that in practice this became a more or less solid and more freely moving formation, by the troopers of each platoon moving out to the right and left and closing up toward

the front during the charge. It would thus resemble a line of platoon columns each platoon having a convex front.

It will be evident, if we study the conditions of modern cavalry action, that no one particular formation can be rigidly insisted upon for the mounted charge against cavalry. The development of the long range of fire arms, their rapidity of fire, their accuracy, has made it possible for cavalry, threatened by a charge, having time to dismount and form up, and having a good field of fire, to repel the attack of horsemen as effectively as can "unshaken infantry."

This makes "Surprise," for the attacking force, indispensable. Surprise presupposes, ordinarily, cover. In fact the extended, open, treeless plain is no longer "cavalry country." On such a plain, approaching cavalry will be seen at a distance. By dismounting and using the rifle on foot the enemy will be able to decimate the attacking force and throw it into irretrievable confusion long before it reaches its objective.

A well trained regiment ought to be able to place a majority of its men dismounted, in a position to repel the charge of cavalry and to open fire, within two minutes or less after the alarm is given. It follows, then, to ensure success in the charge, that the attacking force should start under cover, in the advance to the attack, at a point less than two minutes distant from the enemy, or say less than 600 yards, the nearer the better. If the intervening ground is difficult, a much less distance becomes necessary.

For the approach to the point from which the attack is made, abundant cover, then is ordinarily necessary. Such cover will be usually afforded by woods, ravines, creek bottoms, villages, sunken roads, broken ground. In fact the secret approach requires a terrain, more or less, of obstacles to free movement, often necessitating the passage through them in lines of columns of fours, or even in a single column of fours.

When two hostile bodies of cavalry meet, under such conditions, it will often happen that the element of time is of more importance than perfection of formations.

Individual troops and squadrons should be assiduously drilled in preparation for such eventualities. They should be able to pass from line of columns of fours or from column of route

into a suitable charging formation in an instant, the leading organizations seeking to extend and consolidate the front of the regiment, the rear organizations to support and reinforce those in front.

Formations for the charge, then, should be such as can be taken quickly from column of fours.

With this preface let us formulate instructions for the charge.

THE CHARGE.

In the combat, Cavalry versus Cavalry, the charge is the most decisive form of attack.

Opportunities for the charge are infrequent and fleeting; to seize them requires quickness and daring.

The object of the charge is:

By the collision: To throw the enemy's squadrons in disorder and flight;

By the individual combat: To defeat and destroy the enemy's troopers.

Unless the collision is successful, the individual assault is likely to fail to produce adequate results.

THE COLLISION. CONDITIONS FOR SUCCESS.

(a) *Unobserved approach; favoring terrain; surprise; rapid advance; skillful use of scouts; prompt and energetic action of commander.*

Surprise demands an unobserved approach before moving to the attack. The approach ordinarily will be favored by abundant cover.

The rapid advance to the attack should be entered upon, ordinarily, at a point sufficiently close to the enemy to prevent him from obtaining time to dismount and open an effective fire. Since trained troops can dismount and develop an effective fire in two minutes, and, as the gait of an attacking force is at first slow, the distance to be covered in the rapid advance to the attack after discovery by the enemy should not, ordinarily, exceed 800 yards.

The rapid advance preliminary to the charge must be made without confusion and with unbroken ranks. The rate of speed of the advance should be suited to the nature of the intervening ground and the training and steadiness of the troops. Cohesion is as necessary as rapidity. Intermediate obstacles will greatly affect steadiness.

Previous to the attack the enemy's position should be reconnoitered, and the line of approach under cover selected by trained and skillful scouts, directed by an officer of experience.

In the rapid advance to the attack small detachments of scouts should closely precede the line, and whenever the ground is impassable, give the alarm. Scouts should also be employed on the flanks of the attacking force for security before and after the collision.

(b) *Suitable formation of attacking line; proper direction of attack; cohesion; success in piercing enemy's line; quick rally.*

To retain cohesion the charging gait (racing speed) should be taken only at the last moment before the collision. It should be the object in the shock to force the enemy back and to pierce his line in numerous places, without allowing any considerable portion of his force to penetrate our own. This accomplished, the enemy's troopers in the mêlée can individually be assaulted in front and rear, to their great disadvantage. To effect this necessitates *depth* in the attacking line. This can be obtained by adopting a charging formation of two or more ranks, as in the double rank line, or line of platoon columns. In order that the horses of the rear ranks shall move freely at the charge, and not be harassed by irregularities of the ground, each rank should maintain a sufficient distance (at least two horses lengths) from the rank in front. As soon as the enemy is reached and his forward movement stopped, the troopers of the platoons or ranks in rear should force their way to the front and if possible pass through openings in the enemy's line or around his flanks, in order to fall upon the rear of his troopers.

During the charge the leading officers should be supported and protected by the nearest troopers, who will close to a position alongside of them. The gait at the last moment before the shock should be the fastest run of which the horse is capable,

the excitement of the horse being augmented by the voice and a vigorous use of the spur. The horses of the enemy opposite the more advanced portions of the attacking line will involuntarily move aside to escape the impending impact. Through these openings the troopers of the attacking force should plunge, assaulting with the sword, in flank and rear, the enemy's horse-men.

The necessity for the racing pace just before reaching the enemy's line is urgent. Otherwise the horses, having themselves under control, will shrink from the impact, and will halt on reaching the enemy, making the charge a failure.

If the attacking line overlaps the enemy, the troopers in the overlapping flank, following their chiefs, should swarm around the enemy, assaulting his troopers in flank and rear.

Since at racing pace, "boot to boot" riding is often impracticable, impenetrability of our lines must be secured by a succession of ranks, and by requiring the troopers in the rear ranks to make for openings and fill up the space in the front ranks wherever they occur.

As the opportunity for a charge is always of short duration, and must be seized at once, time may be lacking to perfect formations.

Thus, in some cases, especially where the ground is difficult, it may be necessary to charge in line of fours with closed intervals, as in mass, the troopers of each platoon, just before the charge, opening out to the right and left, taking a convex or wedge shaped platoon formation, thus filling the intervals and obtaining freedom of movement in the charge for the horses. Solidity and piercing action are thus secured. This line of fours formation was at times employed in the American Civil War.

In order to give both piercing and holding action a combination of the line of fours and of the line has been suggested.

When a marching column of cavalry is surprised by a sudden mounted attack of the enemy, he must at once be met by a counter charge at full speed. Under such circumstances the most important consideration in time. With this in mind, take the most practicable formation—the enemy's attack may fail if he is attacked quickly and boldly confronted.

When the enemy is inferior in training and morale, a single rank formation may be employed, thus obtaining wide extension and enveloping effect.

In general, when practicable, the attack should be directed against the flank of the enemy; otherwise, against the weakest part of his line.

It is indispensable for the success of a cavalry combat that after the charge is completed it shall be possible at any moment to reform the scattered lines instantly, in order that they may be led against intact bodies of the enemy. Therefore, at the trumpet signal "Rally," troopers, no matter how employed, must rejoin their troops. This requires thorough preliminary training.

(c) *Employment of a Support and a Reserve.*

The regiment in mounted combat should be divided into a first line, a support and a reserve.

The object of the support is:

By moving in echelon to act as an extension of the first line, thus confronting that portion of the enemy's first line not otherwise engaged, and aiding in enveloping his flanks.

Or, to act as a second line, closely following the first line, part of the strength being detached to fill up gaps in the first line, or to extend it, when necessary.

Or, to attack the enemy in flank, while the first line attacks him in front.

Or, to attack the enemy's support, to prevent it from joining in the resistance to our first line.

In certain cases the support may be divided into several parts, so as to perform two or more of the above functions.

* * * * *

The object of the reserve is:

To withhold a part of the attacking force as a precaution against an unforeseen emergency.

In case the enemy is defeated, to provide a force of fresh troops to engage in the pursuit.

In case of a repulse, to act as a rallying point for retreating detachments.

In case of prolonged mêlée, to provide part of its force to aid in the attack as a second support.

The reserve should never be omitted.

The reserve will ordinarily conform to the movements of the first line, following it at the distance prescribed by the colonel.

The commander of the reserve should always be on the watch to prevent hostile detachments from dismounting and opening fire.

When such an intention is indicated the hostile detachment should be charged at once without waiting for orders from the colonel.

On the other hand opportunities to use the rifle in aiding the attack on the enemy or protecting the movements of the reserve should be seized, if security can be found for the dismounted rifleman.

The proportional strength of the first line, support and reserve must be determined by the conditions in each case. As a rule the reserve should contain at least one-third of the entire force. Normally, when the regiment is composed of three large squadrons as in the United States, the first line, the support and the reserve should be composed of one squadron each.

In an unexpected encounter with the enemy, the rear squadron should normally be the reserve. As a rule the support is involved in the attack made by the first line. It should follow the first line closely in order that the effect of the impact of the first line and support on the enemy should be felt nearly simultaneously.

There should be employed in the first line and support only a force sufficient for the immediate task on hand. The remainder should be withheld in the reserve. Undue haste in committing the troops of the reserve to the action should be avoided.

When the regiment is acting alone the position of the colonel is near the troops of the first line and support.

(d) *The Charging Weapon.*

In the normal mounted attack of cavalry against cavalry, the weapon to be used must be the sword. The point must be used.

Only in cases where fire action will not endanger friendly troops can the pistol be used.

(e) *Good Leadership. Mobility. Superiority to the Enemy in Training and Morale.*

Upon the leaders skillful estimate of the situation, prompt and correct decision, and resolute action largely depends success.

Vacillation and delay in entering upon the attack is fatal.

Even indifferently trained cavalry, having a confident, resolute, skillful, prompt leader is often superior in battle to well trained cavalry poorly led.

If the enemy's force is composed of troops of inferior morale and training such as is found in the States of a low degree of civilization, it should be easy for determined cavalry to ride them down, whether mounted or dismounted.

Generally speaking, in war attacks that do not promise real advantage to the general issue should not be made; in case of failure such combats depress the morale of the troops, who complain justly that they have been unnecessarily sacrificed. Complicated maneuvers do not usually succeed, and should be avoided. Methods and plans should be simple and direct.

Troops should be able to pass from a halt to the highest speed of the charge within a distance of fifty yards, moving with precision, in serried lines. The success of the charge, depending upon surprise, is often incompatible with a long advance.

In the same way troops in full career in the charge should be able to come to a halt within a few yards.

Upon the condition of the horses largely depends success in the attack.

Horses greatly fatigued, carrying heavy loads, are unfit for the supreme effort. To obtain mobility it is often desirable before entering into action to strip the saddles (of packs and saddle bags). If possible the horses should be cared for and rested before the battle.

THE MOUNTED CHARGE OF CAVALRY AGAINST INFANTRY OR AGAINST DISMOUNTED CAVALRY.

Well trained infantry are able to stop a charge by rifle fire, when the advance is under fire for a distance of 600 or more yards. The ability of dismounted troops to stop a mounted charge varies according to the number of rifles in action per yard front, and is increased by the employment of supports, reserves and successive lines.

As a rule mounted attacks on well trained, unbroken infantry should not be made.

In the problem of the mounted attack on dismounted troops of indifferent training and poor morale, the following should be taken into consideration.

Assuming an advance of 500 yards over open ground, and comparing the attack mounted with the advance by rushes followed by the charge dismounted, we find:

That the mounted man at the extended gallop will present a full target for about one minute, and the dismounted man will present a full target for about three minutes, and a lying down target for ten minutes or more.

To the rifleman in front, the target presented by the horse and rider, is apparently, in size, about three times that of the foot soldier.

In the mounted charge the rush of the horse makes it less probable that the attack will be halted before it reaches its objective.

The dismounted advance by rushes is aided by platoon fire of the alternate platoons.

During the mounted advance, on the other hand, the enemy receives no casualties.

On reaching the enemy's line the mounted attack finds itself at a great disadvantage, as compared with the dismounted attack, in the use of weapons.

Nevertheless, against inferior, poorly shooting troops, deficient in self-confidence, liable to panic, an opportunity often offers itself in war to make a successful and decisive mounted attack against infantry, especially when the mounted troops are closely supported by a dismounted force.

The following conditions favor the mounted attack on dismounted troops:

Unobserved approach; favoring terrain; opportunity to form for the charge under cover a short distance in front of the enemy's line; surprise; limited distance to be crossed; absence of obstacles to the advance; lack of depth to enemy's formations; limited field of fire of the enemy; use of dismounted detachments on flanks to keep down enemy's fire; enemy out of ammunition or in disordered retreat; preparation by artillery fire.

The attacking force should be divided into numerous successive lines of mounted skirmishers following each other at short intervals at full speed, the leading lines charging through the enemy's first line and attacking his supports; the rear lines taking possession, dismounted, of the enemy's position, a reserve being held in hand for emergencies.

In the attack mounted on dismounted cavalry, a strong detachment should be detailed for the purpose of seeking and capturing the led horses of the enemy.

Cavalry charging foot troops must be prepared after the collision to complete the discomfort of the enemy by using the rifle fighting on foot. The sword or pistol is no match for the magazine rifle. After the charge the mounted troops seizing favorable positions must continue the fire action instantly in order to complete the defeat, dispersion and capture of the enemy.

Opportunities for successful mounted attacks on infantry are rare. Such attacks are liable to fail except where the infantry of the enemy is infirm or has lost its morale.

Such opportunities may occur when the enemy, in column of route, and in a defile, allows himself to be surprised. In such an eventuality a column of cavalry, charging through the defile, has the advantage that it is likely to encounter the fire of only the foot troops in its immediate front.

Or, when an isolated infantry camp is not protected by obstacles, and the commander has failed to throw out his outposts to a sufficient distance, and in consequence the camp can be rushed before the alarm can be acted upon.

Or, when the cavalry finds itself surrounded and in danger of capture by the enemy's infantry. In such a case it should charge the enemy's lines and fight its way out.

When time is lacking and the emergency is such that the enemy's resistance must be overcome at all hazards without regard to loss, the mounted charge often becomes inevitable.

RELATIVE FREQUENCY OF MOUNTED AS COMPARED WITH DISMOUNTED COMBAT.

It is evident, if modern history be studied, that opportunities for the mounted attacks come but seldom, in comparison with those for dismounted action. Dismounted action in future wars will be the rule, mounted attack the exception. If cavalry is energetically used, its rôle, in preceding the army, reconnoitering, screening, guarding its flanks and rear, attacking the enemy's communications, etc., will bring it in constant contact with the enemy, and furnish it with innumerable occasions for the use of the rifle. Such occasions will be found in the work of driving back the cavalry of the enemy; in delaying the advance of his bodies of infantry; in obstructing the march of his reinforcements; in occupying and holding bridges, defiles, etc., required for the passage of the army; in assaulting the detachments of the enemy guarding his depots, lines of communications, trains, etc.; in seizing and holding important positions in advance of the army; in attacking, during decisive battles of all arms, the flanks and rear of the enemy's line of battle; in reinforcing our infantry lines where weakest; in guarding our flanks and rear from the attack of the enemy's cavalry; during the pursuit, in harassing, attacking, delaying and cutting off the retreating forces of the enemy; in case of repulse, in protecting the retreat of the army.

All these occasions call for the use of the horseman and the rifle. The extension of modern lines of battle, and the development of aerial scouting, by presenting to army commanders at all times a nearly complete picture of the enemy's dispositions and movements, will greatly increase the utility of troops which

can move with the rapidity of the horse, and fight with the formidable efficiency of the rifle.

In conclusion it may be said that cavalry is an arm of opportunity; that no troops are qualified cavalry which have not extreme mobility and which cannot use, with effect, when the occasion arises, either the rifle, pistol or saber.



WHO FIRED THE FIRST SHOT AT THE BATTLE OF GETTYSBURG?

BY LIEUTENANT COLONEL EZRA B. FULLER, U. S. A.

SINCE the encampment at Gettysburg in July last, there has arisen again a controversy as to who fired the first shot at the famous battle, the fiftieth anniversary of which was so successfully celebrated at this reunion.

Ever since the opening of that great battle, on the morning of July 1, 1863, the surviving members of the Eighth Illinois Cavalry have claimed that an officer of that regiment, Lieutenant Marcellus Jones, had the honor of firing the shot that began the battle that was the turning point towards the final overthrow of the Confederacy.

While this minor point connected with that terrible struggle may be only of passing interest to the general reader, yet to at least two who are connected with the publication of this JOURNAL it is an historical item of great moment.

Mr. John C. Ketcheson, of the Ketcheson Printing Co. which has printed the CAVALRY JOURNAL for over twenty-eight years, was a member of that noted regiment, as was also the present Editor of the JOURNAL. At the time of the battle of Gettysburg, Mr. Ketcheson was a member of "G" Company of the Eighth Illinois Cavalry, and later was Sergeant Major of the regiment, while your Editor was the last recruit to join, during the last year of the war, this regiment.

Some thirty or more years ago, Lieutenant Jones and the surviving members of the picket post that was stationed on the Chambersburg Pike, near Marsh Creek, purchased a small plot of ground—about twelve feet square—alongside the turn-pike and immediately adjoining the spot in the middle of the road where he stood when he fired this opening shot of the battle. On that plot of ground these men erected a small monument to commemorate this, to them, great event.



MONUMENT MARKING THE SPOT WHERE THE FIRST SHOT AT THE BATTLE OF GETTYSBURG WAS FIRED.

In August last, there appeared in the *National Tribune*, a periodical devoted to the interests of the G. A. R., and which is read by thousands of the old soldiers of the Civil War, an article which claimed the honor of firing the first shot at Gettysburg for one Corporal Hodges of the Ninth New York Cavalry.

To this article Mr. Ketcheson replied in an article, which is in part as follows:

"In your issue of August 21, 1913, there appeared a very labored communication from Lieutenant Colonel W. G. Bentley, Ninth New York Cavalry, settling conclusively, in his opinion, the controversy as to who *'fired the first shot at Gettysburg, July 1, 1863.'* If he was so very anxious to establish the *'importance of being right,'* why did he not call on the Eighth Illinois Cavalry to make good their claim which he must have known that they have made for fifty years and which has never before been seriously questioned? The principal actors were then alive, and I have no doubt they could have, beyond question, convinced Colonel Bentley and his party of the fallacy of their claim. The Eighth Illinois have always considered their claim to this honor so well established that the flimsy basis on which other claims were made needed no contradiction from them. Colonel Bentley seems to have ignored all official reports, maps, etc., and relies solely on the statement of Corporal Hodges and *'New York at Gettysburg.'*

"Now let us state a few facts—official facts—and see if there is not a bare possibility of his being mistaken. Lieutenant Jones and his comrades of the vidette post that was stationed three miles out from Gettysburg on the Chambersburg Pike went to the trouble and expense of purchasing the ground as near the spot—the middle of the road—as practicable from where the shot was fired, and built a monument thereon. Would any sane men have done that if they were not sure of their contention?

"Major Beveridge* who was in command of the Eighth Illinois Cavalry on July 1, 1863, on the occasion of the dedication

*General John L. Beveridge who was afterwards Colonel of the Seventeenth Illinois Cavalry and Brevet Brigadier General U. S. Volunteers. After the Civil War, he held several important positions connected with the City of Chicago, and later was Lieutenant Governor and Governor of Illinois.

of the monument erected by the State of Illinois in honor of the Eighth Illinois Cavalry, said in his address:

'On the afternoon of June 30, 1863, the First and Second Brigades of Buford's Division of cavalry marched through Gettysburg. The First Brigade—Gamble's—turned to the left, marched out the Chambersburg Pike and encamped in the little valley between this ridge and Seminary Ridge on the east. The Eighth Illinois was in front and south of the Pike; the Eighth New York was camped in its rear, the Twelfth Illinois, the Third Indiana and Calef's Battery were camped north of the Pike.

(This formation is verified by Bachelder's official map which was recognized by General Meade and all the principal division and corps commanders as being correct.)

'The Eighth Illinois sent a squadron out on the Chambersburg Pike two miles and picketed the ridge east of Marsh Creek; one post was on the Pike, two posts were north of the Pike, three posts were south of it and one post was in advance on the Pike and at the blacksmith shop near the bridge. Devin's Brigade, the Second, picketed to the north and northeast.

* * * * *

'Early in the morning of July 1, 1863, our pickets on the ridge east of Marsh Creek observed clouds of dust rising at the foot of the mountain over Cashtown, some seven miles away. * * * As the enemy neared the stone bridge across Marsh Creek, an officer who was riding at the head of the Confederate column halted by the stone bridge coping to allow his men to pass. Lieutenant Marcellus Jones, now postmaster at Wheaton, Illinois, who was in command of the Eighth Illinois picket line, standing in the Pike, took the carbine of Sergeant Shafer, raised it to his shoulder, took deliberate aim at the officer sitting on his horse and *'fired the first shot at the battle of Gettysburg.'*

* * * * *

'Other claimants there may be. * * * Their claims are preposterous. From investigation, I am satisfied that to Captain Jones belongs the honor of firing the first gun at Gettysburg.

burg, on the morning of July 1, 1863, as the enemy advanced to give battle. He opened the fight.'

"Colonel Gamble,* Eighth Illinois Cavalry, in his official report says:

'About 8 o'clock on the morning of the first instant, while in camp at the Seminary building, the officer commanding the squadron on picket in front gave me notice that the enemy, consisting of infantry and artillery in column, were approaching his pickets from the direction of Cashtown, with deployed skirmishers in strong force, about three miles distant. This information was immediately communicated to the General commanding the division, who ordered my command to be in immediate readiness to fight the enemy. My brigade, consisting of the Eighth New York, the Eighth Illinois, three squadrons of the Third Indiana, and two squadrons of the Twelfth Illinois, about 1,600 strong, together with Tidball's battery of the Second U. S. Artillery, was placed in line of battle about one mile in front of the Seminary, the right resting on the railroad track. * * * This brigade had the honor to commence the fight in the morning and close it in the evening.'

"Colonel Devin,† in command of the Second Brigade of Buford's division, of which the Ninth New York was a part, in his official report says:

'On the morning of July 1st, the pickets of the First Brigade on the road to Cashtown, were driven in by a heavy force ad-

*General William Gamble was Colonel of the Eighth Illinois Cavalry, but was in command of the First Brigade of Buford's Division at the battle of Gettysburg. He originally served as an enlisted man in the old First Dragoons from March 10, 1839, to August 6, 1843, being Sergeant Major of the regiment when he was discharged. He was Lieutenant Colonel of the Eighth Illinois Cavalry on its organization in September, 1861. He was appointed Brigadier General of Volunteers in September, 1863, and was mustered out in March, 1866. Upon the reorganization of the regular army in 1866, he was appointed Major of the Eighth Cavalry, and died of cholera on the Isthmus of Panama while en route to join that regiment.

†General Thomas C. Devin, who commanded the Second Brigade of Buford's Division at the battle of Gettysburg, was then Colonel of the Sixth New York Cavalry. On the reorganization of the regular army in 1866, he was appointed Lieutenant Colonel of the Eighth Cavalry; he afterwards became Colonel of the Third Cavalry; he was a Brigadier General of Volunteers and Major General by brevet.

vancing from that direction. The Second Brigade was ordered to prepare for action and form on the crest of the hill on the right of the First Brigade. I immediately formed as ordered. * *

"Scarcely any two of the reports agree as to the exact time when the engagement in the Cashtown road commenced; but all agree that the first advance of the enemy was that of General Heth's division on the Chambersburg Pike.

"Major General Heth, C. S. A., commanding the advancing column, in his official report, says: 'My division, accompanied by Pegram's battalion of Artillery, was ordered to move at 5:00 A. M.' As he was then five miles away, this would naturally bring him to Marsh Creek at about 7:30 A. M. as claimed by Lieutenant Jones, and his comrades.

"The Historical Guide Book of the Battlefield of Gettysburg, by Luther W. Minningh, says:

"Heth's Division, consisting of Davis's, Archer's and Brockenbrough's Brigade, joined Pettigrew's Brigade at Marsh Creek. Here the first gun of the battle was fired. Buford's videttes, a detachment of the Eighth Illinois, opened fire as the Confederates moved forward to cross the stream.'

"It is quite evident from the foregoing that the enemy was there at about that time, and that the '*Battle of Gettysburg*' was much in evidence from that time on—not before.

"Now, in view of all of these official reports and statements of disinterested parties who were actors on the field at that time, the claim of Corporal Hodges, made twenty-five years later and unsupported by any evidence, that he was on the Chambersburg Pike at the Willoughby Run crossing at 5:00 A. M. on July 1, 1863, and there exchanged shots with the enemy, is simply preposterous. There is not the slightest intimation or evidence of any kind in any of the reports that any of the enemy—cavalry or infantry—were within five miles of that point at that hour. Just think of it, comrades of the First Brigade, a Corporal of the Ninth New York which was stationed on the Mummasburg Pike at that time, claims that he was on the Chambersburg Pike at a point located between our picket line and our camp and there exchanged shots with the enemy! Do any of you of the First Brigade remember the circumstance? And this in the face of the fact that two regiments and a battery of this brigade were camped north of the Chambersburg Pike, as all statements,

official maps, reports and the monuments show was the case. And then to have this absurd and preposterous claim endorsed by the 'Gettysburg Battlefield Memorial Association' adds insult to injury.

"The Eighth Illinois has honors galore and would spurn the thought of claiming that which was not their just due, and are only astonished that so gallant a body of comrades as the Ninth New York should countenance such a claim which is made on so chimerical a basis.

"What the Eighth Illinois claims, and that we think we have clearly established, is the following: That they did picket duty on the Chambersburg Pike on the night of June 30, 1863; that they did have a vidette post near the Marsh Creek bridge on the night of June 30th and the morning of July 1, 1863; that they first discovered the enemy—Heth's Division—as they advanced on the Chambersburg Pike to give battle; and that Lieutenant Jones did fire at them, and to him belongs the honor of firing the first gun at the opening of the battle of Gettysburg.

"We respectfully submit that we ought to be left in peaceful possession of that glory. It is always *'important to be right.'*"

In addition to the above quotations from official reports made by Mr. Ketcheson, the following extract from General Buford's report of the battle of Gettysburg tends still further to substantiate our claim, but it also illustrates fully what well trained cavalry can do on the battlefield. These regiments of volunteer cavalry of the Cavalry Corps of the Army of the Potomac had thoroughly learned their trade in the most gruelling of experiences during the two preceding years and had become confident, especially after their work at Brandy Station and Beverly Ford in the preceding June, in their ability to hold their own not only against the enemy's cavalry, but also that they could, in an emergency, fight on foot against infantry as well.

In his report, General Buford* says:

*Major General John Buford was a graduate of the Military Academy of the class of 1844. He served in the old First Dragoons prior to the Civil War and was a Captain of that regiment on the outbreak of the war. He was appointed a Brigadier General of Volunteers in July, 1862, and Major General of Volunteers July 1, 1863, as a reward for his services on that eventful day. To him and the officers and men of his division belongs the glory of having held the enemy in check until the arrival of the infantry, and probably of securing the line on which Meade afterwards made his successful stand.

"On July 1, between 8:00 and 9:00 A. M., reports came in from the First Brigade—Colonel Gamble's—that the enemy was coming down from towards Cashtown in force. Colonel Gamble made an admirable line of battle and moved off proudly to meet him.

"The two lines soon became hotly engaged, we having the advantage of position, he of numbers. The First Brigade held its own for more than two hours, and had to be literally dragged back a few hundred yards to a position more secure and better sheltered. Tidball's battery, commanded by Lieutenant Calef, Second U. S. Artillery, fought on this occasion as seldom witnessed. The First Brigade maintained this unequalled contest until the leading division of General Reynolds' Corps came up to its assistance, and then most reluctantly did it give up the front."

The following additional quotation from General Gamble's report is interesting:

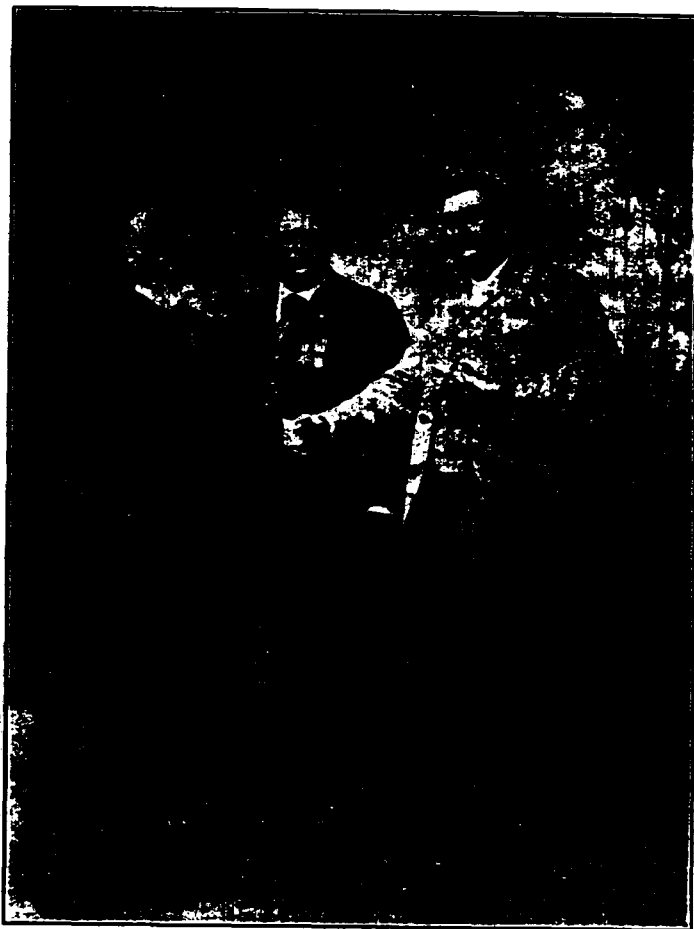
"The enemy cautiously approached in column on the road, with three extended lines on each flank, and his and our line of skirmishers became engaged, and our artillery opened on the enemy's advancing column, doing good execution. The enemy moved forward; two batteries opened on us, and a sharp engagement of artillery took place. In a short time we were, by overpowering numbers, compelled to fall back about 200 yards to the next ridge, and there make a stand.

"In the meantime our skirmishers, fighting under cover of trees and fences, were sharply engaged, did good execution, and retarded the progress of the enemy as much as could possibly be expected, when it is known they were opposed by three divisions of Hill's corps. After checking and retarding the advance of the enemy several hours, and falling back only about 200 yards from the first line of battle, our infantry advance of the First Corps arrived and relieved the Cavalry Brigade in its unequal contest with the enemy."

Lieutenant John H. Calef,* Second U. S. Artillery, in his

*Lieutenant Calef was graduate of the Military Academy of the class of 1862. He served through all the grades up to Lieutenant Colonel in that regiment and was retired, after forty years' service, in 1900. He was advanced to the grade of Colonel under the Act of April 23, 1904. He died at St. Louis, Mo., January 4, 1912. The battery which he commanded at Gettysburg, "A," was the same which Grimes commanded at the battle of Santiago in 1898.

report of the part taken by the battery under his command at this battle, speaks of his battery having "fired the first gun which opened the sanguinary battle of Gettysburg." He, of course,



CAPTAIN JONES (1), COLONEL McCARTY (2), PRIVATE KELLY (3).

referred to the first artillery fire, as he speaks of the skirmish fire that had preceded his taking position.

The photograph from which the accompanying reproduction was made was taken on the occasion of the dedication of the

monument erected by the State of Illinois to commemorate the services of the Eighth Illinois Cavalry at the battle of Gettysburg and to mark the line where they made the gallant defense.

Colonel W. M. McCarty, of the First Texas Legion, who led the advance of the Confederate column from Cashtown on the morning of July 1, 1863, and who rode the gray horse above mentioned, was present at the dedication of this and other monuments on July 1, 1891. He there heard of Lieutenant Jones and his claim, looked him up, and became satisfied that he was the one who fired the first shot at Gettysburg, and that he (Colonel McCarty) was the officer at whom Jones fired. Colonel McCarty then suggested that the three surviving members who participated in that event that were then at Gettysburg have their photographs taken, which was accordingly done.

The person on the left—No. 1—is Captain Jones; No. 3, is Private Thomas B. Kelley of Co. "E," Eighth Illinois, and No. 2 is Colonel McCarty. Jones was afterwards promoted to his captaincy and retained that rank until mustered out at the close of the war. He died at Wheaton, Illinois, in 1900. Colonel McCarty and Private Kelley are still living. Private Kelley was one of the videttes stationed on the Chambersburg Pike in advance of the picket line and who first gave the alarm causing the first shot at Gettysburg.

In a letter of recent date, Private Kelley gives the following account of the circumstances connected with this event:

"I, with Private James O. Hale and Sergeant Levi S. Shafer, all of Co. "E," constituted vidette post No. 1 which was stationed on the Pike and in advance of our line. Lieutenant Marcellus Jones, of the same company, was in command of the reserve some fifty rods or more in the rear. We, Hale and I, went on post at 6 o'clock A. M. on July 1, 1863. Scarcely had ten minutes elapsed after we had relieved the other men when clouds of dust were noted rising above the horizon some three miles away which widened and broadened to a mile or more in breadth. In some half or three-quarters of an hour later a distinct line of dust of nearby troops could be seen, and soon the head of an approaching column came in sight with the Confederate flag in front.

"Sergeant Shafer being temporarily absent, I left Hale, with orders to report to him that I had gone to give the alarm, I jumped on my horse, galloped back to the reserve, which distance was quickly covered, and gave the alarm. Lieutenant Jones vaulted into his saddle, shouted for every man to get to the front at the outpost, and furiously dashed to the front, I following him. On reaching the vidette post, he leaped from his horse and threw the reins to Hale. He then took Sergeant Shafer's carbine, who had returned to the vidette post, and placing it in the fork of the rail fence, took deliberate aim and fired at the mounted officer at the head of the column." *Re*

The Eighth Illinois Cavalry was organized in September, 1861. All of its service was in the Army of the Potomac, where it participated in every campaign and made a record of which its surviving members are justly proud.

Its first colonel was John F. Farnsworth, who for many years before, during and after the Civil War, was a member of Congress from Illinois. He was appointed a Brigadier General of Volunteers in November, 1862, but, his health having become impaired by the hardships of the Peninsula campaign, he resigned and went back to Congress, where he remained for ten years.

Elon J. Farnsworth, a nephew of General Farnsworth, was the first Adjutant of the Eighth Illinois. He became a Captain in December, 1861, and was appointed a Brigadier General of Volunteers on June 29, 1863. Four days later he was killed while gallantly leading a charge on the last day of the battle of Gettysburg. He was one of three captains of cavalry who were made brigadier generals on that same day, the other two being Merritt and Custer of the regular service. Of him General Pleasanton said, in his report of the battle of Gettysburg: "It was in one of these brilliant engagements that the gallant Farnsworth fell, heroically leading a charge of his brigade against the Rebel infantry. Gifted in a high degree with a quick perception and a correct judgment, and remarkable for his daring and coolness, his comprehensive grasp of the situation on the field of battle and the rapidity of his actions had

already distinguished General Farnsworth among his comrades in arms. In his death was closed a career that must have won the highest honors of his profession."

In addition to General Gamble, the others of that regiment who afterwards came into the regular service are the following:

George A. Forsyth—"Sandy." General Forsyth served as a private of the "Chicago Dragoons" in the three months service from April 19th to August 18th, 1861; and as First Lieutenant, Captain and Major of the Eighth Illinois from September 18, 1861, to February 1, 1866. He was appointed Major Ninth Cavalry on July 28, 1866; promoted to Lieutenant Colonel Fourth Cavalry June 26, 1881, and was retired from active service on March 25, 1890. He was promoted to the rank of Colonel on the retired list on April 23, 1904, under the Act of that date. He served for many years as Military Secretary and A. D. C. on the staff of General Sheridan, on whose staff he also served during the last year of the Civil War. He received brevets of Lieutenant Colonel and Colonel of Volunteers for distinguished service during the Civil War, and that of Brigadier General for gallant and meritorious service at Arickaree Fork of the Republican River on September 17, 18, 19 and 20, 1868, against hostile Indians. General Forsyth is now living at Rockport, Mass.

Louis H. Rucker served as Private of the Chicago Dragoons during the first three months of the Civil War, and, from September 18, 1861 to February 9, 1864, as Private, Sergeant and First Sergeant of the Eighth Illinois Cavalry. He was commissioned Second Lieutenant of the Eighth Illinois February 9, 1864, and as First Lieutenant on November 26, 1864, which rank he held until mustered out. He was appointed a Second Lieutenant Ninth Cavalry July 28, 1866, and served in all the grades in the regular service up to and including that of Brigadier General. He was retired from active service April 19, 1903, and died on July 9, 1906.

Earl D. Thomas who was Sergeant Major of the regiment when discharged, in April, 1865, to enable him to enter West Point, and who was succeeded as Sergeant Major by the before mentioned Mr. Ketcheson. Thomas served in all of the

grades from Second Lieutenant to Brigadier General, and is now on the retired list of the army.

David R. Clendenin was a Captain of the Eighth Illinois on its organization, and successively rose to the grades of Major, Lieutenant Colonel, Colonel, and Brigadier General of Volunteers. In the regular service he was Major Eighth Cavalry, Lieutenant Colonel Third Cavalry and Colonel of the Second Cavalry. He was retired from active service on April 20, 1891, and died March 5, 1895.

George H. Gamble served as Sergeant Major and Adjutant of the Eighth Illinois, and was appointed to fill an original vacancy in the Ninth U. S. Cavalry on July 28, 1866. He resigned from the service in December, 1869.

Ezra B. Fuller joined the Eighth Illinois while still a mere youth of sixteen, during the last year of the war. Later he succeeded Thomas as a Cadet at West Point, having been appointed thereto by General Farnsworth, and has been in the regular service ever since.



Reprints and Translations.

CHARGE OF CAVALRY IN BATTLE A THING OF THE PAST.

(From the *Louisville Evening Post* of January 23, 1914.)

THE proposition recently made at Washington to change the training of the cavalry of the United States Army to conform more nearly with the methods used by European nations, has drawn forth much comment, especially of a critical character.

General Basil W. Duke explained to the *Evening Post* the meaning of the proposed changes and his objections to them. General Duke was one of the most distinguished cavalry leaders of the Confederate Army, and the form of drill which he drew up for Morgan's cavalry, in which he was second in command, was eventually adopted by the War Department of the Confederacy for all of the Southern cavalry.

General Duke referred first to the use of cavalry on the battlefield at the beginning of the last century. "The main purpose of the cavalry in the days of Napoleon was to charge bodies of infantry, with the hope, which was usually fulfilled, of breaking their ranks. In those days the infantry was armed with shooting-pieces that had no accuracy beyond 150 yards, and were not extraordinary for their accuracy even at that short distance. If a body of cavalry charged upon them, the infantry could fire but one volley. Before they could reload their clumsy rifles, the horses and horsemen were upon them. The saber

was the weapon used by the cavalrymen, and at the close quarters at which they usually fought it was most effective.

CHANGED BY BETTER GUNS.

"This method of using cavalry is called shock action. Under the cavalry commanders of Frederick the Great and Napoleon it was highly developed. On the battlefield it could be depended upon to throw the enemy into confusion.

"But with the continual improvement of the guns in the hands of the infantry the cavalry charge necessarily became constantly less effective. The guns could be fired with greater accuracy at a greater distance. The weapons could be more rapidly loaded. In the Crimean War, it was apparent that the day for the use of cavalry for shock action on the battlefield was nearly past. In that war the cavalry had to charge through at least two volleys from the infantry before they reached the point to be attacked, and each of these two volleys, because of the superior accuracy of the guns, was far more dangerous than the single volley which had to be met fifty years earlier.

"Much the same state of affairs came about in the Civil War. The cavalry leaders of the South found that they knew nothing about the technique of the use of cavalry. They had to work out their own salvation.

MORGAN'S CHARGE AT SHILOH.

"At the beginning, the tendency was to use the cavalry mainly for shock action on the battlefield. But this was not long continued. One of the few successful cavalry charges on the battlefield was the charge of Morgan's cavalry at Shiloh. Even there the Confederates had the same experience that the cavalry leaders had in the Crimean War. They found that they could not reach the opposing line quickly enough to avoid the deadly fire of the rifles.

"Most of them wisely refused to use the saber in the charge. In the first place, there were but few of them that knew how to handle the saber. Even some of those who were experienced in its use adopted the weapon of the majority—the pistol and the short shotgun.

"Later in the war, the cavalry all charged with shotguns or pistols, and we found the innovation a great improvement over the drawn saber. But, as I have said, the use of cavalry for charging on the battlefield was practically abandoned before the war was much older, although small bodies of mounted men armed with pistols, were used in the battle.

SHOCK ACTION A BYGONE.

"It seems to me that with the improved rifle of today, a charge of cavalry for shock action would be nearly impossible on the battlefield. The proposition that we should train our men for shock action so that we would be able to meet the Europeans trained on a like principal, is illogical in the first place. We do not necessarily have to meet a certain attack by a similar counter-attack. In fact, a surprise would be distinctly more valuable. Surely there is no more reason for us to train our cavalry upon the European models than for the Europeans to train their cavalry upon our models.

"Not as much reason, in fact. For those European nations that are training their cavalry for use in shock action are training them in an antiquated and abandoned system.

"It is not true that the European nations are clinging to the shock action. Some of them may still be slumbering in the traditions of a century ago, but France, at any rate, has adopted many of the suggestions coming from the Civil War. About thirty years ago a number of French cavalry officers were sent to this country by the government for the purpose of interviewing the cavalry officers of the Civil War. They came directly to the West, for they said that they could learn nothing from the methods used in the Eastern part of the war, which were similar to their own methods. They were especially interested in Morgan's cavalry and the cavalry under General Forrest's command.

"They talked with many cavalry officers, and when they returned to France many of the innovations of the Civil War were introduced into the French cavalry, among other matters, the pistol, and the use of horses for rapid transportation to the point to be attacked.

"The fact that cavalry is no longer so well adapted to use on the battlefield as in days gone by, and that the old cavalry charge is passed, does not mean that all the worth of cavalry has departed. Cavalry is still indispensable.

WILL ALWAYS USE THE HORSE.

"The use of the horse mainly as a means of transportation, as was so constantly done in the Civil War when the cavalry would ride to its destination and then dismount to fight, can never be supplanted. A body of infantry will always move more slowly than a body of mounted men. The bicycle finds many places inaccessible that can readily be reached by the horse. Over good roads the bicycle and the automobile may be very useful in scouting duty but often it is bad tactics to keep to the main roads, and the automobile and the bicycle would be helpless in maneuvers through woods and over rough and hilly country. Nothing can supplant the horse as a means of moving a body of men quickly through an unknown territory.

"Even after the shock action for cavalry in the Civil War was abandoned cavalry had many uses. In scouting duty, in keeping open lines of communication, in cutting through the enemy's lines of communication, in unexpected raids rapidly consummated, for rapid transportation to and on the field of battle, the cavalry was unsurpassed.

"Our drill included a maneuver to assume double rank, but we never used it. The new plan to use the double rank is closely allied to the use of cavalry for shock action. The double line of horsemen has been found much less mobile and much less flexible than the single line. Its use was to double the power of a charge, but we found that it had no greater effect than the charge of the single line, and that it was liable to throw the charging body into confusion."

NOTES ON THE ORGANIZATION OF A CAVALRY DIVISION.*

THE cavalry division is the largest unit into which this branch of the service is organized. Since it is needful that the scope of its instruction and preparation should correspond to the requirements of the various classes of duties which it may expect to be called upon to perform, and which are clearly set forth in the "Regulations for Service in War," it is evident that its organization must be such as will enable it to satisfy the complex demands which will arise from its employment in war.

The truth is that organization, instruction, and employment in war, are three factors which are very closely related to each other. It is indispensably necessary that the first two of these factors should be properly attained in time of peace, in order that the cavalry division should be brought into a condition which will admit of its conveniently preparing itself for doing the work which is to be expected of it in campaign.

It appears that the principles which have a bearing upon the regulation of these factors are variously estimated and appreciated in different armies and it is therefore believed that it will not be inopportune to undertake a brief examination into the organization of their cavalry divisions, giving due consideration to their training and instruction and to the classes of duties which they are expected to perform, and seeking to obtain useful suggestions regarding the organization of our own cavalry.

* * * * *

One of the first questions to present itself is that regarding the permanent organization of the cavalry divisions including time of peace, this being a question which has been warmly discussed during the past few years and which still continues to receive attention in Germany.

*Translated from the *Revista di Cavalleria* for the War College Division, General Staff by Captain W. H. Paine, Second Cavalry.

At the present time, the German is the only one of the great armies of Europe, which, with the exception of the Cavalry Division of the Guard, has in time of peace organized its cavalry regiments into brigades only, these being attached to the infantry divisions.

It should be said, however, that the principal German authorities on cavalry subjects, with the exception of General von Bernhardt, are in favor of the organization of a certain number of cavalry divisions, even in time of peace.

The opponents of this system, and among these is to be counted the General Staff, in whose hands rest the decisions as to the courses of action to be adopted in regard to it, are not ignorant of the important advantages which it offers, some of them being readily admitted and indisputable. Among the principal of these advantages are quick mobilization and an intimate acquaintance between the generals, the other officers, and the troops. But there are, on the other hand, other and equally important advantages to be derived from the existing organization among them being:

The selection of general officers who have shown themselves to be the most competent since the numerous temporary divisions which are organized every year for the grand maneuvers, and for the special maneuvers of the different arms of the service, furnish opportunities for many generals to gain experience and to exhibit their respective abilities.

The inability of the enemy to certainly calculate upon the size of the divisions and upon the probable methods of their use and employment.

But it does not seem necessary to dwell at great length upon a question which is no longer of much interest to us, since in accordance with the best general opinion we have within the past few years maintained three divisions which we regard as being useful and desirable. And we have done even better, since our brigades are not even permanently organized, as they are both in France and Germany. There is, however, one important question which demands our attention, and this is the one regarding the proper composition and strength for the division.

Let us begin the consideration of this question by inquiring what has been done in this respect, in the principal European armies.

As has already been stated, the Germans have in time of peace only one division, the Guard Division, which consists of four brigades of two regiments each, with a total of thirty-two squadrons in time of war.

There are now one hundred and two regiments of cavalry in the German army, and since the guard division contains eight of them, there remain ninety-four others which are available for use in forming the cavalry divisions and for the divisional cavalry. Something will be said further on about the last of the above mentioned uses of the cavalry. However, it is not thought to be out of place to say here that there is in Germany, much discussion of the question as to the amount of cavalry which is needed by the infantry divisions and it is unanimously admitted that the assignment of a regiment of four squadrons according to the practice in the Franco-Prussian War, is much in excess of actual requirements. It has therefore, recently been proposed to assign only one squadron to each infantry division, and to create special detachments of "Meldereiter" for the services of scouting in the immediate vicinity of the division, and for orderly work and similar purposes which comprise the principal duties of divisional cavalry.

We may observe here, that the cavalry divisions of the army, if provided with artillery and machine guns, ought to be able to operate and sustain themselves independently except in the case in which resistance is offered by an enemy consisting of all three arms of the service, and which absolutely prevents an advance. In such a case, which might present itself for example, while gaining contact with very strong bodies of the enemy in positions, the "Regulations for Service in War," admit the desirability of assistance from infantry and bicyclists.*

*There is no organized detachment of bicyclists maintained in the German Army in time of peace, and none has ever been formed for use in their grand maneuvers. German military writers are in general opposed to bicyclists, because they require good roads and unable to travel across the fields. It therefore causes something of a feeling of surprise, to find this mention of their possible employment. This is the only mention which is made in the entire book of regulations regarding bicyclists.

From the little which has been said, it may be concluded that beyond doubt, the Germans have much which they desire to conceal from their probable adversary, France, in regard to such things as the strength and organization of their large units of cavalry. These units may be divisions, or perhaps reinforced brigades, they will be formed at the time of mobilization and there will be a large number of them.

In France there are eight cavalry divisions, not all of them of the same strength. The 1st, 2d, 5th, 6th and 8th Divisions consist of two brigades of two regiments each. The 7th Division has two brigades, one of them consisting of two regiments and the other of three. Finally the 3d and 4th Divisions each consist of three brigades of two regiments.

Therefore, five of the divisions have a strength of sixteen squadrons, one has twenty squadrons, and the remaining two have each twenty-four squadrons. The total is thirty-seven regiments with one hundred and forty-eight squadrons.

The other forty-four regiments, not including the ten regiments of African cavalry, are organized into twenty-one brigades, known as corps cavalry, each of these brigades consisting of two regiments with the exception of the 7th and the 20th, which have three regiments each. One brigade is attached to each of the army corps, that bearing the same number, with the exception of the Sixth Army Corps which has two of these brigades designated as the Sixth and the Sixth-Bis. (i. e., 6¹/₂).

One cannot help being struck by the disproportion between the numerical strength of the cavalry force which is to be assigned to the general work of the army, and that which is intended for the army corps. In the cavalry divisions from which are expected the execution of the most important strategical and tactical duties, there are thirty-seven regiments while there are to be forty-four regiments with the army corps. It is true that the regulations assign certain important functions to the cavalry, which is assigned to the army corps, but after all, these functions are limited and are not to be compared in importance with those properly pertaining to the cavalry divisions.

Therefore, among the topics of the day, which are receiving attention, are propositions for a new organization for the cavalry.

Without attempting to go into the details of these propositions, their substance is about as follows:

The abolition of the brigades of cavalry which are attached to the army corps, and which are declared to be almost useless. The fact is that each of these brigades would be expected to furnish two squadrons, one from each regiment, for service with the two divisions of the corps, thus leaving the cavalry brigades with but six squadrons each, and these of a strength almost ridiculously small for the accomplishment of any efficient and valuable work. Furthermore, one very important result of this method of using the cavalry is that it leads to the subdivision of a really very large force of that arm, into small fragments with all of the well known consequences which are always derived from such a course. A recent instructive example of the application of such a system can be found in the systematic subdivision of the Russian cavalry in the campaigns in Manchuria. This employment of small bodies and subdivisions has been much criticised, especially at the battle of Liao-Yang and at Mukden, where if the cavalry has been assembled in a large mass upon the plain at the right wing instead of being scattered in small detachments along the immense front of battle, it might have been able to play a decisive part in the conflict, while it did actually accomplish only a secondary part.

It is, therefore, proposed to gather all of the cavalry into cavalry divisions, with the exception of a small part of it, which should be assigned to the infantry divisions as divisional cavalry.

Up to the present time, no official steps have been taken which would indicate the intention of the French Government to increase the existing number of cavalry divisions. But the fact that during the period for summer training, numerous brigades of the cavalry assigned to the army corps have been assembled into divisions and given practice in the duties which are expected of the main cavalry force of an army, affords safe ground for the belief that in high military circles, there is being nurtured some intention that in case of war, there shall be made quite a different disposition of these brigades, or at least of a considerable number of them, from that contemplated in the arrangement of the present organization.

It is said that some consideration is being given to plans for the restoration of the Inspectors of Cavalry, which were abolished some years ago, with four or five brigades to be placed under their supervision. These inspectors would not only supervise and direct the instruction and training of the brigades during the year, but they would assume the command of the provisional divisions to be formed during the summer exercises. From this course would result two important advantages; one of them being that the inspectors general would thus become thoroughly acquainted with regiments, and would be correspondingly well known to them, the other being that there would thus become available a certain number of general officers of cavalry who would be well experienced in the management and command of their troops, the usual experience being that in time of war, there is a shortage of such general officers.

We may further remark, that in the grand maneuvers of last year, nearly every infantry regiment made use of eight mounted scouts, which appear to have rendered very useful services. It is now proposed to rely upon these infantry mounted scouts, having them permanently assigned to the regiments, it being thought that, as they will be trained and experienced with their own arm of the service, they should be able to discharge their proper duties in general, to better advantage than would be done by cavalry, and that on the whole the best results will thus be obtained. In consequence of these experiments recently completed in France, with mounted scouts, there is in Germany an inclination to organize the detachments of "Meldereiter," which have been mentioned.

From all that has just been said, it will be seen that we cannot state with certainty, precisely what form of organization would be adopted by the French cavalry in case of war, but it is safe to assume that there would be considerable changes from the existing peace arrangements, and the changes can be expected to result in a more advantageous employment of this arm of the service, and consequently, in the greater ultimate efficiency of the entire army.

In the Austro-Hungarian Army, not including the two "Landwehr" with their cavalry, there are forty-two cavalry regiments, organized into nineteen brigades of two regiments

each, with the exception of the 3d, 4th, 16th, and 21st Brigades which consist of three regiments.*

Fourteen of these brigades are organized into six permanent divisions which are designated by the names of the cities in which the division headquarters are located. The divisions are not uniform in strength and organization.

They are named and described as follows:

The Divisions of Kracovia and of Jaroslaw which consist of two brigades of two regiments each, a total of twenty-four squadrons for each division.

The Division of Temesvar, which consists of only two brigades, but one of them, the 4th Budapest, has three regiments, the 8th and 10th Hussars and the 12th Uhlans, making a total of thirty squadrons for the division.

The Divisions of Vienna and of Pozsony, each of which has six regiments, thirty-six squadrons, but the Vienna Division has three brigades of two regiments, while the Pozsony Division has two brigades each with three regiments.

Lastly, the Division of Stanislaw, consists of three brigades, two of which have two regiments each, while the third, the 21st Brigade of Lemburg, has three regiments. The Division, therefore contains seven regiments, or a total of forty-two squadrons.

In regard to the strength and composition of the cavalry divisions in the Austro-Hungarian Army, it may be observed that there is a variety from which to suit any taste. There are divisions having four, five, six and seven regiments, and therefore, containing twenty-four, thirty, thirty-six and forty-two squadrons, these squadrons being the largest that are found in any European army. Some of their brigades are of two regiments and some of them are of three.

The consideration of this most important subject will be taken up farther on in this article.

The remaining five brigades are called "independent," and are composed of two regiments each. They are under the command of the chiefs of their respective army corps.

*The brigades are numbered from 1 to 21, but the 2nd and 19th were broken up and have not yet been reorganized. The same thing is true of the Uhlan regiments, of which there are eleven, but their numbers run from 1 to 13.

But there are other considerable forces of cavalry in the Austro-Hungarian Army. The Austrian Landwehr contains six regiments of Uhlans, and in the Hungarian Landwehr, there are ten regiments of Hussars or "Honved." The latter only are organized into brigades of which there are four, the 1st, that of Szegled, and the 4th, that of Debreczen, having two regiments each, while the 2d, that of Budapest and the 3d, that of Pecs, have three regiments each.

The organization of these regiments is the same as that of the regiments of the regular army, the only difference between them being in the number of men who are kept under arms. The staffs and outlined strength of the squadrons and the larger units, are sufficiently ample, but the number of men to a squadron, is limited to from sixty-three to sixty-nine, while the number of horses is from forty-three to sixty. The men and the young horses receive the regular normal course of cavalry instruction and training. But when the term of instruction and training is completed, the surplus men not required to fill the organization, are permitted to go on leave, and the extra horses are turned over to citizens for use with a requirement that they shall be returned to the organizations within twenty-four hours after the issuing of orders calling them in. The term of enlistment is two years, which is the same as for all the other troops of the Landwehr service.

The special system of organization for these regiments would not in any other country, indicate either their capacity for quick mobilization or their cohesion and ready state of preparation for war. But the thorough nature of the provisions of their regulations in regard to the instruction of recruits and the training of young horses, the annual assembling with their organizations of the men who are on leave, and the calling in of the horses which have been intrusted to the proprietors of farms or country estates for the summer exercises, which extend over a period of four or five months, and the special conditions existing in the Austro-Hungarian dominions which possess in Galicia and Hungary an ample supply of men accustomed to horsemanship and of horses adapted to the requirements of military service, all warrant the most confident predictions that this cavalry force would be called out in case of war.

The fact is, that the cavalry of the two Landwehr together with the other troops of those bodies, forms a part of the forces of the first line. There is no doubt that it can be so regarded.

It remains to be mentioned that the cavalry brigades of the Hungarian Landwehr, the "Honved," are also nearly every year assembled into divisions for the maneuvers of the summer period, and this cavalry force, like that pertaining to the Austrian Landwehr, has participated in the grand maneuvers.

There also exists in the Austro-Hungarian Army, a body of one half a regiment, three squadrons, of mounted chasseurs of the Tyrol, and another similar body of mounted chasseurs from Dalmatia.

Through these two half regiments of mounted chasseurs, the ultimate design is made evident. In regard to the other fifty-eight regiments of cavalry, would any one readily fall into the error of concluding that from the manner of their organization in time of peace, it would be safe to assume what would be their formation and assignment to duties in case of war?

It must be considered that the entire military establishment of the Austro-Hungarian Empire with its skeletonized armies has until recently presented serious deficiencies in regard to shortage of men, and restricted resources in funds. In order to remedy these deficiencies, there are required at the present time, an expenditure of many millions in money and an increase in the annual contingent of recruits.

It must however be admitted that the cavalry, in so far as concerns its strength in men and horses, has not been at all affected by the troublesome conditions under which the other arms of the service have been laboring, at least this appears from here to be the truth. But it is certain that it is upon economic grounds that we should seek for the principal reasons for the organizations of the huge cavalry divisions which are stationed at places more or less near to the Italian and Russian frontiers for the purpose of guarding them.

It is for the same economic reasons that the regimental organization of six squadrons has been adhered to, although it is recognized that this makes the regiments too large. There has however finally been a plan proposed for reducing the regiments to five squadrons each.

For these reasons, and on account of still others which will be mentioned later on it is believed, as has already been stated, that the peace organization of the Austro-Hungarian Army affords no ground for much inference as to what its organization would be in case of war.

It is quite worth while to clearly point out that the Austrians are following the strictly correct and most advantageous systems of organization by the formation of real bodies or masses of cavalry, and that they are assigning the greater part of their cavalry regiments to the large cavalry units.

Let us now pass on to a consideration of the Russian cavalry. As it is desired to confine this article within the shortest limits no real examination, not even a brief summary, can be undertaken of all of the cavalry troops which are maintained by the Russian Empire for this would unavoidably consume too much space. However, it is not really necessary to do that in order to accomplish the purpose of this modest study, and it is thought that it will be sufficient to make a few remarks about the cavalry forces which the Russians maintain in Europe.

There are twenty-four divisions of Russian cavalry in Europe. They are as follows:

Two divisions of the Guards, fifteen divisions pertaining to the line of the army, one mixed division, one division from the Caucasus, and five divisions of Cossacks. There are also two independent cavalry brigades kept in Europe with five others in Asia.

The cavalry divisions consist normally of two brigades, one of them having two regiments of dragoons, the other one regiment of dragoons and one regiment of Don Cossacks, making a total of twenty-four squadrons for the division. The 1st Cavalry Division of the Guards forms an exception to the uniformity of this organization since it consists of three brigades, and it is to be understood that the Cossack divisions are wholly made up of Cossack regiments.

The two independent cavalry brigades stationed in Europe are each composed of two dragoon regiments of the regular line of the army.

In the military district of Warsaw there were formerly two cavalry corps, the 1st composed of the Fifth and the Mixed

Divisions, and the 2d composed of the Sixth and the Fifteenth Divisions, but if the memory of the writer is not at fault these corps have recently been broken up.

Therefore, all the Russian cavalry which is kept in Europe is organized into large units and is attached to the army corps. From this system there results certain notable advantages and certain serious inconveniences. The advantages arise from having the cavalry organized into strong divisions and independent brigades even in time of peace. The disadvantages and inconveniences show themselves at the opening of a campaign and become more and more evident during the progress of operations when it becomes necessary to make arrangements for furnishing the necessary cavalry for the armies and the divisional cavalry for the infantry divisions. It is thus that there arose the conditions which existed in the Russo-Turkish War of 1877-78, and which were repeated in the campaign in Manchuria in 1904-1905. One by one the Army Corps are deprived of their cavalry in order to advance it to the front for scouting or covering service. From some of the army corps there will be taken away a brigade or two or three regiments or one single regiment or, even two or three squadrons in order to provide detachments of cavalry to meet the necessities of the moment which have arisen in the cases of other army corps or infantry divisions which have been left without any cavalry at all. And this in turn leads to a continual subdivision followed by mixtures of the large and the small units. And as if all this were not enough of mischief there is the additional disadvantage of separating the troops from their own proper leaders who are acquainted with them and who are known to them and placing them under chiefs who have never seen them. And there is also a complete disorganization of the various units which have existed in time of peace.

In case of an important European war it is not improbable that in the plans for mobilization some account would be taken of the tendency to constant subdivision and intermixture which developed during the Russo-Turkish War. It is quite likely that steps have already been taken to fix upon the cavalry divisions which are to be assigned to the armies, and upon those regiments which are to be attached to the army corps and to

the infantry divisions. In connection with these subjects it is not thought desirable to dismiss without remark the fact that in respect to the organization and utilization of the cavalry there has been a repetition in the extreme Orient of the same grave inconveniences which were developed in the Russo-Turkish War and which were severely criticised or condemned by the European military writers who occupied themselves with the study of that campaign.

It is true that it was not believed in Russia until the last moment that the Japanese would dare to take the field against the Great Russian Empire and in consequence of this the preparations were incomplete and it became necessary to resort in great measure to improvised organizations and arrangements, one result of all this being that many months elapsed before the Russians succeeded in assembling their enormous mass of cavalry upon the theater of war. But after all when we consider the poor use which was made of the cavalry on the part of the commander in chief, by the army commanders and finally by the very generals of the cavalry themselves, there no longer seems to be anything very strange in the system of organization and employment which we find to have been adopted there, or that is to make a clearer explanation of the meaning, the assignment of the cavalry to the large units.

But it is at least true that in the Russo-Turkish War the very force of circumstances made it necessary to assemble some real masses of cavalry for use in such operations as cutting the communications of Plevna, for accomplishing the passage of the Balkans, and in executing the march to Constantinople. In the campaign in Manchuria, on the other hand, there was but one assemblage of a large body of cavalry when seventy squadrons were gathered by taking them here and there from the different army corps and they were then intrusted to the command of General Mischtschenko for that famous raid upon Inkou which resulted in the most absurd parody on that variety of operation.

It, therefore, appears to be clearly demonstrated by all that has just been said that it is not sufficient to have in time of peace the best possible organization, which is now the case with the Russian cavalry. It is most absolutely necessary that its dis-

tribution and assignment in the dispositions for battle in time of war should correspond to the nature of the requirements which it would be expected to fulfill in a campaign, and this should be prearranged in a clear and exact manner.

The past history of the Russians is certainly not lacking in useful material for their instructions. This is all the more true and pertinent when it is considered that we are studying an army which has at its disposal an almost fabulous amount of cavalry. In the standing army in time of peace there are twelve Guard Regiments, fifty-four regiments of dragoons and seventeen regiments of Don Cossacks of the first "Bando" or line, without counting the regiments of Orenburg Cossacks, those of the Ural, of Kuban, of Astrakan, of Terek of Siberia, of Semirjetschensk, of the Trans-Baikal, and various other independent half regiments or "sotnias" of Cossacks, all of the first line. In time of war there would be available from the regiments of the standing army and from the First Second and Third "Bandos" or lines there would be a mass of something like one thousand eight hundred squadrons and sotnias.

With such an enormous force of cavalry, not taking into account the regiments stationed in Asia since they would not be able to reach a European theater of war until after the lapse of a considerable period of time, it is evident that they would properly be regarded as hardly more than a surplus force of this arm. A predisposition to so regard it would arise from the large masses of cavalry which would be available for assignment to the armies, to the infantry divisions, and even to the army corps if it should be so desired. In all of the other armies of the world it is necessary to take into account the available number of regiments and squadrons but in the Russian Army there is no embarrassment except that of making a choice.

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Within the past two years the organization of the Italian cavalry has undergone substantial modifications. The former twenty-four regiments of six squadrons have been reorganized into twenty-nine regiments of five squadrons each. The number of squadrons has been increased from one hundred and forty-four to one hundred and forty-five, an increase which is really

of very little importance. What is of importance, however, is the fact that an actual improvement has been effected by making the regiments less cumbersome, more readily handled, and on the whole better adapted to the national terrain. Another item worthy of mention is the organization of three cavalry divisions each composed of two brigades of two regiments which is a measure that will result in inestimable advantages in the way of their preparation for war in time of peace and of their more efficient employment in war itself when a war does arise. The measure of the organization of the divisions has beyond doubt much more significance and importance than the reorganization of the regiments.

The Italian cavalry division is however quite a strong one, consisting of twenty squadrons. The organization of the three divisions has included twelve regiments, a total of sixty squadrons. The organization of the three divisions has included consisting of twenty squadrons. The organization of the three divisions has included twelve regiments, a total of sixty squadrons. There are remaining seventeen available regiments, with eighty-five squadrons, but the uses to which it is intended that these squadrons shall be devoted are not considered proper subjects for public discussion.

These seventeen regiments are not organized into either permanent or provisional brigades, but they constitute "groups." Two of these groups are under the supervision of major generals of cavalry, the remaining ones are under the surveillance, so to speak, of the major generals commanding the cavalry divisions.

This is of course only a temporary kind of organization which it was probably thought advisable to adopt in order to avoid any further increase in the heavy expense which was incurred through the reorganization of the cavalry, and also in order to avoid making any increase in the number of major generals of cavalry which were thus diminished by one. The writer confesses to a strong presentiment that this temporary arrangement will have the shortest practicable duration.

As has been said above it is not intended to enter upon any discussion as to what is to be the disposition of the above mentioned regiments of cavalry in case of war. But an attempt will soon be made to make a detailed study into the organization

of the Italian cavalry divisions, and occasion will also be taken to express the ideas of the writer in regard to the regiments not included in the division.

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The reader who may have taken the trouble to follow this article up to this point will certainly have observed that in the discussion of this subject of the organization of the cavalry divisions not even the briefest mention has been made of the artillery organizations and the machine gun detachments which would of course form an integral part of these divisions, neither has anything been said of the detachments of infantry and of bicyclists which may according to the regulations of all the modern armies from a part of the divisions or else be attached to them. In the Italian army the bicyclists normally form a part of the cavalry divisions. Most probably the reader will consider the avoidance of the mention of these topics as due to inadvertence or worse, but the truth is that this has been done purposely.

What good object can be attained by taking the time to discuss the horse artillery which would be joined to the cavalry divisions in accordance with the normal plans for forming these divisions in case of the mobilization of the armies? About the same principles are applied in this respect in all modern armies so that this artillery force is found to be in general about two, or at the most three batteries.

And what advantage is in prospect from the extended consideration of the use of machine guns about which there is so much enthusiasm, in view of the data gained from the "Polygon" and from the data gained in the position battles in Manchuria? All this furthermore at a time when all the armies of the world are engaged in the manufacture of machine guns with the intention of furnishing them to the cavalry and infantry. And there is not yet any definite information available as to the methods of their assignment and employment.

There still remains the important question of the infantry and of the bicyclists.

The field service regulations of the different nations indicate intentions to eventually attach some infantry to divisions of cav-

alry. In the French grand maneuvers of this last year there were actually one and even two battalions of infantry attached to the cavalry divisions, and not only to the divisions but even to the brigades serving with the army corps the same thing was done. Among French military writers it is continually being proposed and strongly urged that the existing detachments of bicyclists, of which there are now only five, be increased to five chasseur battalions for assignment to the large units of the cavalry.

In the Austro-Hungarian Army the normal organization of a cavalry division includes a battalion of chasseurs which is similar to the Italian plan of attaching a battalion of bicyclists to the division. The consideration of the subject of the Italian organizations of bicyclists will be undertaken in another article.

CEREBROSPINAL MENINGITIS ("FORAGE POISONING.")*

BY JOHN R. MOHLER, V. M. D., CHIEF OF THE PATHOLOGICAL DIVISION.

INTRODUCTION.

ABOUT 100 years ago (1813) there appeared in Württemberg a fatal disease of horses which was termed "head disease" owing to the pronounced manifestation of brain symptoms. The affection spread through certain sections of Europe from 1824 to 1828 and was described as "fever of the nerves." In 1878 the attention of the veterinarians of Saxony was attracted to the disease, which was then termed "nervous sickness," and within ten years it assumed an epizootic character. In fact the malady became so prevalent in and around Borna (near Leipzig, Germany) during the nineties that it became known as

*Bulletin No. 65, Department of Agriculture—February 14, 1914.

NOTE.—This publication gives information about a serious disease of horses; it is especially suited to veterinarians in the States west of the Mississippi River and in the South.

the Borna disease. The affection has spread like a plague on two occasions in Belgium, and has also exacted a heavy toll in Russia, Great Britain, Austria-Hungary, and elsewhere. Its appearance in America is by no means of recent occurrence, for the malady was reported by Large in 1847, by Michener in 1850, and by Liautard in 1869 as appearing in both sporadic and enzootic form in several of the Eastern States. Since then the disease has occurred periodically in many States in all sections of the country, and has been the subject of numerous investigations and publications by a number of the leading men of the veterinary profession. It is prevalent with more or less severity every year in certain parts of the United States, and during the year 1912 the Bureau of Animal Industry received urgent requests for help from Colorado, Georgia, Iowa, Kansas, Kentucky, Louisiana, Maryland, Missouri, Nebraska, New Jersey, North Carolina, Oregon, South Carolina, South Dakota, Virginia, and West Virginia. While in 1912 the brunt of the disease seemed to fall on Kansas and Nebraska, other States were also seriously afflicted. In previous years, for instance in 1882 as well as in 1897, the horses of southeastern Texas were reported to have died by the thousand, and in the following year the horses of Iowa were said to have "died like rats." However, Kansas seems to have had more than her share of this trouble, as a severe outbreak that extended over almost the entire State occurred in 1891, while in 1902 and again in 1906 the disease recurred with equal severity in various portions of the State.

NOMENCLATURE.

There has always been considerable discussion and criticism regarding the different names which have been given this malady, and various terms have been applied according as each author in past outbreaks has considered certain symptoms or lesions as the paramount feature of the affection. Thus the disease has been termed "cramp of the neck," "head disease," "mad staggers," "sleepy staggers," etc. Through the recent investigations of Grimm, Schmidt, and others it has been quite definitely established that "head disease," Borna disease and cerebrospinal meningitis are one and the same, and Huttyra and

Marek have accepted this opinion and incorporated it in their "Special Pathology." While at first the Borna disease was considered as a form of cerebrospinal meningitis, the work of Johne and Ostertag (1900) indicated that it was an independent disease, because they failed to find any inflammatory changes in the central nervous system. Accepting this view, Friedberger and Fröhner have separated the two diseases in their "Theory and Practice," basing their differential diagnosis chiefly on the absence of inflammation in the brain and cord of Borna disease. However, since the publication of this excellent work in 1904, Oppenheim, Dexler, Schmidt, and others have shown conclusively that inflammatory lesions are present in the central nervous system, although Dexler has pointed out that in some cases it is necessary to make a systematic examination of a number of slides to discover the inflammatory changes. As a result the more recent writers have adopted the viewpoint that the two terms, Borna disease and cerebrospinal meningitis, are synonymous.

When this disease appeared with such severity in certain sections of the United States in the summer of 1912, there were a number of persons who claimed that it was the Borna disease appearing in the New World for the first time. Others diagnosed it as a new horse disease, as influenza, parasitism (due to the palisade worm), paralysis similar to poliomyelitis (infantile paralysis) of man, epidemic cerebrospinal meningitis of man, and equine malaria from the fact that mosquitoes were prevalent and the horses were in lowlands. These erroneous diagnoses, while participated in to a certain extent by some veterinarians, were usually the opinions of physicians, chemists, bacteriologists who were not veterinarians, and others of limited veterinary experience. However, the vast majority of veterinary practitioners recognized the disease as their old torment—cerebrospinal meningitis, staggers, or forage poisoning.

The latter name came into the literature of the disease as a synonym in 1900 following the investigation of an outbreak by Pearson. He was able to reproduce the disease in experiment horses by feeding them on damaged silage, and by giving them water to drink which had percolated through this silage. Doubtless influenced by the frequent absence of microscopic lesions of

the central nervous system, and by the analogy between this disease and meat poisoning of man, Pearson proposed the name forage poisoning, which has been more or less in favor ever since. There are certain objections to this term, principally from the fact that it may suggest a form of poisoning produced by vegetation, that is specifically poisonous, such as lupines, loco, larkspur, etc., or by ordinary forage that is poisonous of itself. This, however, was not the intention of Pearson, for by his analogy to meat poisoning it is evident that he did not wish to convey the impression that all forage was poisonous any more than all meat is poisonous. But when meat becomes contaminated with pathogenic bacteria, such as the *Bacillus enteritidis*, *B. botulinis*, etc., such meat is dangerous to man in the same manner that ordinary forage contaminated with certain unknown infective agents becomes dangerous to horses and produces forage poisoning. In other words, the forage is the carrier and not the primary factor in the disease. On the other hand, this term has a direct advantage in being readily understood in popular usage and in conveying to the layman's mind that an absolute change in feed is essential.

After years of study and experimentation it is the consensus of opinion of practically all investigators that the disease can be controlled effectively only by a total change of feed and forage; in other words, by preventive measures and not by medicinal treatment. That there is direct connection between ingestion of green forage, exposed paturage, newly cut hay and fodder, and the development of the disease is quite obvious, and that the ingestion of such forage when contaminated is the most important factor is equally obvious, as almost 100 per cent. of the cases in Kansas and over 95 per cent. of the cases in Nebraska of which we have any record were maintained all or part of the time under such conditions. Even such negative history is not always dependable, as the owner on one farm informed the writer positively that the dead horses had eaten nothing except old hay and grain, but when notice was taken of the closely cropped grass in an adjacent pasture he innocently remarked that he always turned the work horses into the pasture over night. In fact in some sections "pasture disease" is the designation for this malady.

Other names which have been given to this affection are epizootic encephalo-myelitis, meningo-encephalitis and meningo myelitis, enzootic cerebritis, leuco-encephalitis, etc., but the writer prefers the old-fashioned terms cerebrospinal meningitis for the scientific term and "blind staggers" for the lay term. That the symptom of staggering is one of the most common manifestations of the disease is shown by the clinical observations of Schmidt, who has made a close study of 415 cases, 377 of which developed staggering symptoms while standing or walking. The only symptom which occurred more frequently was the loss of appetite appearing in 410 animals, while the symptoms next in prominence were grinding of the teeth, which was observed in 349 cases, and difficulty in swallowing, which occurred in 335 cases.

ETIOLOGY.

Unfortunately no specific bacteria, fungus, virus, or other toxic principle has yet been found which can be considered as the cause of cerebrospinal meningitis in the horse. It is quite true that bacteriological investigation has given us a number of different organisms by an equal number of different investigators, each of whom has thought his particular organism to be the causative agent of the disease: but the fact remains that the four rules laid down by Koch have not been met with sufficient regularity to make the results satisfactory to the disinterested worker. Further investigations are necessary to decide which, if any, of the reported organisms is the true cause of the disease. That the disease may not have an etiological entity has been suggested by Weichselbaum, Hutyra, and Marek. This would seem quite probable if all the claims for the following different etiological factors were to be accepted. For instance, Siedamgrotsky and Schlegel incriminated a micrococcus as the cause of the disease. On the other hand, Johne found diplococci in the cerebrospinal fluid which he termed *Diplococcus intracellularis equi*. Again, Ostertag recovered streptococci in short chains from the blood, liver, urine, and brain of affected horses. These organisms he termed Borna streptococci. Harrison of Canada isolated a streptococcus from the brains of horses affected with cerebrospinal meningitis which was quite similar

to Ostertag's, although it differed in forming capsules, staining by Gram's method, refusing to grow well on gelatin, and in proving virulent for laboratory animals. In Minnesota, Wilson and Brimhall have also incriminated a diplococcus as the cause of cerebrospinal meningitis of horses, cattle, sheep, and pigs, and proved it to be the *Diplococcus pneumoniae* of Frankel. They likewise claimed to have isolated the *Micrococcus intracellularis meningitidis* of Weichselbaum from the central nervous system of a cow showing symptoms of spinal meningitis. This latter organism is also reported to have been found by Christiana in primary sporadic meningitis in the horse and in a goat.

The remarkable part of all the above investigations is that each author considers his particular organism as the etiological factor of the disease, and the majority of these writers believe they have succeeded in producing the disease in horses by the inoculation of these differing agents. Some of these positive results are readily explained by the large quantity of turbid fluid injected under the dura. The inoculation of 5 and 10 c. c. doses of a heavy emulsion of any organism is likely to produce an irritation, and the inflammation set up by such foreign material will necessarily produce exudation with accompanying mechanical pressure, so that it is not surprising to read in the post-mortem notes of some of these cases that the meninges bulged through the opening on cutting through the bones of the skull.

Schmidt, of Dresden, is of the opinion that the nature of the infectious principle is not settled, and believes that the cocci and diplococci which have been described as causative factors will in future be deprived of their pathogenic relationship.

In two outbreaks of forage poisoning investigated by Moore of Cornell, one gave negative results from a bacteriological standpoint, while in the other pure cultures of the colon bacillus were obtained from the brain.

Grimm, working in Zwick's laboratory in Berlin, isolated streptococci from horses affected with head disease or staggers, which were not essentially different from the Borna streptococci of Ostertag. Owing to the regularity with which these cocci were taken from the brains of horses with "head disease"—cocci which Grimm stated possessed slight, if any, properties necessary to make them casual factors of disease—the question

arose whether the same microorganisms are not also found in the brains of healthy horses. Grimm obtained the heads of ten horses which were killed at the Zoological Garden for the animals, and which were by examination found to be free from any indication of cerebrospinal meningitis. In the brains of these healthy horses he found cocci (staphylococci and streptococci), although cultures were made within a few hours after death, and at least one strain has shown many similarities to the streptococcus found by Ostertag.

These results of Grimm's work are very similar to the results of the Bureau of Animal Industry. In horses which have died of forage poisoning it is not a difficult task to recover various forms of cocci; in fact, too many forms to make them all of etiological significance, while in those cases which have been killed in the late stages of the disease it is of common occurrence to have all the culture media inoculated with the various tissues remain sterile. On the other hand, we found micrococci, diplococci, streptococci, and staphylococci so frequently in the brains of horses which have died of dourine, swamp fever, influenza, etc., that we have come to consider these organisms as representing an agonal invasion from the intestines without casual connection with any definite disease. Like Grimm, we have found some of these same cocci in the brains of horses that died of forage poisoning, and we have also recovered other species, all of which have been inoculated into experiment horses by various methods, including intravenous, subcutaneous, subdural and intralumbar injection, as well as by spraying the nasal mucous membrane, with the result that two horses died following a nasal douche and a subdural injection, respectively of a pure culture of two different cocci. The post-mortem on the former showed death to have been due to a strangulated intestine, while the second animal died suddenly without evincing any characteristic symptoms, although extremely nervous. Post-mortem examination showed an absence of any pathological lesions posterior to the brain. The dura mater was inflamed and distended with a yellowish exudate. The veins and capillaries of the cerebrum were dilated and engorged with blood, while the third ventricle contained a tumor the size of a walnut. Although the same organism which was

injected was recovered from the brain tissue, other horses injected with the recovered culture have continued to remain in a healthy condition.

With a view of obtaining additional information regarding the significance of these various cocci to the disease in question, an antigen was prepared from a culture of each organism and tested against the blood serum obtained from affected horses in the field for complement fixation and agglutination as in glanders. In no case was a positive reaction to these tests obtained by the use of any of the antigens prepared from the different cocci isolated from diseased horses. In this connection it may be noted that from the number of affections of the horse produced by coccoid organisms, this animal appears to be particularly susceptible to their action.

Another cause has been suggested for this disease in the finding of nuclear inclusions by Joest and Degen in the nerve cells of the hippocampus. These inclusions are similar to the Negri bodies of rabies, and are rounded or oval in shape, staining intensely with eosin. A large number of brains from affected horses have been examined in our laboratory for these bodies, but thus far with negative results, although the same technique applied to the brains of rabid animals brings out the Negri bodies with great clearness.

There remains one widely accepted theory as to the causation of the disease which must be given consideration, namely, fungi on the feed. While most investigators have obtained negative results when feeding experiment animals upon moldy feed, some few have reproduced the disease by such feeding. Thus, Mayo reports that a colt fed experimentally upon some of the moldy corn, which was held responsible for the serious outbreak in Kansas in 1890, developed the disease and died on the twenty-sixth day. Again, the Kansas outbreak of 1900 was said by Haslam to have been produced by immature ears of corn infected by molds, although the exact mold was not discovered. By feeding horses upon this immature corn badly infected with molds, typical fatal cases of staggers were produced in four out of seven horses. Haslam also records the fact that severe losses of horses have occurred in other States when the grasses in the pastures became moldy. Klimmer, commenting

upon the negative results obtained in experiments with moldy feed, asserts that the numerous losses occurring from the feeding of such material indicates the probability that the experiments were not sufficiently extensive from which to draw conclusions, and believes that the use of such feed should be discouraged. Among other writers who have attributed the disease to toxic fungi are Michener, Trumbower, and Harbaugh. The latter investigated the serious outbreak of this disease which occurred in Virginia and North Carolina in 1886, and claimed that every case of the disease could be traced directly to moldy feed.

This theory of toxic fungi is not antagonistic to the facts in many of the best observed outbreaks, and knowing that fungi vary greatly in growth and in the elimination of various products under different climatic conditions, we may explain the irregularity of the symptoms as well as the occurrence of the disease under what may appear to be identical conditions. Thus Ceni of Italy states that molds are capable of producing poisons, but only at certain stages of their growth, and at other times are entirely inactive. A case of this character was investigated by this bureau several years ago in an outbreak among the United States Army horses at an encampment in Pennsylvania. Many horses had died of cerebrospinal meningitis as a result of eating moldy baled hay, and as soon as the hay was eliminated the deaths ceased. Other horses in the vicinity not fed upon this hay failed to contract the disease. At the suggestion of State Veterinarian Marshall the bales were opened and exposed to the sun for three or four weeks, after which time this hay was fed sparingly at first and later in usual quantities without producing any ill effect. Forage poisoning therefore seems to be an auto-intoxication rather than infection, and due to certain chemical poisons or toxins formed by organismal activity. These toxins may be present when the forage is taken into the body or formed in the gastro-intestinal canal, and therefore, the disease is a specific form of auto-intoxication. The nature of the substance which causes these harmful changes or the poisonous bodies that are formed remain unknown.

On account of this very old and very plausible theory so often advanced, that the disease is due to toxic substances

existing in damaged grain and fodder, a number of species of fungi were isolated during the past year from damaged corn and forage and grown on a sterilized corn medium or alfalfa infusion in an effort to produce some toxic substance that would create disease when fed to horses. The pure cultures were allowed to grow for periods of one month's duration, in flasks containing 250 cubic centimeters of the nutrient medium, and the contents of one flask were fed each day for periods of thirty days, along with a sufficient quantity of sound corn and hay to make a normal ration; but no symptoms have thus far developed in the experiment animals, although only about one-half of the number of pure cultures isolated have thus far been used in this experiment.

It is possible that laboratory conditions alone can not be made to parallel sufficiently close those which exist naturally in the growing plants, and that toxic substances which might be produced in a natural state would not be generated in a corn-meal medium in the laboratory. The by-products of the growth of both fungi and bacteria on corn and forage should certainly receive more consideration in future work. In view of the above information it must appear to the unbiased mind that the cause of forage poisoning remains an obscure and puzzling problem.

OCCURRENCE.

Like cerebrospinal meningitis of man, forage poisoning occurs in sporadic as well as enzootic and epizootic forms. The sporadic cases occur either in different localities from the epizootic outbreaks or in such sparse numbers as not to amount to an enzootic. Thus the outbreaks are quite variable in extent and severity. Sometimes they become very widespread, causing heavy losses, as in the recent outbreak in Kansas and Nebraska, while at other times there are only sporadic cases. Liebenner believes that the development of the cause of the disease in Germany is favored by the rainfalls and warmth of the earth during summer and autumn. No conclusive evidence has ever been presented to indicate that the disease is ever transmitted directly from one horse to another. Sick animals have been placed alongside of susceptible horses in the same stable without

conveying the disease to the latter, and healthy horses have been placed in stalls previously occupied by animals which died of the disease, and have eaten from the same mangers without previous disinfection, but in no case has the disease been transmitted in this manner. In the recent outbreak in Kansas it was quite noticeable that livery and other work horses were not affected so long as they were fed on clean, dry forage, although they were constantly exposed to the disease by coming in contact with diseased horses. For instance, Dr. Herman Busman, who was in charge of the Kansas field force of veterinarians of the Bureau of Animal Industry, reports a case where horses were kept in adjoining corrals separated only by a wire fence. Those on one side were fed on green forage and recently cut cane, and died from the disease, while those on the other side were fed dry feed and not one became sick. He also reports a similar occurrence in a livery barn where the horses had been fed on clean, dry feed without sickness, but when fresh cut bottom-land hay was substituted for the former feed the horses became sick within a few days. Another similar instance was reported by Dr. E. T. Davison, in charge of the bureau's field force in Nebraska, in the case of a farmer who owned a work team that was strictly barn fed. While attending the State Fair at Lincoln these horses were turned out on pasture for two days and both horses came down with the disease on the fourth and fifth days, respectively, after being taken off the pasture.

It is such cases as these that have incriminated the forage and caused the disease to be known as "pasture disease" in some localities. Indeed some veterinarians report that all the animals affected had been on pasture, or, having been removed from pasture, had been fed on recent cuttings of alfalfa, prairie hay, cane, or kafir corn, while no cases came under observation where the animals had been on dry feed all summer.

A long period of dry weather followed by rainfalls with considerable humidity and heat seems to favor the development and dissemination of the disease. The period from August 1, to October 1, 1912, presented exceptional climatic conditions in Western Kansas and southern Nebraska, and it was observed that crops cut and cured before this date could be fed with impunity. During the first week in August a heavy rainfall

started in Kansas and nearly twice the usual amount was recorded, falling mostly during the night and soaking in. This was followed by very high temperatures, the seventeen days from August 23d to September 9th being the hottest series of days on record in Dodge City. There were also more than the usual number of cloudy or partly cloudy days with high relative humidities. The dew point was reached early at night and the deposit of dew was abundant, which is uncommon in that section. High humidities certainly continued throughout the day among the grasses near the soil. These grasses, which usually cure into hay on the root, became dotted with both parasitic and saprophytic fungi. Water holes, draws, and buffalo wallows remained filled with water throughout most of the period. During the latter part of September frosts occurred, accompanied not only by cooler weather but with lower humidity, which are the significant factors in the subsidence of the disease, and after the first week in October the disease practically disappeared. Since then many owners have placed their horses back on the same pastures used during the serious stages of the disease and there has been no ill-effect noted. This would indicate that there are good reasons to believe the forage is no longer in condition to produce the disease and hence its use is safe, as in the case of the Pennsylvania baled hay previously mentioned.

Somewhat similar conditions of climate obtained in Nebraska during the prevalence of the disease, but on September 25th a killing frost was recorded, followed by several light frosts and a reduction in the relative humidity. After this time the disease rapidly subsided and finally disappeared. There is not much question that some of this infected forage has been baled and shipped to various points, and it is therefore not unlikely that sporadic cases of the disease will appear in these sections under favorable climatic conditions.

In this connection, attention should be called to the marked prevalence last summer and fall of the disease of cattle known as mycotic stomatitis, which simulates the foot-and-mouth disease of Europe and is caused also by contaminated forage. This disease first appeared in Florida and spread over Georgia, North and South Carolina, Tennessee, Kentucky, Virginia, Maryland, and into Pennsylvania. The climatic conditions

were evidently appropriate for the development of the causative agent on forage, and as soon as the animals were brought out of the pastures and stall fed, the disease immediately subsided.

SYMPTOMS AND LESIONS.

In most of the cases disturbance of the appetite, depression, and weakness are the first manifestations observed, although all the symptoms vary within wide limits.

Very soon the characteristic symptoms of the disease appear. There is trouble in swallowing, drooping of the head and sleepiness, which may give way to excitement and attacks of vertigo. An impairment of vision is noted, with loss of coordination, resulting in a staggering gait or reeling while standing. There is muscular twitching, cramp of certain muscles, chiefly of the neck and flanks, and grinding of the teeth. Sometimes colicky pains are noted. If in an open space, the animal will walk in a circle, sometimes to the right, at other times to the left, and will try to push through any obstacle with which he comes in contact. In the stable he will press his head against the stall or rest it on the manger. Sometimes he will crowd backward or sidewise until he gets in a corner and remains there. If the temperature is taken at the beginning of the disease it will be found to be from 103° to 107° F., but within twenty-four hours the temperature gradually falls until it reaches normal and then becomes subnormal. The pulse is from 40 to 90 and weak, while the respirations are fluctuating from normal to as high as forty-eight per minute. There may be or may not be drooling of saliva, depending on the extent of the paralysis of the pharynx. The animal is often down on the second or third day and may or may not get up when urged to do so. While down he will go through automatic-like movements of pacing or walking, resulting in acceleration of the pulse and respiration. At this time the legs are held out stiffly and parallel to the ground. The hind legs of many of these animals that have gone down are paralyzed and there is loss of sensation of the skin of these parts. The expired air is extremely fetid, and there may be a croupous-like deposit of the throat, which has caused the name "putrid sore throat." The conjunctiva may show injected blood

vessels or petechiæ on a yellowish-tinted background. Coma or somnolence may be marked in animals going down within the first few days. Those which remain standing may become violent or delirious, but ordinarily the horse is tractable and easily managed. Death usually occurs in from four to eight days, although in the acute form death may follow within ten or twelve hours after the first symptoms are observed, while in chronic cases the disease may last two or three weeks. The prognosis is very unfavorable, as eighty-five to ninety per cent. of the affected animals die, in the beginning of the outbreak, but later the cases become milder with a consequent drop in the mortality.

On post-mortem the amount of lesions observable to the naked eye is in marked contrast to the severity of the symptoms noted. The pharynx and larynx are inflamed in many cases, and sometimes coated with a yellowish white glutinous deposit, extending at times over the tongue and occasionally a little way down the trachea. The lungs are normal, except from complications following drenching or recumbence for a long period. The heart is usually normal in appearance, except an occasional cluster of petechiæ on the epicardium, while the blood is dark and firmly coagulated. The mucosa of the stomach indicates a subacute gastritis, while occasionally an erosion is noted. An edematous, gelatinous infiltration is observed in the submucosa of such cases. The first few inches of the small intestines likewise may show slight inflammation in certain cases, while in others it is quite severe; otherwise the digestive tract appears normal, excluding the presence of varying numbers of bots, *Strongylus vulgaris*, and a few other nematodes. The liver is congested and swollen in some cases, while it appears normal in others. The spleen is, as a rule, normal, and at times the kidneys are slightly congested. The bladder is often distended with dark-colored urine, and occasionally a marked cystitis has been observed. The adipose tissue throughout the carcass may show a pronounced icteric appearance in certain cases. On removing the bones of the skull the brain appears to be normal macroscopically in a few instances, but in most cases the veins and capillaries of the meninges of the cerebrum, cerebellum, and occasionally the medulla are distinctly dilated and

engorged, and in a few cases there are pronounced lesions of a lepto-meningitis. An excessive amount of cerebrospinal fluid is present in most of the cases. On the floor of the lateral ventricles of several brains there was noted a slight softening due to hemorrhages into the brain substance. There is always an abundance of fluid in the subarachnoid spaces, ventricles, and at the base of the brain, usually of the color of diabetic urine, and containing a limited amount of flocculi, but in a few cases it was slightly blood tinged. The spinal cord was not found involved in the few cases examined.

A comparative microscopic examination of the brains of horses which died in Kansas, New Jersey, Maryland, and Virginia this year with those of horses from previous outbreaks showed the same characteristic perivascular round-cell infiltration, especially in the olfactory lobe and the hippocampus. The pia mater showed an increased amount of connective tissue with dense round-cell infiltration which extended into the adjacent cortical portion of the cerebrum. The capillary blood vessels were engorged with cells and their walls were greatly infiltrated. Limited areas of leucocytic infiltration and small hemorrhages in the brain tissue were not infrequently observed. No cellular inclusions in the ganglionic cells were detected after prolonged examination.

TREATMENT.

One attack of the disease does not confer immunity. Horses have been observed which have recovered from two attacks, and still others that recovered from the first but died as a result of the second attack.

Inasmuch as a natural immunity does not appear after an attack of cerebrospinal meningitis, it might be anticipated that serum of recovered cases would possess neither curative nor prophylactic qualities. Nevertheless, experiments were made along these lines with serum from recovered cases, but without any positive results. Similar investigations have been conducted by others in Europe with precisely the same results. With the tendency of the disease to produce pathological lesions in the central nervous system, it seems scarcely imaginable that a medicinal remedy will be found to heal these foci, and even

where recovery takes place there is likely to remain some considerable disturbance in the functions, as blindness, partial paralysis, dumbness, etc. Indeed, when the disease once becomes established in an animal, drugs seem to lose their physiological action. Therefore, with all the previously mentioned facts before us, it is evident that the first principle in the treatment of this disease is prevention, which consists in the exercise of proper care in feeding only clean, well-cured forage and grain and pure water from an uncontaminated source. These measures when faithfully carried out check the development of additional cases of the disease upon the affected premises.

While medicinal treatment has proved unsatisfactory in the vast majority of cases, nevertheless the first indication is to clean out the digestive tract thoroughly, and to accomplish this prompt measures must be used early in the disease. Active and concentrated remedies should be given, preferably subcutaneously or intravenously, owing to the great difficulty in swallowing, even in the early stage. Arecolin in one-half grain doses, subcutaneously, has given as much satisfaction as any other drug. After purging the animal the treatment is mostly symptomatic. Intestinal disinfectants, particularly calomel, salol, and salicylic acid, have been recommended, and mild antiseptic mouth washes are advisable. Antipyretics are of doubtful value, as better results are obtained, if the temperature is high, by copious cold-water injections. An ice pack applied to the head is beneficial in case of marked psychic disturbance. One-ounce doses of chloral hydrate per rectum should be given if the patient is violent or muscular spasms are severe. If the temperature becomes subnormal, the animal should be warmly blanketed, and if much weakness is shown this should be combated with stimulants, such as strychnin, camphor, aclohol, atropin, or aromatic spirits of ammonia. Early in the disease urotropin (hexamethylenamin) in doses of 25 grains, dissolved in water and given by the mouth every two hours, appeared to have been responsible for the recovery of some cases of the malady. During convalescence the usual tonic treatment is indicated.

Many of the so-called "cures" made their reputation at the time the outbreak was abating and when noninterference

was proved to be equally effective. One of the most unpleasant developments of the outbreak in 1912 was the great amount of "faking," which seemed to be the only contagious feature connected with the disease. All kinds of drug specifics, serums, and vaccines developed like mushrooms and were exploited in almost every community devastated by the disease. Many tainted dollars were obtained from the suffering horse owners, who grasped at every newly advanced treatment like drowning men clutching at straws. In Nebraska, blackleg vaccine was reported to have been used as a preventive on at least 1,600 horses, and nearly 1,500 of them are said to have died as a direct result of the vaccine. This feature is now being investigated by the Government.

Dr. Munn, of Kearney, Nebr., had apparently good success from the use of diphtheria antitoxin as a prophylactic agent, since not a single animal developed the disease out of over 500 injected. It may be with this treatment, as with others, that good results were due to the fact that the disease was on the wane before treatment was commenced, but no other line of treatment gave as good apparent results. Dr. Kaupp also reports in the *Breeders Gazette* that only 1 horse died out of 900 inoculated with a diplo-streptococcic bacterin he prepared, but the injections were made so late in the outbreak that its value is still problematical, since thousands of horses in the affected area at this period failed to develop the disease, although they had received no preventive treatment whatsoever.

NINTH MILITARY TOURNAMENT OF THE COMBAT ARMS—FRENCH ARMY.*

THE competitions of the tournament of 1913, organized by the Military Society of Practical Fencing, took place at the Tuileries, from April 12th to 27th. They terminated too late to allow us to give an account of them in our May number.

The number of contestants has increased to the enormous figure of 3,007, of which 530 are officers, 246 masters of arms and 2,231 non-commissioned officers. These figures are eloquent testimony of the success of this years meet. And the credit for it belongs entirely to the committee of the Military Society of Practical Fencing, which under the active presidency of General Faurie has been able, through perseverance, energy and will to accomplish the rehabilitation of the art of fencing in the Army. Lieutenant Colonel Mordacy, Major Lacroix, Captains Charpentier, Bessiers, and all those who have devoted themselves to the task have a right to feel proud of their work.

In order to avoid the difficulties which might result from so great a number of competitors, recourse was had to a preliminary competition in the army corps, at which members of the committee were present and acted as judges at the first semi-finals of non-commissioned officers.

From a technical stand point, it cannot be denied that continuous progress has been made in saber and sword practice, especially in the latter. The contestants have given proof of knowledge of the science of fencing, of endurance and of the niceties of the art. Their form in general is very good. In case of the saber, one may note an important change in the tactics of contestants; they have tried to use the points instead of the cuts, because a touch with the point counts, two, while cuts count but one.

The victors of the individual contests are all well known by reason of their former successes, and among them we are happy

*Translated by Captain Edward Calvert, Ninth Cavalry, from the *Revue de Cavalerie* for June, 1913, for the War College Division, General Staff.

to count a number of officers and non-commissioned officers of the cavalry. We mention: Captain Perez, 22d Dragoons, announced champion of the sword in 1913; he was also the holder of the title in 1912. Lieutenant Penoden, 25th Dragoons, who was announced champion of the saber in 1913, which title he had previously won in 1908, 1909 and 1910, as well as the international championship of La Haye, contested for last month; Captain Margraff, 5th Cuirassiers, champion of the four arms, in 1913 as he also was in 1912. Stable Sergeant Brumclot, of the 5th Cuirassiers, champion of the individual sword match, reserved exclusively for non-commissioned officers.

In the team competitions the cavalry particularly shone. The following teams were rated first class in the championship of the sword, the team A of the Saumur School; in the championship of the saber, the team of the 12th Cuirassiers, which is now victorious for the third consecutive year in the event, which gives them permanent title to the trophy pertaining to this event; in the non-commissioned officers championship of the sword, the team of the 8th Cuirassiers; in the non-commissioned officers championship of the saber, the team of the 1st Hussars.

We ought to signalize the success of the French teams in the international competitions of the saber and the sword, in which teams of Holland, Belgium and England competed. It is true that the Belgian and English teams competed under unfavorable circumstances; the Belgian team had been disorganized by the wounding of Lieutenant Hennet, and the English team, hastily formed at the last moment, lacked cohesion.

The Minister of War honored with his presence the gala day of the military tournament, and after expressing his desire for the development of the practice of fencing with the combat arms awarded the following prizes: *Officers of the Academy*: Major d' Epenoux, 4th Chasseurs, Captain Varaigne, of the Staff of the 19th Corps, Captain de Ranst, 14th Dragoons, Adjutant Laize, 7th Cuirassiers, Adjutant Richard, 2nd Zouaves; *Chevaliers du Mont Aquicola*: Lieutenant Jaricot, 12th Artillery, Lieutenant Romilly (Reserve) 27th Dragoons; *Officer du Michan Istekhar*: Captain Perez, 22d Dragoons.

The following is the list of names of the victors in the Military Tournament:

1. *Competition Exclusively for Non-commissioned Officers and 2nd Term of Service Men.* (a) Individual sword championship, 1st place, Sergeant Rachin, 33d Infantry. (b) Individual saber championship, 1st place, Stable-Sergeant Buenelot, 5th Cuirassiers. (c) Team Saber Championship: 1st place: Team of the 1st Hussars, composed of Stable Sergeants Amiol, Aubert and Bourrell. (d) Team Sword Championship, 1st place: Team of the 8th Cuirassiers, composed of Adjutant Moitrier, Stable Sergeants Martinarie and Barbot.

2. *Competition Exclusively for Student Officers:* Challenge Cup for Sword Teams: 1st. The Sanitation Service School of Paris, composed of M. M. Despugols, Canet and Tenacol.

3. *Competitions Exclusively for Military Masters of Arms.* (a) Individual Sword Championship, first place, Sergeant Gravlin, 80th Infantry. (b) Foil Championship, Sergeant Spindal, student of Joinville. (c) Saber Championship, Sergeant Chantelot, 140th Infantry.

4. *Military Trophy.* Mixed Saber Team, 1st place. Team of the 12th Cuirassiers, composed of Captain Lobeze, Lieutenants Saint-Germain and Jozan, Veterinarian Joly and Adjutant Master of Arms Roussoultiere.

5. *Competition Exclusively for Students of the Military Schools:* Team Sword Championship, 1st place. Team A of the Polytechnic School contestants, Larget, Grisier and Gerardin.

6. *Bayonet Fencing Competition:* Team championship, 1st place, team of the 59th Infantry. (Privates Lacrass, Barlot and Bouche').

7. *Competition Exclusively for Officers of the Army, Territorial Army and Reserve:* (a) Individual Sword Championship, 1st place, Captain Perez, 22d Dragoons. (b) Individual Saber Championship, first place, Lieutenant Penoden, 25th Dragoons. (c) Sword team competitions for trophy, 1st place Team A of Saumur School, Lieutenants Bourgrain, 23d Dragoons, Handemon, 12th Dragoons, and Hyabiel. (d) Saber Team competitors for trophy, 1st place, team of the 12th

Cuirassiers (Captain Lobez, Lieutenant de Saint Germain, Veterinarian Joly. (e) Competition for Sword Teams for International trophy. 1st place, French team composed of Captain Perez, 22d Dragoons, Lieutenant Hondemon, 12th Dragoons, Lieutenant Bolle, School of War. (f) Competition of Saber Teams for International Trophy. 1st place, French team composed of Veterinarian Hubert, 9th Dragoons, Lieutenants Penodon, 25th Dragoons and dela Touche, School of War. (g) Revolver Championship: first place Lieutenant Rodocanachi (Reserve) 128th Infantry. (h) Pistol Championship: first place, Captain-aviator Faure. (i) Championship of the four arms, (sword, saber, revolver and pistol), 1st place, Captain Margraff, 5th Cuirassiers.

Other matters. There is established a commission intended to make recommendation to the Minister of War on questions relating to the teaching of fencing in the army as well as in the various societies for the promotion of military preparedness. This commission of which General Faurie is president, is composed of military or civil personages appointed by reason of their interest or special fitness.

Apropos of the championship. We have received several letters on the subject of these competitors. We can not publish all of them, but our correspondents will find most of the things they advocate in the two following letters; opinions expressed differ somewhat. In setting them before our readers, we have but one purpose—without taking sides—to instruct our comrades.

FIRST LETTER.

The rate of speed at Antenil has been raised from 500 to 560 meters per minute; this is all very well, but it would be dangerous to increase it further, as rumor reports, is intended. It would be equally a mistake to make speed of prime importance. This would mean the elimination from competitions most of the half-bred horses and riders a little over weight. Besides, at this season of the year, most garrisons have not the climatic conditions nor the character of ground that would admit of the conditioning of horses without danger of injury to their legs.

Thoroughbred horses and their riders have plenty of chances to distinguish themselves on our race courses without giving them special advantages in these championship meets.

If it is desired to increase the severity of the 2nd test, it would be better to make the 3,000 meters of Antenil follow the 30 kilometers of road work. This plan would fairly test the qualities of a good horse without placing a premium on the special quality of speed.

In his memorandum of November 30, 1912, the minister, apropos of the championship test, said among other things: "It is now more than ever necessary that horses placed in the hands of recruits be perfectly trained, etc."

To conform to the desire of the minister, it would be necessary to establish a special class or award special prizes, or give an increased valuation to important points in the class of half-bred horses of seven years or full-bred horses of six years taken from our remounts (without imposing the condition that the horse should necessarily be an officer's charger), so that an officer might enter independently of his charger his trained horse of the preceding year.

It is to be hoped that the *Societe' Hippique Francaise* in its provincial competitions, and other societies also, will institute local competitions of officers' chargers, analogous to the championship competition of Paris, so that officers who feel timid about entering the latter for the first time, and those who for any reason can not come to Paris, will not lose the fruit of a year's work necessitated by the preparation of a horse. This would unquestionably raise the quality and standards of the Paris exhibition.

SECOND LETTER.

The championship charger competitions on the whole, was a great success; its usefulness needs no demonstration; the progress and cavalry *elan* that it engenders are incontestable. The competition of 1913 combined a number of events superior to those of other years; it demonstrated that a greater number of horses had been pushed to a higher degree of riding school

training. One also observed greater care in the entries of fine models in the different classes of officers remounts.

Assuredly, these are all fine results of which we may be proud; but are they so gratifying that we should cease to strive for other more appropriate to the primary object and purpose which these competitions were intended to promote?

A very good charger ought to have good carriage, be obedient, supple, a free mover, hardy and active, possessed of endurance for outside work and capable of rendering every service that circumstances might require of him. The championship competition ought to bring forth the effect exerted to attain this ideal, and the winners ought to be those who most nearly approach it.

But one is a little surprised that, each year, the horses having obtained the best riding-school rating, have not shown the freedom of movement and action necessary even to assure the obedience and suppleness to be obtained from riding-school work directed to this end.

If it were a question of tests over difficult courses, one might find an explanation for the refusal, hesitations and instances of bolting the course, for the lack of power and courage in these same horses; but one is obliged to recognize that on such an easy course as Antenil, over such simple natural obstacles as the managing committee maintains in the championship competition, power and great effort are not required of the horse. The explanation is to be sought elsewhere.

It also appears that preoccupation with high rating assumed by the great weight attached to school work, deters from preserving and developing, in the horse prepared for the championship test, those qualities requisite for outside work. For one may have worked assiduously on a horse in riding school work, have perfectly trained him in change of bad and in other difficulties in equitation, and still have a very ordinary animal for outside work. The system is faulty where preparation for outside and road-work is completely neglected.

It is admitted among contestants for the animal trophy, that to prepare for the series of tests for the championship it is not absolutely necessary to work outside the riding school, and in fact it is certain that a number of horses entered, have

had no other work, up to the last minute, than the suppling exercises and repetition of movements that will assure the highest rating. The same conclusion is reached by considering the large number of trials and the notable difference between that number and that of finals; or still better, the difference between the number of contestants first test and the valiant few remaining on the last day. In attempting to account for these differences, the danger already pointed out confronts us. For disregarding the rare cases where retirement was caused by fortuitous accident, in the majority of horses, it resulted from lameness, arising from leg-strains, tender feet, joint fatigues, etc., which resulted from the outside tests.

What a wastage to do the 50 kilometers at 15 k. m. per hour, to jump the hedges of Antenil at a gait of 550 km. per minute, and to clear the obstacles of the Grand Palais! There is room to ask if the object sought is well attained.

These horses, so attractive the first day, and so well muscled, had they only the appearance of being well conditioned, while in reality they were not?

One may safely say that some were too little trained in outside work and others only to make a showing in riding school work.

It is to be hoped, for all these reasons, that some modifications may be made, either in the tests themselves or in the mode of rating.

I am for the trained and supple horse.

But let not this training and suppleness be obtained at the expense of unfitness and inferiority in outside work.

1st. Too great weight given to riding school training in the championship test of chargers may lead to the danger already pointed out.

2d. The rating of other tests, which fail to take into consideration the difference between an extraordinary horse and a mediocre horse in outside work may lead to the same danger!

Those who qualified in the first three or four places in the championship of 1913, would have maintained their places under any conditions; but some very desirable modifications would have brought about a change of classification of a very large number of contestants. And it is this large number, that is really interesting, for they give the impulse and indicate the

tendency. Now, actually the tendency appears to lose sight of the real object of the championship test for chargers.

A correspondent, very much in earnest, addresses us the following note. We publish it gladly, although we do not entirely share his faith in the efficacy of mirrors.

OPINIONS.

Mirrors and Riding Schools.

"For ten years I looked at myself in the mirrors of the riding school when I studied equitation."

What subaltern has not sung this *spiritual* and caustic bit of army doggerel, composed by one of us? And still, after fifteen years have rolled around, the mirrors continue to shine at Saumur, in the same places as the time of the song; for though they have the fragility of glass they share the enduring quality of the institution.

And the riding hall mirrors are not there, as vain people might suppose, to permit our riding-masters to admire themselves, or our students to see that they are buttoned throughout, or that their boot fits well like those of the *corps de garde*, or for the dandy to use before starting to town.

The mirror ever reflects the truth. It says to this one "Attention, you awkward fellow;" to that one "your seat has been neglected;" "your legs stick out;" "your back is stiff;" "your shoulders arches;" your elbows flop;" such is the language of the mirror. They warn the heedless; they give instantaneous, fleeting and discreet admonition of our faults; they give, so to speak, a ray of truth from on high, flashed by Saint George to the masters and students of Saumur.

But have not we regimental officers, who are neither masters nor students, but practical exponents of equitation also a right to this enlightenment? Reduced to groping in twilight, our efforts for improvement will hardly bring more than half-results.

I desire no further proof of this than the contests of the championship, which each year assembles a select group of officers who ride in school style. These take their work seriously; they are horsemen jealous of their reputations earned on race courses and in horse-show competitions, and they desire to uphold their reputations in this riding school test. Indeed it may be safely said that these men have given the champion-

ship meet its present position of recognized importance. The number of its contests increases each year the present difficulty; and the riding school test, whose prominence, though a matter of dispute, is to be desired and tends to more and more perfect itself. Would it not be well to aid this movement?

How many faults of position which we do not suspect, could be reduced or completely corrected under the influence of the mirrors? And correct positions, engendering as it does, firmness of seat, is the surest guaranty of exactness and vivacity in the use of the aids.

The same is true also of the horse trained in this twilight. In spite of the equestrian tact, there are certain movements that do not appear to you or to me as they really are. Under the impression of a false lightness it is difficult for one to comprehend how many of the gaits are dragging and heavy. The conscientious glass is there to tell us: "You think you urge him forward?" "you move like a crab." A change of bad?" "look at the inert hind quarters." "At last my *passage* is perfect?" "No, instead of narrowing in master form, your horse is sprawled out and dragging back."

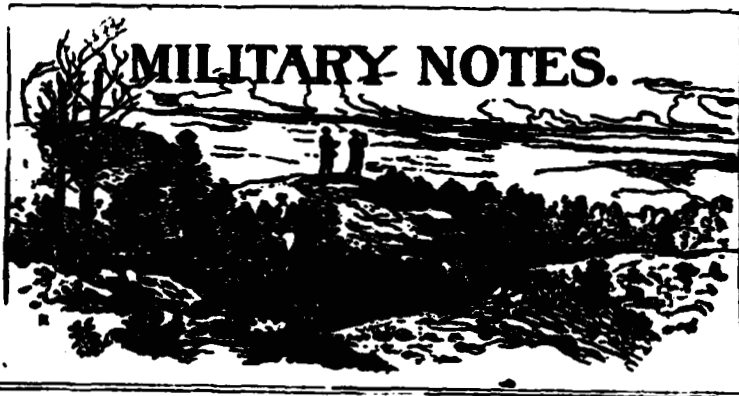
No, once more, if you cannot see what is happening under you, you will often be deceived; the work of your horse may be brilliant or sluggish or false, and in the latter case you would be in a position to correct this.

Criticism and advice of others is rarely sincere, often flattering and not always competent, and can not therefore be depended upon.

That is why I ask a regulation installation of mirrors in all regiments, at least in the riding hall reserved for officers use. The expense would not be great in proportion to the results certain to follow.

Once a graduate from Saumur, we are considered by our countrymen a sort of foreign exportation product from the house of French equitation; and it would be another guarantee to our patrons that the merchandise is genuine.

And as another result, positions being more rational, we would be spared the more or less ridiculous, and always pitiable picture of the awarding the palm at our national championship competition to the "plodder" or to the "ambitious old fellow" which is greatly to be desired.



ATHLETIC EVENTS AT CAMP STOTSENBURG.

JUDGING from the two programs of athletic events at that far-away station and the dozen or more photographs illustrating these events that we have received, life in the tropics of the far East has not depressed the spirit of those serving there to any remarkable extent, notwithstanding the fact that many are now serving in their third year of foreign service.

It appears from these programs and the reports of the races, track meets, polo games, etc., etc., that a series of horse races, etc., were pulled off at Stotsenburg on October 25, 1913, and that later, during the week of November 8th to the 15th, there was held an athletic meet which comprised almost everything in that line, including polo, baseball, exhibition drills, ladies riding, musical riding, and the ordinary track events.

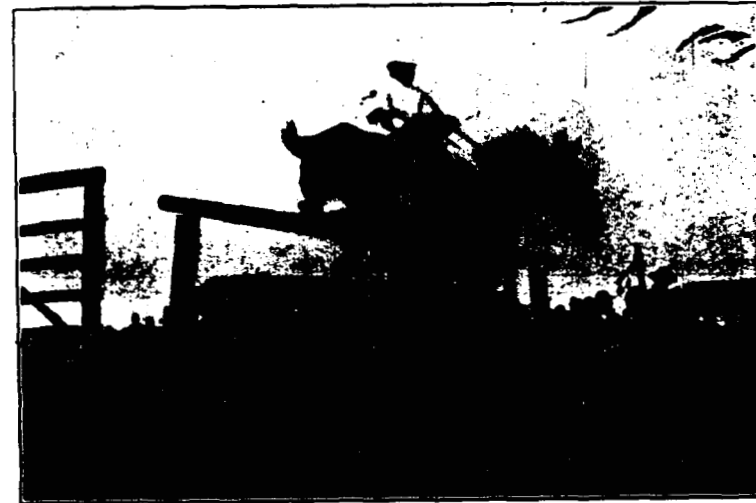
The first, that of October 25th, in which the contestants were enlisted men of the Eighth Cavalry only, consisted of seven events, in five of which the entries were so numerous that they had to be run in two fields and one of them in three. The several events were a quarter mile flat race; a quarter mile

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Cossack race; a quarter mile Roman race; a rescue race; a potato race; tent pegging and high jumping.

The winner in the flat race made the one-fourth mile in twenty-seven and four-fifth seconds; the Roman race was run in the remarkable time, for that style of race, of twenty-seven and one-fifth seconds, ridden by Corporal Hetzer of Troop "D;" the Cossack one-fourth mile race was won by an "I" Trooper in thirty and four-fifth seconds. Corporal Goehring, Troop

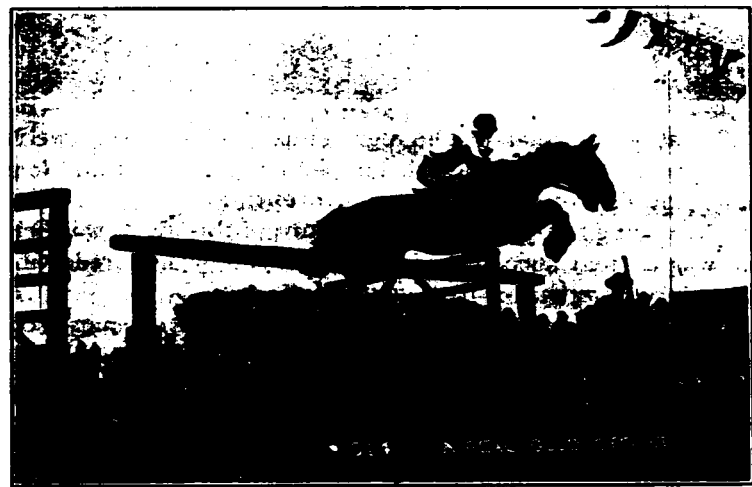


"A," was the winner of the high jumping class, over twelve other contestants, the height jumped being five feet and four inches; he also won the tent pegging event.

According to the newspaper account of this meet, this field day was a great success and was attended by hundreds who cheered the competitors on to greater efforts.

The accompanying cuts are reproductions of snap-shots taken of some of the riders. It was impossible to reproduce all of the fifteen or more photographs illustrating this meet that were received.

The second meet or series of tournaments, etc., was held, as stated above during the week of November 8th to 15th, the program for these eight days being made up of polo games between teams from the Manila Polo Club, the Baguio Country



Club, the Seventh Cavalry, the Eighth Cavalry and the Second Field Artillery, as well as a few between teams from the two cavalry regiments; of base ball games between teams from the Second Artillery and the several cavalry squadrons; of exhibition drills; of musical rides; of mounted sports; and of a track meet. In addition to these there were paper chases, a barbecue and several dances at night. Altogether, the week must have been a strenuous one for the people at Stotsenburg.

The forenoons of two days were devoted to "Gymkanas" which term would be Greek to the writer were it not for the published list of events which they comprised. There were



nine events in the first and ten in the second, as follows: First Gymkana—Obstacle race; Boudoir race; Tennis racquet and ball race; Gretna Green race; Umbrella race; Candlemas race; Carnival race; Tilting (girls and men); Gymkana animal race; Second Gymkana—Lunch counter race; Jinrikshaw race; Mail box race; Equitation race; Shoe race; Sack race; Obstacle race; Snuffing the candle with blank cartridges; Carnival race; and Animal race.

The mounted sports comprised a rescue race, a Roman race, tent pegging, polo ball race, a slow mule race, best trained mounts, and jumping. The track meet covered the usual

events for such an occasion; they were an 100 yard dash, 120 yard hurdle, high jumping, three legged and wheel-barrow race, a half-mile run, pole vaulting, one mile relay, 220 yard dash, shot putting, a section mountain battery race and the broad jump.

Tea was served every afternoon, after the polo games, at the club.

THE COLONEL'S MATCH.

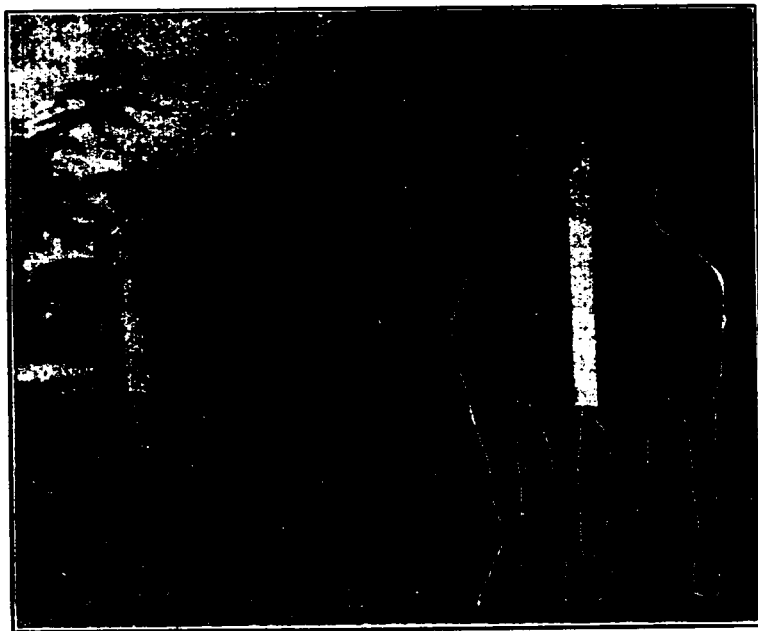
THE conditions for the Colonel's Match for the Eighth Cavalry for 1913 were published in the *CAVALRY JOURNAL* for July, 1913, page 156. Briefly, they are the same as for the Record Practice for the mounted course as prescribed on page 164, S. A. F. M., 1909 with the modification that a strip of yellow target paper four inches wide shall be pasted over the vertical line shown in the cuts of targets "Q" and "R" as illustrated on page 164 of that manual and as shown on the accompanying cut. Hits on these strips were to count four and on other parts of the targets two. The targets were to be six in number and placed six yards from the track, the length of the track occupied by the targets to be about 100 yards. The time for firing a score of six shots to be twelve seconds, the total number of scores being eight, as at present. In rapid fire the odd numbered targets were taken out and two shots were fired at each of the remaining targets.

There were sixty-one entries, of which twenty withdrew on the completion of the firing at the standing figures, leaving forty one who fired the complete course of forty-eight shots. The scores of these forty-one were as follows:*

*Owing to the space required and the extra cost of setting the table, it has been omitted. It shows, however, that Private Otis V. Sloan, M. G. Platoon, had the highest score. His total for the Standing Figures was 78 and for the Mounted Figures 54, or an aggregate of 132. The lowest scores were 18 and 32, respectfully, or an aggregate of 50. The first ten men on the list, only, had scores that aggregated over 100. The first twenty had an aggregate of over 90 and the first twenty-eight of over 80. Ten scores were thrown out for exceeding the time limit. The fifth man on the list had the highest score at the rapid fire, it being 22 out of a possible 24, firing at the mounted figure to the right.—*Editor*.

A study of these scores shows some interesting facts. Among the entries were two distinguished pistol shots. One of these retired and the other did not make a high score.

There were twenty-nine "Expert Pistol Shots" in the regiment. Of these eighteen entered, and six withdrew. Out of the highest twelve in the match there was one "Expert Pistol Shot," making the sixth score.



TARGETS FOR THE COLONEL'S MATCH.

Only one perfect score was made, twenty-four by Sergeant Nolde, the peculiarity being that his scores was fired to the left with the pistol in the left hand.

There were three scores of twenty-two, four of twenty, fifteen of eighteen, and forty-seven of sixteen, which was sixty-six per cent of the possible.

The time was between sixteen and seventeen miles per hour which is that of the so-called Russian Ride and a little better than the extended gallop. Very few scores were thrown out

but one of them was made by Sergeant Inbler, who thus lost second place. The best shooting was done in about ten seconds or twenty miles per hour.

The match was shot under many adverse conditions. The regiment was divided between three posts. At one post an outbreak of "Surra" in the neighborhood caused the horses to be quarantined and prevented practice for the match. At another post the constant use of the only available target range reduced the amount of practice to two or three occasions. At the third post the range was held available for pistol practice for one hour per day for about one month. The result of this practice is shown in the fact that although having less than one third of the competitors it had eleven out of the thirteen best scores.

Another important factor was that in this case the horses were given a preliminary exercise at rapid gaits for one to two miles on the gaiting track before shooting. As a result the horses showed no bad form.

The record of single shots has not been kept in every case but an examination of eleven scores between Nos. 6 and 36, all but three below twenty, and therefore below the average, shows eighteen per cent of fours or hits in the four inch line, and seventy-nine per cent of hits on the target.

I believe that the original scheme of pistol firing in our service was largely taken from my manuscript in 1883, in which however I recommended firing at five yards at an eight inch bulls-eye, mounted, at a run.

After many years I find myself still more convinced that this is correct as to gait and distance, but I would now fire at a line instead of at a bull's-eye.

This pistol match seems to make several matters clear. First is the fact that the terms "distinguished pistol shots," and "expert pistol shots" are fictitious as far as mounted firing is concerned; second, that under different conditions from those prescribed in our firing regulations we can get good results with the pistol with a small amount of practice.

A CORRECTION.

WE have received a letter from a British Cavalry Officer, from which we will quote quite freely, although he states that it is not for publication. This liberty is taken because, first, the matter is one of great interest to our cavalrymen, and, second, because he authorizes us to make the correction that he mentions as regards the cavalry of the British Army.

"In an article entitled 'Peace Training of Cavalry' by Captain McCornack, Tenth U. S. Cavalry, in the November issue of your JOURNAL, he makes the following statement—page 447:

'The British Cavalry all have rifles; they have discarded the lance except for ceremonies.'

"This statement is not quite correct and, I am sure Captain McCornack will excuse me, I think he is making out a case for the rifle at the expense of accuracy.

"In the British Army, excluding the Colonial and Indian cavalry, there are six Lancer regiments. These regiments are armed with lance, sword and rifle. Dragoons and Hussars do not carry lances but are otherwise similarly armed and equipped. The Lancer regiments specialize in the lance and recognize it as their most important and effective weapon.

"Swords are only carried as a secondary arm in case of a dropped or broken lance; rifles are only resorted to on special occasions or as an aid to the main mounted attack, where such use justifies itself.

"Of any weapons to be 'discarded' the rifle would be the first to go and then the sword, the lance being retained. I am not trying to make out an argument in favor of the '*arme blanche*' or the rifle; it would be presumptuous on my part to do so, but am merely correcting a misleading statement. The Indian cavalry (British Native Troops) are almost universally armed

with the lance which is a native weapon and in the use of which they are past masters.

"In active service the lance has proved itself a magnificent weapon from every point of view and in the British Lancer regiments we could not hope for or wish to use a finer weapon.

"I think that if Captain McCornack inquires more closely that he will find the lance and sword used more universally than he conveys the idea in his article and that the rifle which he mentions as being so universally used, is issued in those armies as a secondary weapon, the use of which is recognized as very necessary to cavalry—as a secondary arm.

"Should you forward this to Captain McCornack, I hope that he will recognize that it is written with the utmost good will and with no thought of impertinence, but as one soldier to another.

* * * * *

"My anonymity is a matter of British service etiquette, officers not being allowed to write for publication in any but the service publications and this letter is not intended as an answer in any way to Captain McCornack's article, but, as I have said, merely to correct an obvious mistake and as a friendly letter."

THE NIGHT ATTACK.*

1. The object of the night attack is to take advantage of obscurity; the attacking force thus reaching a point within close proximity of the enemy without suffering undue loss.

(Note.—The obscurity of a fog, or a heavy downpour of rain occurring during the daytime, may occasionally be made use of in the same manner.)

Generally the advance should be made at night, the attack at dawn.

*Extract from General Orders No. 6, Headquarters First Cavalry Brigade, Fort Sam Houston, Texas—Brigadier General James Parker, Commanding.

2. Advantages of the night attack: It nullifies the range and accuracy of the fire arms of the defense. If successful it is decisive. It leaves a long day for the pursuit.

3. Disadvantages: The difficulty of orientation on the march, the danger of collision with friendly detachments; the danger of panic.

4. Favorable conditions: Surprise; moonlight; starlight; snow on the ground; open country; conflagration in the enemy's lines; roads or telegraph lines leading towards enemy's position; discipline and steadiness of attacking force.

5. Unfavorable conditions: Darkness caused by clouds, fog or storm; broken, brushy or wooded country; artificial obstacles in front of enemy's position; lack of discipline and steadiness in attacking force.

6. Preparations for attack: Previous reconnaissance by all superior officers by night as well as by day in order to familiarize them with landmarks; publication of carefully written orders; explain thoroughly plan to all officers and men; adopt compact formations, small columns; numerous connecting files and strong supports at short distances; make deceptive demonstrations; cause, in some cases, previous artillery fire to cause a conflagration in enemy's lines; provide guides for columns to march by stars, luminous compasses and landmarks; lay out line of white marks in direction of entrenchments for center guide, provide a watchword; provide distinctive white badges; provide against rattling of equipments, against smoking, against flash light lanterns, against presence of dogs, or other noisy animals; mark rifle sights with luminous paint or bind rifle muzzle with white cloth; give strict orders against talking; direct that trenches should be taken by hand to hand fighting without preliminary fire combat; use mounted troops on flanks to intercept retreat of the enemy. It is indispensable that the attacking force shall be in deployed formation before it comes under heavy fire, and that the hours of deployment and hour of attack should be previously designated and strictly adhered to.

7. Precautions against night attacks; strong outposts and patrols well advanced; when at close quarters use of search lights and illuminations; entanglements, obstacles, mines; luminous

paint for gun sights, etc; fixed rests for small arms so that their fire will cover certain zones; use of star shells to be thrown among the enemy.

EXERCISES.

8. In order to practice dispositions for the attack and defense by night, the following exercises are suggested.

(Note.—Practice in night attack and defense should be had not only by moonlight and starlight but also on dark cloudy nights. Each exercise should conclude with a discussion, a paper embodying conclusions to be read next day.)

(a) The advance in attack formation of the regiment, squadron or troop, dismounted, against a represented enemy. Direct attack.

(b) A similar advance in line of columns of the regiment, or squadron dismounted, deploying into attack formations when at the proper distance from the enemy. Direct attack.

(c) Same as second exercise. Mounted advance followed by dismounted attack.

(d) Same as second exercise. Mounted advance followed by mounted attack.

(e) Mounted or dismounted or both. Advance and attack on enemy holding bridge (direct and flank attack) or defile (direct, flank and rear attack.)

(f) Discover by daylight reconnaissance the camp of an isolated reconnoitering detachment of the enemy. By night, advance, surround and capture the detachment.

THE CARBINE, ETC.

WE have received the following from one of our captains of cavalry which may be of interest:

I am glad that there is a prospect of our getting a carbine for the cavalry. If the Ordnance Department will only put on a sight similar to the Lyman receiver sight and will make the stock three-fourths of an inch longer, we will have a good cavalry arm. Lengthening the stock has the effect of apparently reducing the recoil. The stock of my converted Springfield measures thirteen and three-fourths inches from the trigger to the center of the butt plate and, although with a full length barrel, it only weighs eight pounds and the recoil is much less severe than that of the service rifle. I hope we shall not have a bayonet inflicted upon us.

With the bayonet and intrenching tool and the proposed European organization, we are between the devil and the deep sea.

I am glad to learn that some of our high ranking cavalry officers are opposing the double rank formation. It appears that the only reason for the double rank is that some cavalry officers believe it to be a better charging formation. Even if this be true, which I do not admit, they evidently have lost sight of the fact that the charge is only a part of the work required of the cavalry. I may be rather dense, but I am unable to see how we can perform the duties of cavalry any better in double rank formation than in single rank. We will have to march in column of twos or fours, as a rule, and the double rank will not shorten the column one inch. What is to happen when a horse in the front rank falls in the charge, with his rear rank man in his immediate rear?

I like the idea of large troops but, why should we call them squadrons?

I would like to have a troop organized as follows:

One Captain,	One First Sergeant,
One First Lieutenant,	One Quartermaster Sergeant,
One Second Lieutenant,	One Mess Sergeant,
	Seven Sergeants,
	Twelve Corporals,
	Two Trumpeters,
	Two Cooks,
	Two Horseshoers,
	One Farrier,
	One Saddler,
	Two Wagoners,
	Three Orderlies,
	Eighty-four Privates,

Total commissioned3.

Total enlisted.....119.

The reasons for this organization are:

Two platoons because we have two lieutenants, this gives each a command.

Platoons divided into three sections because this gives each sergeant a suitable number of men to handle and it facilitates the detachment of a portion of the platoon and provides a convenient sub-division for column formations.

Squads of eight men because this corresponds to the infantry squad. It is about as many men as one non-commissioned officer can handle directly when deployed as skirmishers and also because it is the number of men assigned to one pyramidal tent.

One sergeant for the guidon and six to command sections.

Three orderlies for the officers. They are a necessity and should be provided for.

It might be well to add one more non-commissioned officer as troop clerk.

We have just received the order reducing our troops to eighty men. That means an actual strength of about fifty men. I now have eighty-two on paper but only sixty-one present for duty. Men will not reenlist here and we are not getting recruits fast enough to replace the men going out.

THE EFFECT OF AEROPLANES UPON CAVALRY TACTICS.

MUCH has been said concerning the tactical use of aeroplanes. Enthusiasts have, in their dreams, destroyed cities, blown to atoms the fortifications of our enemies, annihilated armies, and in the twinkling of an eye have sent the mightiest fleets to Davy Jones' locker. Others have, with child-like faith, seen in this late auxiliary a new *Arme Blanche*, and in flights of fancy too vague for sane minds to record, have relegated cavalry to the land of Skidoo.

The herald and the porte-crayon of this body-lunatic will picture for you a winged centaur traversing the heavens in a chariot of fire, disdaining the elements, while from heights too great to be reached by any projectile, death dealing missiles will be showered down upon the unsuspecting heads of our adversaries. They will show this Pegasus of the skies performing all the essential duties of cavalry in such style as to make the redoubtable Stuart, Phil Sheridan and Forrest, with their hordes of heroes, look to the future student of history, like the proverbial "thirty cents:"—(10 cents each).

Great fleets of air craft, flying wing to wing like flocks of so many wild geese, will charge each other above the clouds; others will dip down and sieze hilltops, defiles, river banks, etc., while some will stop by the wayside that the mechanic may, with his vest pocket kit, repair, destroy or construct bridges, cut barbed wire fences and gather food and forage for the army in rear. What have we not heard of this Oswald of a distorted imagination!

However; I wish it to be understood that I am a friend of the aeroplane. I honor the inventors and those who have had the faith and the courage to risk their lives in its development. I believe that the real value and the real sphere of the aeroplane in war is not yet half appreciated, but let us not be carried helter skelter upon the waves of popular enthusiasm which are so sure to crash upon the rocks of cold fact.

When the first wild flush of excitement is past, when a sufficient number of lives shall have been sacrificed, when these ships of the air are so common that the "aviation meets" will no longer draw danger-hungry crowds, when our Roman Holiday is over, the art of flying will receive a new impetus along the lines of greater stability, greater safety, greater lifting power, greater comfort—in short, greater practicability.

I think that it is reasonable to predict that the aeroplane of the future will be equipped with instruments for quickly and accurately measuring distances, provided with means for instant communication, for transporting general officers and others with the utmost dispatch, of inspecting and reporting upon the character of terrain within the theater of operations, etc., etc., but, in my opinion, it will find its greatest field of usefulness as an *auxiliary* scout to the army and navy.

As we all know, the first duty of the cavalry is to find and overthrow the cavalry of the enemy; after that, to sieze and hold important places, bridges, defiles, riverbanks and other important offensive and defensive positions; to demoralize the enemy by attacking his lines of communications; to threaten his flanks and pursue or attack when the tide of battle is right. But at the risk of being severely criticised, let me say that the *chief obstruction* to the prompt and vigorous execution of these important duties lies in the present *necessity for the cavalry screen*.

In the performance of this necessary duty the cavalry is dispersed, time is wasted and opportunities are lost.

Times will come when we must fight to the last ditch; when we must launch our lines against forlorn hopes; when we must charge the bayonet and the cannon's mouth; and let us hope that when the supreme moments arrive we will have the knowledge and the courage to do these things well; but let me go on record as being of the opinion that the cavalymen's chief asset is not his rifle, his pistol nor his saber, but is his *horse*. His chief rôle is *hard riding* and his chief value lies in his *ability to get there*. Here is where the cavalry and the aeroplane go hand in hand, one the complement of the other. Of course there will always be times when the cavalry screens are inevitable, but as a general rule the air scouts will be able to relieve the cavalry of much of this work, and the latter, *profiting by the information*

thus gained, will be able to throw caution to the winds and without let or hindrance gallop to points of vantage.

Conclusions:—The advent of the air scout will greatly increase the value of our cavalry, which though it must be prepared to fight as heretofore, both offensively and defensively, mounted and dismounted, it must study and be fully prepared to perform the rôle of mounted infantry.

Infantry, *having nothing to fear in its front*, will have its *marching powers* continually taxed to the utmost.

Briefly, *victory*, in the wars of the future, will be to the swift.

The influence of air craft upon tactics and upon our military policy is deserving of the most careful study.

Adage:—A man never flies so high that he doesn't have to "light."

Maxim:—The advantage is with the command that "*gets there fustest with the mostest men.*"

DANIEL L. ROSCOE,
First Lieutenant First Cavalry.

BETTER HORSE BREEDING.

The Editor:

IT is suggested that the attached letter from the Chief of the Bureau of Animal Industry, Department of Agriculture, be published as showing the widespread results of the stimulus given to better breeding in most States of the Union.

F. R. MCCOY,
Captain G. S. C.

Dear Colonel Allen:

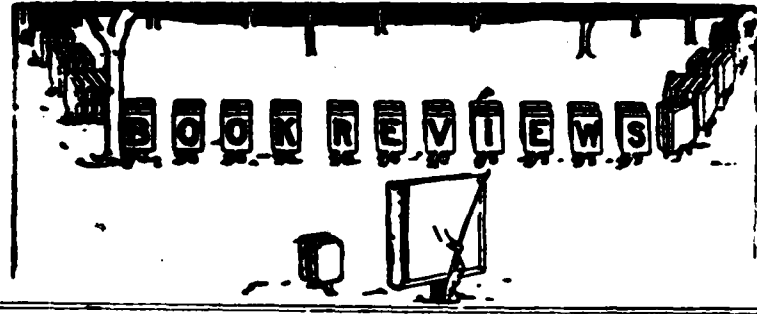
I thank you for your note of the 7th, enclosing copy of Captain McClure's letter* on military horses in general. I am returning this herewith, as I presume you wish to retain it for your files. I noticed the marginal note from you. I have also made one on page eight.

*Published in the CAVALRY JOURNAL for January, 1914, page 567.

Might I suggest that an article in the CAVALRY JOURNAL on the work which the states are doing to improve horse breeding might be interesting and useful to officers in the mounted service? I have noticed repeatedly that there is a very widespread misapprehension as to the scope of the state laws in this respect. Few officers in the service realize that between twenty and thirty of our states have laws prohibiting the standing of unsound stallions for public service. Not only that, but a horse must stand for what he is; that is, if he is a registered purebred, he is licensed as such, if he is a grade or a scrub, he must stand accordingly. And also, the State of New Jersey has for some years been placing stallions on favored locations to encourage horse breeding. The stallion registration work of the different states has been adopted in part by the British Government in their work to encourage horse breeding and promises to be one of the most valuable features of this project in England.

Very truly yours,

GEO. M. RÖMMELL,
Chief, Animal Husbandry Division.



**Technique
of
Modern
Tactics.***

The purpose of this work, as stated in the readable and interesting introduction, is to furnish a guide to those engaged in the study of practical problems in tactics, and a convenient ready reference for officers charged with the preparation and conduct of field maneuvers, tactical rides, wargames, etc.

The introduction is followed by the Organization of the United States Army and Tables of Road Spaces and Camp Dimensions, all in convenient form for reference.

The solution of tactical problems is treated in a masterly manner in Chapter I; the style is clear and attractive and reveals a deep insight into the foundations of human character. The simplification of the difficulties of tactical problems by diagrammatic analysis is deserving of special notice, and the suggestions for the preparation of problems will be appreciated by those called upon to submit general and special situations—often on short notice.

The acquisition of a crisp, epigrammatic style of expression by assiduous practice, after consulting good forms of field

*"TECHNIQUE OF MODERN TACTICS." By P. S. Bond and M. J. McDonough, Majors, Corps of Engineers, U. S. Army. U. S. Cavalry Association, Fort Leavenworth, Kansas, Agent. Price, \$2.65.

orders, as recommended by the authors, is the best way to avoid mere imitation of "telegram" style on one hand, and the verbosity of the tyro on the other. The recommendation to stick to the usual form in writing orders is approved, for the recipients of orders are accustomed to the standard form. The proper sequence should be observed in verbal and dictated, as well as in typewritten and printed orders. This has the advantage of requiring the commands of the smaller forces to "arrange their thoughts," which can not fail to contribute to the clearness of their orders. The discussion of "Field Orders" by the authors lends new interest to an important subject.

The chapter on Patrolling is so full and good that it is difficult to find anything to add. Under messages we should, however, prefer to say "Messengers, as a rule, do not rejoin their patrols, but return to their troops without delay."

Advanced cavalry is defined to be "that portion of the advance guard cavalry which precedes the *Mounted point*. Field Service Regulations, par. 103, states advance cavalry to be "that part of the advance guard cavalry preceding the support." If, in the latter case, we consider the word support to include the point (mounted scouts) and the advance party, there is no possibility of misapprehension. The definition given by the authors appears to be preferable, especially if we substitute for "mounted point," "point of the advance guard."

The whole subject of advance guards, and the kindred subjects, rear and flank guards, are fully considered, and illustrated by examples of field orders.

The condensed information with reference to artillery material, organization, powers and tactics, will be of great value to officers of other arms.

The treatment of the subject "Cavalry Tactics" is in line with modern thought. The method of securing immobile horses known as "coupling" does not appear to be mentioned. This method releases practically all the troopers for dismounted action. It is practiced in the Russian Army, has been adopted in many American cavalry regiments, and is prescribed in the new drill regulations.

Many of our cavalry commanders will not agree with the statement that it requires one to two minutes to dismount to

fight on foot, not counting time required to take position on the firing line. It must be remembered that the perfection of drill can not be counted on in campaign.

"Under very favorable conditions the cavalry may safely allow the enemy to approach within 700 to 800 yards of the position before withdrawing, or, if the force be not more than a troop, to within 600 yards." There are many situations in which this would imply an excess of caution. With our horses only a few yards down a reverse slope and the enemy laboring across a soft field or through wire fences, a proximity of 300 yards is still safe. The enemy may furnish the incentive to some bold riding, but a few casualties would be more than paid for by the effective fire possible between 600 and 300 yards.

The subjects of "Outposts," "Combat," and "Organization" are comprehensively treated and richly illustrated by diagrams, maps, and examples of orders.

The chapter on "The Rifle in War" will be found to be one of the most interesting in the book. The "Notes on Division Tactics and Supply" contain a mass of valuable data of a practical nature.

The book as a whole forms a compendium of reliable military information which will prove to be a great convenience to the student.

The authors are to be congratulated on clearness of style and felicity of expression throughout the work.

Technical Spanish *

This book is what its title claims for it. It contains nineteen chapters touching, sufficiently to give one a fair vocabulary, on the following subjects:—physics, chemistry, the conservation or keeping of modern powders, electricity, the utilization of water as a motive power, steam, applications or uses of compressed air, turbines,

*A READER OF SCIENTIFIC AND TECHNICAL SPANISH, for Colleges and Technological Schools, with Vocabulary and Notes. By Cornelius DeWitt Willcox, Lieutenant Colonel, United States Army, Professor U. S. Military Academy, late General Staff Corps, Officier d'Académie. Sturgis and Walton Co., New York. Price, \$1 75, net.

the transmitting of power to a distance, mining, bridges, railroads, surveying, topography, geography, the automobile; aeronautics, submarines, the campaign of Santiago de Cuba.

Since the author states that his texts are copied verbatim, and since the authors of the several texts are standard the consideration of the information imparted is a minor one, so that it conforms with the teachings of our best authorities; this it seems, in the main, to do. The choice of contents with reference to its scientific corrections is, therefore, good.

The technical phraseology does not render the translating of the text hard, for many of the words are cognate to Spanish and English, and further, as the student is presumed to be undergoing, or to have undergone, a technical education, the context supplies many meanings which might be obscure to the layman. The language used is serious, correct and not very idiomatic, and is such that the reader must have a good working knowledge of Spanish in order to derive benefit from his reading and from the new terminology presented. The choice of contents with reference to the language used is, then, also good.

The vocabulary in the back of the book gives only technical words and is sufficient, accurate and good. The notes and plates are sufficient.

The inclusion of the chapters on modern powders, bridges, surveying, topography, aeronautics, submarines, and the Santiago campaign renders the book especially valuable to the military or naval reader who expects to come into contact with Spanish speaking peoples. The other chapters are of scarcely less interest to the military reader, and all of the chapters are important to the technically educated man who intends to operate in a Spanish speaking country.

Save for a number of careless typographical errors the book is attractively and well printed and is heartily to be recommended as filling a long felt want.

THOM CATRON,

*Second Lieutenant Twenty-third Infantry,
Instructor, Dep't. of Languages,
Army Service Schools.*

Field Musicians' Manual.* This is a small book—6" x 4 1/4"—of 141 pages. It is well illustrated and printed and is bound in cloth.

The following from the Author's Foreword shows the scope of the work:

"The existing necessity for uniformity among musicians or trumpeters, calls for a book that will tell exactly what their duties are and give the service new marches, inspection pieces and sound-offs.

"Under the heading 'Calls sounded by the Musician of the Guard' and 'Calls sounded by the Assembled Field Music' will be found the standard regulation calls that are used by every branch of the Army. Those used by the Naval service are marked with their nautical names.

"The general mounted and dismounted duties for the Army, the duties of the Naval service, Engineer Corps, Coast Artillery Corps, Signal Corps, Sanitary Troops, Marine Corps and Revenue Cutter Service are all given space in this book.

"In the part marked 'Naval Duties' are found the distinct Naval duties for the Navy, Marine Corps and Revenue Cutter Service.

"The music is divided as follows:

"1. Calls sounded by the Musician of the Guard, which includes all honors rendered on the instrument.

"2. Calls sounded by the assembled field music or trumpet corps.

"3. Bugle Marches. These can be played either in double or quick time in the foot service, and at a walk, trot or gallop in the mounted arms. Included in this section are over forty foreign marches, inspection pieces and sound-offs that have never before been published in the United States. These were obtained from the following countries: England, France, Germany, Austria, Italy, Russia, Servia, Greece, Norway, Sweden, Belgium and Mexico.

"FIELD MUSICIANS' MANUAL for the Army, Navy, Marine Corps, Revenue Cutter Service and National Guard." By Lieutenant Daniel J. Canty, Ninth Infantry, National Guard Mass. Volunteer Militia; Instructor of Trumpeters for the Service Schools of the National Guard of Mass. Formerly Musician Co. "M," 27th U. S. Infantry. Published by D. J. Canty, Woburn, Mass. 1913. Price, \$1.50.

"4. Drill Signals. Here are found all the drill signals used in the army (and Navy when ashore). The list includes eleven infantry, forty-seven cavalry, thirty-eight field artillery and thirty-nine Navy drill signals. Here are also the special calls of the Army and Marine Corps.

"5. Special Navy calls. Comprises all the calls used on board ship."

Of this book the Chief of Staff of the Army says:

"The Committee of the General Staff at the War College have, after a thorough examination of Lieutenant Canty's Manual, made the following report of it to me: 'The Manual is an excellent one, possesses merit and reflects credit upon Lieutenant Canty for his diligence in compiling the same.' "

Night Operations.* A new book is now in press which is entitled: "Training in Night Movements, Based on Actual Experiences in War," It is a translation from the Japanese by First Lieutenant C. Burnett, Fourth Cavalry. Its thirty-nine chapters cover the subjects of psychological action at night; dress; visions at night; hearing at night; quiet marching at night; crossing rough ground; direction at night; night firing; night intrenching; night demolition work; night sentinels and patrols; passing obstacles at night; night marches; night battle; etc., etc. They also treat of the necessary training in these several subjects, all being based on the experiences of the Japanese in the Manchurian War.

Of this work, Major Farrand Sayre, late Senior Instructor, Department of Military Art, Army Service Schools, writes: "I have been reading the manuscript on 'Night Operations,' translated from the Japanese by Lieutenant Burnett. I think it is an interesting and valuable work. I should like to have a copy myself and would be glad to see a copy in the hands of every company and troop commander in the army."

A more extended review of this book will appear in the next number of the CAVALRY JOURNAL.

"TRAINING IN NIGHT MOVEMENTS." Based on Actual Experiences in War. Translated from the Japanese by Lieutenant C. Burnett, Fourth Cavalry. U. S. Cavalry Association, Fort Leavenworth, Kansas. Price about \$1.25, postpaid. Exact cost not yet known.

+ **Editor's Table.** +

THE RASP.

We have received recently a circular, addressed "To every Officer of the Mounted Service," which is a prospectus of the forthcoming number of "The Rasp" for 1914. As will be seen from the extracts from this circular given below, that it is the hope and expectation of its managers to make this number even more attractive, instructive and pretentious than was the one for 1913.

The following are extracts from the above mentioned circular and the "Partial List of Contents:

"The editorial board of The Rasp has, after mature consideration, mapped out a program for the coming issue which it believes will appeal to every officer of the Mounted Service. The program is an ambitious one and aims to further the interest in horsemanship and mounted sport throughout the service; to spread a knowledge of what is being done in the horse world throughout the country, and to give statistics for the past year of track, field, and show work, and the part played by the Army in each of these.

"It is the hope of the board that this policy will be continued in future annuals and that the book will eventually become the exponent of horsemanship and its progress in our service, and of the policy of the Mounted Service School. This cannot be done by any handful of officers through their individual efforts, but must have the enthusiastic support of the entire Mounted Service. The time given to this work must be taken absolutely from the spare time of the officers outside of their duties as students. This means a considerable sacrifice

on the part of those concerned and an endless amount of confining work. The book must be financed solely by its circulation and advertising matter. Any failure of these two sources would mean that the pecuniary responsibility would have to be assumed by some twenty-five officers. With any kind of support from the officers of the service at large in the way of circulation, the success of the annual is assured, and its scope can be anything that the service sees fit to make it. Every officer is invited to put before the editorial board any feature that he would like to see covered by the annual; any article that he believes would be of interest to himself or others; any phase of horsemanship or horse lore that especially interests him, on any authority whose views he would like to have on any particular subject connected with the horse or horsemanship. All such requests will be taken care of; if it is impossible to cover them in the present issue they will be referred to the next board.

"It is probably well known that The Rasp has grown from the humble beginnings of a class, or school annual with more or less purely local interest, to the excellent volume which appeared last year and which departed considerably from the local feature characterizing the first issue. This policy will govern the coming issue to an even greater degree. All class features will be confined to an exceedingly limited space, as will the details of school work. The Prospectus which accompanies this letter is most incomplete and it is hoped that the board will be able to issue a second edition in the Spring covering more fully the contents of the book. The illustration for the coming year will be the best obtainable and the work in every respect will be of the highest character. The book will be an ornament to any library aside from the value of its contents."

PARTIAL LIST OF CONTENTS.

Types of Saddle Horses and allied Types; Origin of Breeds; The Training of a Colt; The German Breeding and Remount System; Mounted Swordmanship; Army Polo for 1913; Horsemanship in the National Guard; Horse Show for 1913; Steeple Racing and Flat Racing; How to Longe a Horse; How to Braid and Pluck the Mane and Tail; The Cavalry Troop Horse, a

Study in Cross Breeding; A Systematic Method of Keeping an Organization Properly Shod; The Education of a Troop Horse.

NATIONAL RESERVE CORPS.

The Society of the National Reserve Corps has recently issued a pamphlet giving the details of its organization and general information about the camps. The officers of this society, as well as its Advisory Committee are from the Presidents of the larger and more important universities of the country, such as those of Princeton, Harvard, Yale, Alabama, Michigan, California, etc., etc.

The following is the "Statement of the Advisory Committee:"

"After careful inquiry regarding the organization and management of the camps of instruction for college students, established by the Secretary of War in the summer of 1913, we take pleasure in certifying to their excellence.

"The military instruction was thorough. The discipline was strict; but the work was so well arranged that it caused enjoyment rather than hardship. The food, sanitation, and medical care were good, and the lessons received by the students in these matters were scarcely less valuable than the military instruction itself.

"We commend these camps to the attention of college authorities as a most important adjunct to the educational system of the United States, furnishing the student a healthful and profitable summer course at moderate expense."

President Wilson has given encouragement to this movement and regarding it, writes as follows:

"I am very much interested in the successful working out of the idea of these college camps. I believe the students attending will derive not only a great deal of physical benefit from the healthful, open-air life, but also that they will benefit from the discipline, habits of regularity and the knowledge of personal

and camp sanitation which the experience in camp will give them.

"The camps will also tend to disseminate sound information concerning our military history and the present policy of the Government in military matters, in addition to giving the young men themselves a very considerable amount of practical military instruction, which would be useful to them in case their services should ever be required."

It gives a synopsis of the plans for the student camps proposed for 1914, as given in War Department Bulletin of October 17, 1913, and says: "It is hoped that the students who attended the camps in 1913 will do all in their power to call to the attention of students throughout the country the great benefit and pleasure these camps afforded to those attending.

Several pages of the pamphlet are devoted to favorable expressions of opinion from those in attendance at the 1913 camps.

The object of the Society are fully set forth in their Constitution, which we quote in full, inasmuch as they are worthy of the attention of every good citizen of the United States:

CONSTITUTION OF THE SOCIETY OF THE NATIONAL RESERVE CORPS.

Adopted by the Corps, August, 1913.

I. 1. Being convinced of the physical benefits to be derived from living a part of the year in the strenuous, healthful open air life of a military camp, particularly to students whose pursuits have kept them indoors and leading a comparatively inactive life for considerable periods, appreciating the value of and the knowledge gained of marching, camping, care of the person and camp sanitation with minimum expense, and

2. Desiring to increase the economic value and business efficiency of our young men by giving them an opportunity to study the principles of command, organization and administration, and to experience the value of discipline obtaining in modern armies, and

3. Realizing that wars between nations are liable to occur now, or in the future, even as they have in the past, and

4. That, notwithstanding our best efforts to preserve peace with right and honor, our own country may become involved in a war, either of defense against attack, or of offense against any nation that may violate the rights secured us under the Constitution, Laws and Treaties of the United States, and

5. Knowing the above and firmly believing that our present state of preparation and means of meeting such an emergency are inadequate and will lead either to disaster or to useless waster of men, material and money, and

6. Further, knowing that the above state of affairs should be remedied, and realizing that it is each man's duty to his country to do his own proper share to effect such a remedy.

7. We, the undersigned young men of America, do hereby form and organize the "Society of the National Reserve Corps of the United States," and do hereby pledge ourselves, individually and collectively, from pure patriotic motives, to do our utmost without hope of reward, and without fear or favor, to further the objects of said corps and to work for its principles as set forth below:

II. The objects of the Society of the National Reserve Corps will be:

(a) To perpetuate the system of students' military instruction camps and to encourage a large attendance;

(b) To encourage thorough knowledge throughout the country of:

1. Military Policy,
2. Military History, and
3. Military Organization,

and to have these subjects included in the curricula of the various colleges.

(c) To individually train ourselves to the best of our ability to be fitted to serve with best effect in case of need in such capacity as our condition at that time may properly permit.

(d) To establish and support a sound National military policy which shall include the maintenance of a highly efficient Regular Army sufficient for the peace needs of the nation and a well organized and efficient militia, each supported by adequate reserves.

III. Eligible for membership:

Class A. Those men who have attended one or more students' military instruction camps as organized by the War Department; The payment of one dollar insures life membership.

Class B. All other citizens of the United States in good standing, subject to the Rules and By-Laws of the Society. Annual membership, one dollar. Contributing membership, five dollars, annually. Life supporting membership, twenty-five dollars.

Captain R. O. Van Horn, General Staff, U. S. A., has been placed in charge of the organization of these student camps for 1914.

Publisher's Notice.

We beg to announce to Army Officers that the firm of JOHN G. HAAS, UNIFORM MAKERS, is now owned by Ludwig Haas, youngest son of the late JOHN G. HASS, founder of the firm.

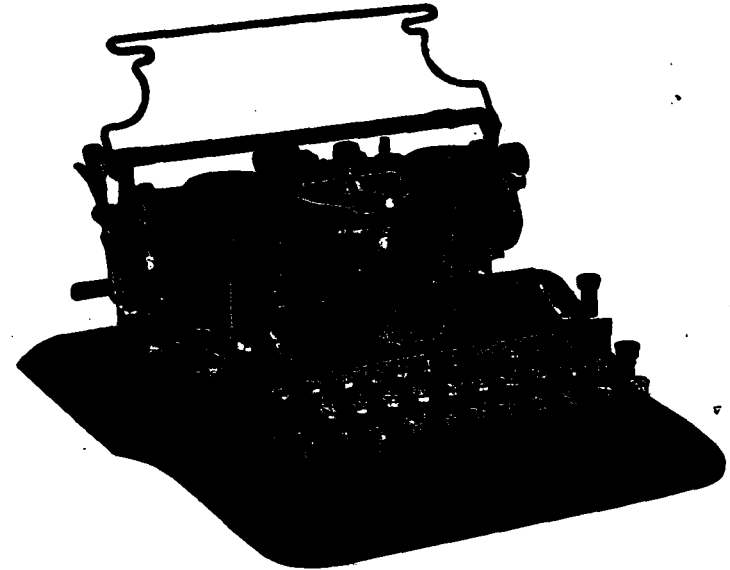
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Mr. J. G. Kamm whose long service with the firm has made him so familiar with the whole aspect of the military business, will continue in the capacity of Manager at Lancaster, Pa.

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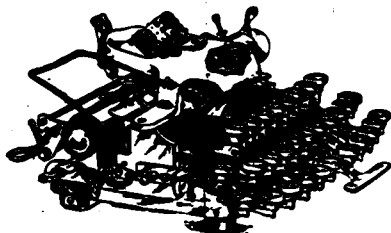
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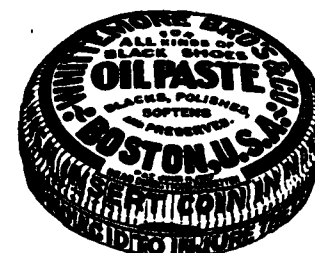
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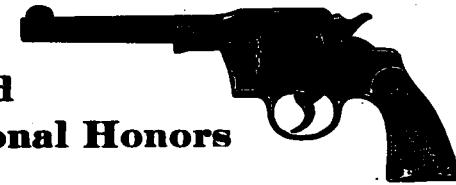
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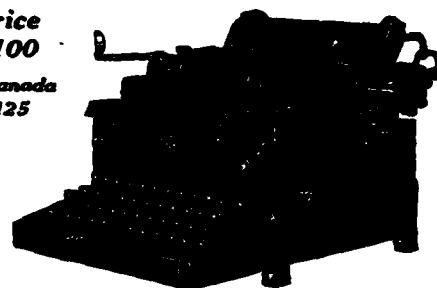
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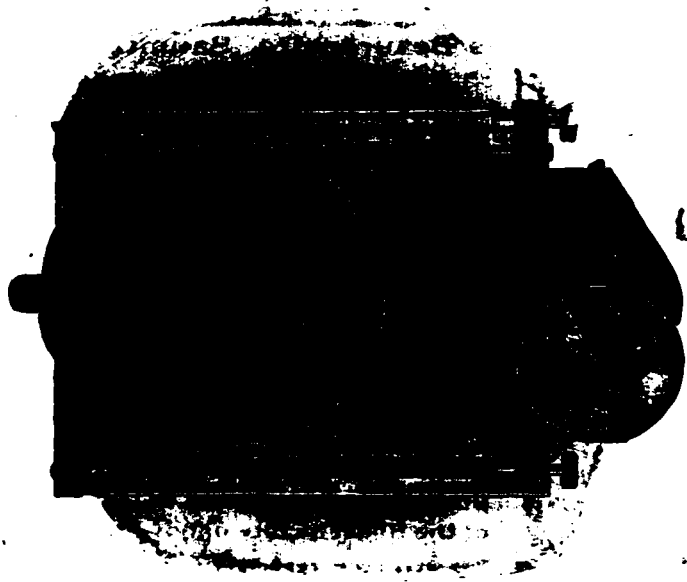
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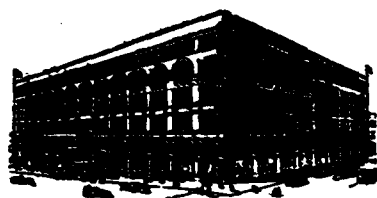
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United States Cavalry Association.

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CAVALRY INSTRUCTION.*

BULLETIN }
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WAR DEPARTMENT,
Washington, October 3, 1912.

With a view to standardizing the instruction imparted at the Military Academy and at the various service schools on the subject of the employment of Cavalry, the following is announced as the policy of the War Department in respect to the use of that arm:

1. Mounted action is the main role of the cavalry arm and its organization, armament, and instruction should be with a view to rendering it effective in such action.

Dismounted action is, however, a very important role of the cavalry, and neither an organization nor the method of instruction which falls to provide for the effective use of cavalry dismounted will enable it to perform fully its functions in war.

2. The organization should be such as to permit of the greatest mobility, which is the essential quality of the cavalry, while providing units of great smashing power in the charge and a sufficient number of rifles to make effective its use when required as a dismounted force.

3. Cavalry must maneuver freely and widely without fearing too much for its rear; and being often at a distance from the main body of an army, its commander must be clothed with authority to conform to actual conditions.

* Reprinted by request of the Chief of Staff of the Army.

4. While the chief task of the cavalry is to assist the other arms in accomplishing the common object, its role is often of primary importance. The action of cavalry must be bold and daring; it must, whenever practicable, assume the initiative, seeking out the enemy and placing him upon the defensive.

5. The principal weapon of cavalry in mounted action is the horse and the force of impact should be utilized to the utmost. The terrain and nature of the operations will determine which of the other weapons must be used.

6. When circumstances permit, cavalry opposed to cavalry should fight mounted, thus retaining the mobility and power of maneuver necessary to its security and success.

7. The historical value of cavalry, including the experience and evolution of our own and that of other countries, must be carefully studied, and due consideration should be given to the greater magnitude of our future cavalry operations as compared with our experiences since the Civil War.

8. The use to which cavalry should be put in campaign is summarized as follows:

- a. To seek and destroy the enemy's cavalry.
- b. Screening, contact and reconnaissance.
- c. Seizing and holding important advanced or isolated positions, thus delaying the advance of the enemy until the arrival of the other arms.
- d. To operate on the flank and in rear of the enemy.
- e. Raids and other enterprises require great mobility.
- f. The mounted charge at the opportune moment against Infantry or Field Artillery.
- g. Energetic pursuit of a retreating enemy or covering retreat of its own forces.
- h. When none of the above roles has been assigned to it, cavalry may go to the assistance (dismounted) of hard pressed infantry to fill gaps in the firing line.

By order of the Secretary of War:

W. W. WOTHERSPOON,

Official:

Major General, Acting Chief of Staff.

GEO. ANDREWS,

The Adjutant General.

THE CAVALRY OPERATIONS IN MIDDLE TENNESSEE IN OCTOBER, 1863.

BY MAJOR GENERAL GEORGE B. DAVIS, U. S. ARMY, RETIRED.

THE operations which are to furnish the subject of this paper were undertaken by General Wheeler with a view to threaten Nashville and Murfreesborough and to interrupt the lines of supply of the Army of the Cumberland to such an extent as to cause it to loose its hold upon the city of Chattanooga whither it had withdrawn after the battle of Chickamauga on September 19 and 20, 1863. The city was closely invested by the Confederate Army of the Tennessee under General Bragg; its principal line of supply by the Tennessee River had already passed into the control of the enemy, and its garrison was forced to rely for its daily supply of food and forage upon a long and difficult line of wagon communication over the Cumberland Plateau, which was so inadequate to its daily needs as to make it necessary to place the troops engaged in its defense upon reduced rations shortly after the siege lines were established in the latter part of September. It is true, as will presently appear, that relief, in the shape of abundant reinforcements, was approaching the city but if, in the meantime, General Wheeler could succeed in cutting off its supplies, there seemed to be no alternative but surrender. The conditions of the investment were such that the besieged place could not relieve itself, but must be relieved by an outside force; and such a force had already been set in motion with a view to relieve the army from its embarrassing and dangerous situation.

The spring campaigns of the Armies of the Potomac and the Tennessee had culminated in the signal victories of Vicksburg and Gettysburg, from which the Confederacy could hardly expect to recover. But the Army of the Cumberland had achieved no such decisive advantage. After a succession of brilliant strategic maneuvers, in which it had been handled with

the greatest skill, it had succeeded in freeing middle Tennessee from Confederate control; more than this, it had compelled General Bragg to abandon the line of the Tennessee River, including the city and defenses of Chattanooga, and withdraw in the direction of Atlanta. But Bragg had turned at last and had attacked Rosecrans on Chickamauga Creek, where he had so worsted his opponent as to cause his retirement to the defensive lines in front of Chattanooga. So far in its operations, therefore, the Army of the Cumberland had failed to carry to a successful termination the ambitious program which it had set out to accomplish at the opening of the campaign. But it was something to have pushed Bragg back to the south bank of the Tennessee and to have gained permanent possession of the city of Chattanooga, the gateway to Atlanta and the sea. With these it was forced for the time, to be content.

The theater of operations is worthy of careful study. The Tennessee River flows through the region from east to west, at no time very distant from the southern boundary of the State. Across the entire field extends a high table land, known as the Great Plateau of the Cumberland. The plateau itself is generally flat and fairly well adapted to the movement of troops; its ascent, however, is everywhere difficult, due in part to its altitude and in part to its geological structure, in which soft rocks underlie a harder formation at the surface. As the underlying strata disintegrate, due to the effects of wind and weather, a precipitous wall is left which is inaccessible save at places where small streams have worn out slopes reaching to the summit of the plateau. The Sequatchie, a northern affluent of the Tennessee, divides the table land into two parts, Walden's Ridge, which reaches the Tennessee nearly opposite the city of Chattanooga, and the Great Plateau of the Cumberland extending to the northwest in the direction of Nashville.

The Tennessee River is fordable at many places within the theater of operations; below Chattanooga it is navigable at ordinary stages, and formed an essential part of the line of supply for the garrison of the city. As the lower river was in the hands of the Confederates, however, no supplies could pass, and the troops had been placed on short allowance of food so early as the beginning of October; the artillery horses and draft ani-

mals were in still worse case, as grazing had become impossible and short forage had simply ceased to exist.

The mounted forces of both armies had not changed, either in numbers or organization, since the close of the Chickamauga Campaign. The cavalry of the Army of the Cumberland, composed of two divisions, was commanded by General D. S. Stanley and had received the organization of an army corps; attached to the corps, in most of its operations, was Wilder's excellent brigade of mounted infantry, armed with repeating rifles which gave it the fire power of a division. General Stanley had been compelled to leave the field, on account of illness, early in October, and had been succeeded in command by Brigadier General Robert B. Mitchell. In the operations on the north shore of the Tennessee, however, the troops were largely handled by the division commanders, General George Crook and Colonel E. M. McCook. The Confederate cavalry corps remained under the command of General Joseph Wheeler, who had two divisions of cavalry under his immediate control. Forrest's division had taken part in the Chickamauga campaign and a portion of it participated in Wheeler's operations north of the Tennessee. Considerable support was also afforded by the mounted forces in Mississippi under General Stephen D. Lee.

An attempt to determine the absolute strength of the forces engaged in these operations has most of the essential aspects of a Chinese puzzle. The reports and returns of the Union forces are generally full and may be relied upon to give the strength "for duty," as well as the "aggregate, present and absent," which is generally several times in excess of the actual effectives. In the case under examination, however, there are no returns of the Union cavalry of a later date than July 3d—a rather remarkable omission. The returns of the Army of the Cumberland for October 31st, some days after the operations had been completed, show 9,732 officers and men "present for duty." The same return shows 11,651 as the "aggregate present," and 18,353 "present and absent," nearly double the number present for duty. Having regard to the arduous service required of the cavalry since the opening of the Tullahoma campaign in the early summer, and the heavy detach-

ments made for escorts and train guards, it may be doubted whether over 7,500 mounted men took part in the operations north of the river.

On the Confederate side there is the same uncertainty. A correspondent of General Beauregard, who visited the lines of the army early in October, gives Wheeler's strength at 4,500 on October 10th. Three days earlier, on October 7th, General Bragg reported 13,620 cavalry "present for duty," but estimates that sixty per cent. of his mounted force was absent from their commands. This would give a strength, present and absent, of 34,000 men—an absurd figure which could only have existed in the vivid imagination of the staff officer who compiled the return. If we rate the Union cavalry at 7,500, and the Confederate at 6,000, I am sure that it will not be far from the truth, especially when it is remembered that mere numerical strength was not, at any time, a decisive factor in the military operations.

Before passing to the operations of the campaign, it is proper to say a word as to General Wheeler's purpose in engaging in such an undertaking, in face of the obstacles which he was sure to encounter in the character of the country and in the opposition of the enemy. The region which he was about to enter was but sparsely populated, there was no accumulation of food-stuffs calculated to support an invading force and the country through which he was about to pass abounded in obstructions to the movement of troops. To the west of the Sequatchie Valley there was some improvement, and if the Nashville and Chattanooga Railroad could be reached and destroyed, the chief line of supply of the city would be seriously interrupted.

It has been seen that a more promising object of attack, and one more immediately useful to his command was to be found in the heavy supply trains that were known to be on their way from Nashville, over the long and difficult road which crosses the plateau of the Cumberland. The capture of these would put the garrison of Chattanooga on less than half rations, and would enable Wheeler's hungry troopers, for the first time in months, to feed to repletion. It was wisely determined, therefore, to make the moving trains the first object of capture or destruction. If the Confederate commander should be successful in that undertaking, he could push on in the direction of

Murfreesborough for such incidental destruction of the railway and bridges as might be found possible of accomplishment, before the Valley of the Tennessee below the city was fully occupied by the 11th and 12th Army Corps under Hooker, who had reached Nashville from the Army of the Potomac and were pouring into the vicinity of Bridgeport and Stevenson, a position from which relief might be afforded to the starving garrison of Chattanooga and its dependencies.

The Army of the Cumberland had hardly settled itself in its new defensive lines before it became apparent to General Rosecrans that trouble was brewing in the upper valley which since the close of the Chickamauga campaign had been abandoned to the enemy and had become the scene of some of Wheeler's activities. Although it was not known just what form this activity would take, it became clear as the month approached its end that a movement of Confederate cavalry to the north bank of the river was, to say the least, highly probable; that such an incursion was actually impending became so apparent in the last days of the month that special efforts were put forth to guard the upper fords and to resist any effort on Wheeler's part to pass to the north bank of the Tennessee.

To that end the Second cavalry division under General George Crook was established at Washington, a town on the north bank of the river about fifty miles to the northeast of Chattanooga. Crook was charged with the defense of the upper river, and was assisted by Wilder's excellent brigade of mounted infantry. The first division under the command of Colonel Edward McCook, was encamped in the vicinity of Bridgeport with outlying detachments of considerable strength at the crossings between Caperton's and Kelly's ferries.

The initiative was taken by General Wheeler who, with the main portion of his command, left his position on the Confederate right and, on September 29th approached the river at Cotton Port Ferry, not far from Decatur, a practicable crossing but a short distance below General Crook's position at Washington. After a careful examination had been made of the available crossings east of the city of Chattanooga, General Wheeler had found them all so carefully picketed as

to preclude an attack in the nature of a surprise; he therefore determined to force a passage at Cotton Port where the local conditions seemed to favor a crossing in force. This was accomplished on September 30th after some resistance, but without serious loss.

Considering the length and vulnerability of the line to be guarded, it may be conceded, I think, that General Crook had taken reasonable precautions to prevent the enemy from passing to the north bank of the Tennessee. He had distributed his command along the threatened river front in such a way as to give timely warning of the approach of the enemy. But, as is frequently the case, it was found to be impossible to maintain a parity between the services of security and information, and concentrate an adequate force at the ford where a crossing was actually attempted. General Crook was able, however, to mass some troops at Cotton Port, but they were not in sufficient strength to successfully oppose the passage of Wheeler's command. It may not be without interest to know General Wheeler's opinion as to the vigilance shown by General Crook in guarding the river above the city where he was trying to find a place to cross; on this subject that officer says in his report:

"The enemy had occupied the opposite bank and immediately concentrated a force nearly if not quite equal to our own to resist our crossing. This force had followed me up the river, and I found that any point at which I should attempt to cross could be reached as easily by them as by my command. Under these circumstances, I determined to cross at the point I then was."^{*}

As soon as the crossing at Cotton Port had been accomplished and before his line of march had been decided upon, it was important for General Wheeler to learn something of the movements of the enemy's supply trains. He had only been able to learn that the larger train was crossing the great Cumberland Plateau and was about to descend into the Sequatchie Valley; he, therefore, crossed Walden's Ridge and, on October 2d, entered the valley, moving in the direction of Jasper where, on the following morning he captured a train of thirty-two wagons belonging to the Fourteenth Army Corps. He then turned to the northwest intending to ascend the plateau

^{*}Vol. XXX, Official Record of the Rebellion. Part II, p. 723.

and continue his movement in the direction of Murfreesborough. At Anderson's Cross-roads in the upper Sequatchie Valley the great supply train was encountered. It was accompanied by an inadequate escort which was attacked and, after a gallant defense, was overpowered and the train given over to pillage. It is proper to say at this point that, had the train been as heavily escorted as General Wheeler supposed when his report was written, its capture would not have been so easily accomplished by the forces at his disposal. The number of wagons, which he places at 800, regarding that, apparently, as a conservative estimate, turned out to be somewhat less than 300, including the 32 wagons belonging to the Fourteenth Army Corps which had been captured earlier in the day. According to Colonel McCook some 800 mules were recaptured by his command, as were a considerable number of teams which had escaped destruction.

To General Crook the danger of the city of Nashville and the important places in its vicinity seemed a matter of more serious concern than the fate of a single supply train, however important and valuable its contents may have been; he, therefore, pushed forward with all speed to intercept Wheeler before he could reach McMinnville, a town on the western border of the plateau of the Cumberland in the vicinity of which a number of important railway bridges were located. With Minty's and Long's brigades, Wilder's mounted infantry and Stoke's Chicago Board of Trade Battery he crossed Walden's Ridge and entered the Sequatchie Valley at Pitt's Cross-roads, not far from Pikeville.

As we have seen, the First Division under Colonel McCook was encamped in the vicinity of Bridgeport where news of Wheeler's crossing at Cotton Port was received on September 30th. In obedience to instructions from General Rosecrans, which reached him at 11 o'clock A. M., on October 1st, McCook left Bridgeport with three regiments of his division having for his objective Anderson's Cross-roads, forty-five miles distant. It was his purpose to take and maintain such a pace as would bring him to the Cross-roads at daylight on the following day. But this was prevented by a heavy and long continued down pour of rain, so that he was unable to reach the scene of destruc-

tion until noon of October 2d. As he approached the Cross-roads it became apparent that they were still in possession of the enemy. Leaving a portion of his command to observe and prevent the approach of the enemy from the direction in which Wheeler had come, he advanced with two regiments of cavalry and one section of Dunlap's Battery, and found the enemy in force about two miles from the Cross-roads. A mounted attack was made as soon as the command could be properly formed for that purpose. The enemy was pushed back for several miles when night brought the encounter to a close.

The approach of McCook caused Wheeler to expedite the destruction of the captured train and resume his march toward McMinnville, which he assumed to be occupied by a Union garrison. Such indeed was the case. Hodge's Confederate brigade, which had not taken part in the attack on the train, marched in the direction of McMinnville in advance of Davidson's division; in the afternoon of October 3d, he approached the town and found that Clay's battalion had driven in the Union outposts. The surrender of the place was demanded and acceded to, without resistance by its commander; as the place seems to have been regarded as untenable, General Granger had ordered its evacuation and it would thus appear that, in failing to withdraw his command, the senior officer present had been guilty of disobedience of an order which, had it been carried into effect, might have saved the disgrace of surrender. The garrison at the instant of surrender consisted of about 600 men; a large quantity of valuable stores also fell into the hands of the enemy. The march upon Murfreesborough was then resumed and the place was reached on the morning of October 5th. The stockade at the railroad bridge at the crossing of Stone's River was captured with its garrison and the bridge completely destroyed; a train and a considerable quantity of stores at Christiana and Fosterville, together with all the bridges and trestles between Murfreesborough and Wartrace were also destroyed. Shelbyville was occupied without resistance on October 6th, and the command halted at Duck River for a short rest before resuming the march.

As Wheeler had gained a start of some fourteen hours, a vigorous and strongly sustained pursuit was necessary and this General Crook attempted to give. Between Anderson's Cross-roads and Murfreesborough he was able to get into contact with the enemy on at least four occasions. These contacts were alike in all their essential incidents. As Wheeler's rear guard was approached by its pursuers, it was halted and, if necessary was reinforced from the main column by a contingent of dismounted skirmishers. These were attacked by a similar, but generally preponderating force and, when some advantage had been gained by the pursuers, the enemy was assailed by a cloud of mounted men charging as foragers. These rear guard contacts were generally successful, and the pursuit was continued until the enemy's main body was encountered, or his rear guard had reached a place which was susceptible of defense against cavalry. It is well to remember that most cavalry charges at this period of the war were made in the formation as foragers. Infantry in close order was rarely attacked by a mounted force, and it was only when it was found in open order that such an attack was attempted. If the open order formation was due to the fact that the infantry was to some extent shaken, or was advancing in loose order to deliver an attack, the charge was usually successful—that is a number of the enemy were killed and wounded and a considerably larger number were made prisoners.

Neither reports nor correspondence indicate that cavalry charges with the saber were made at any time during the operation. This was largely, if not entirely due to the fact that few of General Wheeler's command were armed with sabers, or had any experience in its use. It was frequently observed that, when one mounted command attacked another, the one which had the more sabers easily rode down the other. The Union cavalry was, as a rule, mounted on better and heavier horses than was that of the Confederate Army. This, added to the majority of sabers was generally sufficient to turn the scale. The Confederate cavalryman, weighing never more, and often less than one hundred and fifty pounds, mounted on a correspondingly light horse, was the finest agency in the service of security and information that the world has ever seen; it is earnestly to be

hoped that the breed, both of men and horses may never become extinct in the United States.

It had been General Wheeler's purpose, not only to reach and occupy Murfreesborough, but if conditions were favorable to threaten Nashville. As he approached the former place it became apparent that the pursuit by Crook and McCook had been so vigorously maintained that he would be unable to carry out that part of his program. So at Murfreesborough, he turned his columns down the Duck River in the direction of Shelbyville. The divisions of Crook and McCook were now joined, under the orders of General Mitchell the corps commander. On October 7th the entire command turned to the west in the direction taken by General Wheeler who aimed to reach one of the lower fords of the Tennessee River.

After turning to the south General Wheeler halted at Crowell's Mill with a view to concentrate his command, which had been marching on separate roads and so had gotten to some extent out of hand; here he learned that the enemy was approaching Farmington, a place at some distance from Duck River and nearly due west of Shelbyville. Crook began the attack with Wilder's brigade, followed by a mounted charge which was well delivered by Long. Both seemed to be successful until the enemy reached a position of advantage in a cedar thicket from which it was believed to be impossible to dislodge him by a mounted attack. The enemy was unable to withstand the sustained and well directed fire of Wilder's repeating rifles, however, and reluctantly continued his retreat in the direction of Farmington where Wheeler made a bold and determined stand with a view to check his pursuers long enough to enable him to make a final push toward the Tennessee River.

On the morning of October 7th, General Mitchell learned that Wheeler's command had divided, one column marching in the direction of Shelbyville, a second moved in the direction of Wartrace but, early in the day, desisted from its purpose and joined the main column; a third detachment had turned to the right and was approaching Unionville. McCook's division was ordered direct to Unionville while Crook pushed forward on the Farmington Road, where Davidson's confederate division was encountered on the Duck River about two miles north of the

road. Wilder's mounted infantry, having the advance, and the enemy appearing to be in some confusion, was ordered to make a mounted assault and succeeded in driving the enemy into a dense cedar thicket, which abound in this portion of Tennessee; here Wilder dismounted his men and continued the attack. The assault on foot having shaken the enemy, a saber charge of Long's Cavalry brigade was ordered and delivered with such success as to force the enemy back a distance of about three miles. About three quarters of a mile from Farmington, Wheeler was again encountered, this time too, in a close cedar thicket, then and since the chief sources of most of the material used in the manufacture of lead pencils in the United States and elsewhere. Here they were attacked by dismounted men but, as Colonel Minty's brigade, which formed a part of the attacking force, failed to get into position, or even to appear on the field of battle, the attack not only failed of success but the entire command of General Crook was seriously compromised, as the enemy's line extended considerably beyond his own. Stokes' battery was posted so as to assist in repulsing the enemy and its fire, added to that of Wilder's repeating rifles, threw the enemy into some confusion. The conditions again appearing favorable for a mounted attack, Long's cavalry brigade again charged the enemy with sabers which was gallantly pursued and only failed of success when the roads leading to Wheeler's rear were found to be blockaded. No further stand was attempted by General Wheeler, who crossed the Tennessee River at Muscle Shoals, carrying with him a considerable quantity of captured property and teams; his principle capture of wagon transportation at Anderson's Cross-roads had to be abandoned, most of it at the place where it was captured.

While General Wheeler was engaged with the enemy at Farmington, General Roddey, who seems to have exercised some sort of local command in Mississippi and Alabama, approached the Tennessee River at Hess Ford, some distance below Chattanooga, where he was prevented from crossing, partly by the strength of the enemy and partly because of the swollen condition of the river. Failing at Hess's Ford he moved to Bellfonte, but only to find the river impassible in that vicinity; he finally succeeded in passing to the north bank at Larkins'

Perry and Guntersville. Moved by the feeling of destruction which seems to have been in the air, he did some damage to one of the tunnels on the Nashville and Chattanooga Railway. At Salem he received information as to Wheeler's condition and prospects, which made him pause and led him to conceive the idea of joining Wheeler in the neighborhood of Decatur. In the afternoon of October 12th, he came into contact with the Union cavalry near Huntsville in an indecisive engagement which was terminated by darkness and a heavy downpour of rain. Learning that General Wheeler had recrossed to the south bank of the Tennessee, Roddey shortly followed; subsequently he offered to destroy the Union communications if a regiment of Kentucky cavalry could be given him. Why such a discrimination should be shown between Kentucky cavalry and that from Illinois or Tennessee, I have been unable to find from the reports or correspondence of the period; the reports are also silent as to whether the Kentucky cavalry was to be in addition to, or in place of his own command; at any rate his offer was rejected. In his report a similar suggestion was made to General Bragg who does not seem to have regarded it as sufficiently alluring to warrant the further employment of military force in its attainment. With this flourish of wind instruments, General Roddey seems to have been permanently eliminated from the military situation in middle Tennessee.

With General Wheeler's retirement to the south bank of the Tennessee followed, a few days later by that of Roddey, the Wheeler Raid came to an end. The results must have been, on the whole, disappointing to General Wheeler himself, not less than to his immediate superior, General Bragg, and to the authorities in Richmond. He had captured and partly destroyed a large train load of supplies which the enemy could easily afford to lose, as his normal line of supply, by the Tennessee River was opened by the aid of reinforcements from the east a few days after his command had crossed to the south bank of the river. He had carried no consternation into middle Tennessee because he had not been unable to enter, or even to seriously threaten that section. The cavalry of the Army of the Cumberland caught his trail as soon as the place of his crossing had been reported and followed close upon his heels until he

recrossed to the south bank of the river. His losses in men and horses were considerable, and were difficult to replace; he had gained nothing—not even the reputation of being a better and more resourceful soldier than any of his opponents. Although the skill and resolution which he had displayed throughout the undertaking were of a high order, they had availed nothing, save to ensure his return to the Confederate lines after the expedition was over.

The situation of the Army of the Cumberland, closely besieged in Chattanooga, on short and daily dwindling rations and the apparently defenseless condition of the region to the north of the Tennessee had seemed to offer a tempting prize, which slipped out of his hand when he attempted to gather it in. The opportunity to destroy railroads and bridges had been fully availed of, but had only operated to embarrass the enemy without causing serious delay to his operations; nor did the expedition assist materially in the reduction of the Federal defenses about the city of Chattanooga. In spite of his strenuous and well directed endeavors the Army of the Cumberland was relieved, the siege operations came to naught and the possession of a strong base on the south bank of the Tennessee River passed into the hands of the Union commander, never again to fall under Confederate domination, save, perhaps, for the brief period of Hood's invasion in the winter of the following year which was brought to a close by his decisive defeat by General Thomas before the city of Nashville.

THE BATTLE OF NUEVO LAREDO—MEXICO.

(January 1-2, 1914.)

BY FIRST LIEUTENANT BRICE P. DISQUE, THIRD U. S. CAVALRY.

AN attack on Nuevo Laredo had been promised for weeks and as the Christmas holidays approached, those familiar with the fondness of the Latin race for fiestas had selected Christmas as the day.

It seems that Pablo Gonzales, the Carranzista commander, was unable to celebrate "La Natividad" in this way much to the disappointment of the eagerly expectant tourists, who had come to Laredo, Texas, to see a battle.

Rumors of the attack continued however, and on December 31st, it became known that Gonzales had concentrated his forces within ten miles of Nuevo Laredo. That same afternoon Colonel Gustavo Guardiola, commanding the Federal garrison in Nuevo Laredo, received a message from Gonzales to the effect that if the Federals did not surrender or come out of the town and fight within twelve hours that he would take the town by assault. Guardiola destroyed the message without reading it.

The afternoon and evening of this last day of 1913 thus became one of the many interesting and pathetic incidents. A steady stream of women and children, rich and poor, crossed the International Bridge into Laredo, Texas, bringing with them such of their household effects as they could carry under their arms. Mothers with little babies in their arms, children with their pet cats and dogs, came to take refuge on American soil, leaving behind them the male members of their families to defend their homes against the promised attack of the morrow.

As night came on the Mexican population of Laredo, many of whom are Carranzista sympathizers, gathered in small groups on the street corners and confidently and exultingly discussed

what they believed would be the Huertista rout. Mexicans in automobiles dashed around the streets and cries of "Viva Carranza" were heard.

The civil authorities of Laredo called upon the commanding officer of Fort McIntosh for a special guard to assist the police in patrolling the river front and keeping order among the excited Mexicans. The local militia company was called out for duty at the American side of the International Bridge to assist in handling the refugees as they arrived.

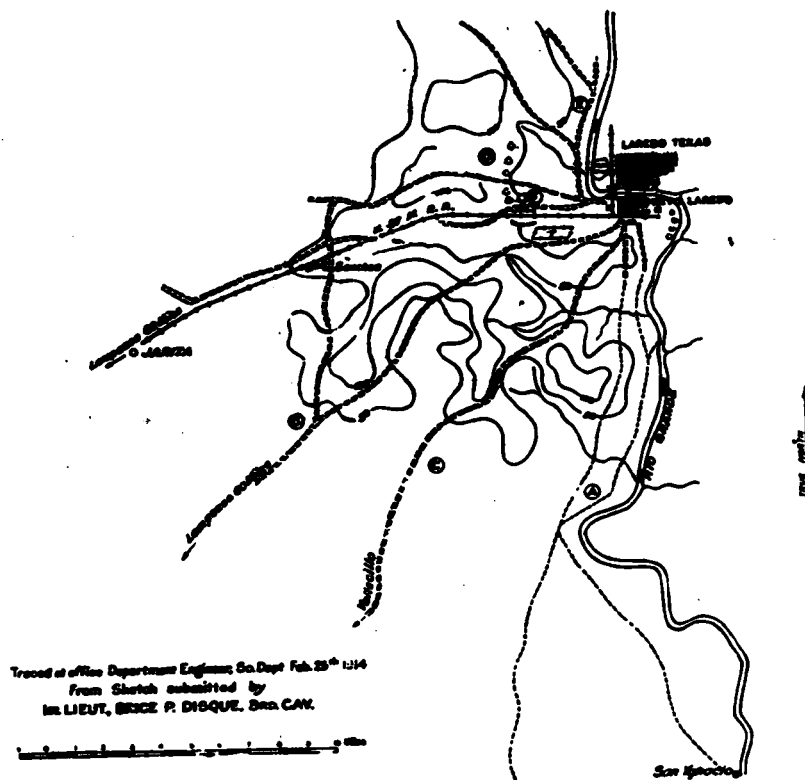
At Fort McIntosh the officers attended the customary New Year's Eve hop, but in service uniform. In Nuevo Laredo, the Mexican garrison also celebrated; their very excellent band was heard playing long after midnight. The American garrison was aroused at 5:45 A. M., January 1st, by the first shots of Gonzales' attack. Thirty minutes later the troops of the Third and Fourteenth cavalry were at the stations previously assigned them for the purpose of keeping the curious crowds from exposing themselves along the river banks, and for other emergencies that might arise.

Although the battle of Nuevo Laredo probably is insignificant as a military event, it must stand unique as furnishing an opportunity for observing at close range the thrilling and spectacular incidents of modern combat. From commanding and commodious, though somewhat perilous, points of observation on the American side of the Rio Grande, and within ranges of from 200 to 800 yards, every detail of the engagement, even to actions of individual men on both sides could be followed. Observers were further favored on both days by ideal weather and a clear atmosphere.

The relative location of the two Laredos and the terrain in the vicinity of Nuevo Laredo is shown on Sketch No. 1.

The I. & G. N. R. R. from San Antonio has its terminal in Laredo, Texas, and here begins the Norte de Mexico R. R. which is one of the main routes to the City of Mexico, passing through Monterey as the first Mexican city of importance. Nuevo Laredo is surrounded by a range of hills rising by gradual slopes from the town to the tops of the hills at an average distance of five miles from the town. The terrain in all directions from the outskirts of Nuevo Laredo had been cleared of all brush, etc.,

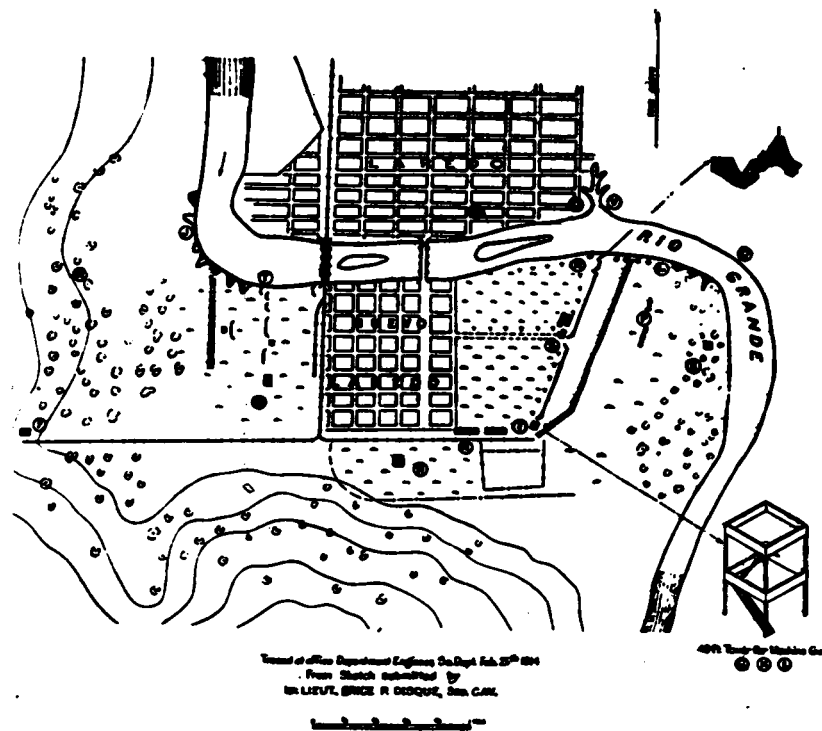
and presented a very clear, level, and unobstructed field of fire to a distance of about 700 yards, beyond which was the usual growth of mesquite and cactus.



SKETCH No. 1.

Nuevo Laredo had been fortified against attack since February, 1913. Sketch No. 2, shows the location of the several lines of parapets, rifle pits, fortified houses and machine gun towers. It can be said that the work of fortifying the town had been done in an excellent manner and the results showed expert knowledge on the part of the officer who laid out the work. At an average distance of one mile from the eastern side of the town was a continuous line of works, strong in profile, and of high command, surmounted by a barbed wire fence. At

a point about 100 yards from the river at (N) the works were changed into two lunettes made necessary by the high banks of the river. This eastern line of works was covered by a double



SKETCH No. 2.

barbed wire fence about 300 yards to the front. It was said that these wire fences were all charged with electricity but I saw several men handle the wires without evil results. In addition to the wire fences the Federals had approximately forty fugases planted at an average distance of 300 yards from their works; these were connected by electric wiring. The western side of the town was covered by a broken line of lunettes extending from (G) to (T) at the river, these were covered in front by wire fences as on the east. The bridge, where it reaches Mexican side, was prepared with sand bags and occupied by a

detachment which was able to enfilade most of the arroyas in the high, steep banks of the river at the bend from (T) to (J). At (G), (H), and (I) were located machine gun towers. These were of open construction, two stories high and protected by walls of wood filled with earth, each about three feet high on each story. The towers stood about forty feet high and afforded excellent points for observation as well as fire. The south side of the town was protected by armored railroad cars which were shunted about by armored engines. These also worked on the west side of town. The two long buildings west of (I) had been prepared for defense. Covering the south side of town was one or more barbed wire fences. The banks of the river throughout course shown are high and steep, broken all long by great arroyas, which however, did not prevent men in single file moving along the water's edge.

Colonel Guardiola, commanding the Federals at Nuevo Laredo, had approximately 1,000 regular troops in the town on December 31st. This force was made up as follows: One battalion of infantry, one squadron of cavalry and a battery of four guns of three inch artillery. To this force must be added about four machine guns and 500 impressed volunteers. His supply of ammunition was not great.

Gonzales, the Carranzista commander, advanced against the town with approximately 3,000 men, disposed as follows: (See sketch No. 1). There was a force of 1,000 under command of Colonel Salcedo in the vicinity of (B) and 2,000 divided into two columns under General Sesario Castro at (A) and (C). He had no artillery and but one machine gun. All of the Carranzista troops were mounted. Their mounts had been almost starved and continuously on the go for several weeks. The men had had nothing to eat, except meat, for fifteen days. They were from all parts of Mexico, as shown by a roster of the wounded, now prisoners in the hands of the United States troops at Fort McIntosh.

Other Federal troops in the vicinity of Neuvo Laredo were: About 700 were at Piedras Negras, about 140 miles up the Rio Grande, and General Quintana was at Lampazos, about 60 miles southwest on the N. de M. R. R., with about 1,400 Federal cavalry and two machine guns. This latter force was known

to be available as reinforcements for Nuevo Laredo and the railroad was open from the latter place to Lampazos on December 31st.

The apparent plan of the Carranzista leader, was to surround the town of Nuevo Laredo and make a simultaneous attack upon it from all sides about daybreak on the morning of January 1st. Preliminary to this Colonel Salcedo with his 1,000 cavalry, at (B) had orders to interrupt the railroad near Sanchez before Quintana could arrive and to stop any reinforcements which might arrive from the west or southwest. All horses were to be left under cover of the hills surrounding the town.

EVENTS OF DECEMBER 31ST.

Knowing that his enemy was in fact surrounding him, Guardiola called upon General Quintana to come to his assistance. The writer while inspecting the guard on the American side of the railroad bridge at 5 p. m., learned from a railroad man that Quintana was coming from Lampazos by rail with 1,400 troops. This was not taken seriously as it was believed impossible that Gonzales, with his troops occupying the country for a distance of twenty to thirty miles from Nuevo Laredo, would permit such a movement while it was so simple a matter for him to interrupt the railroad. However, this very movement did take place at 11:00 p. m. Quintana was received in Nuevo Laredo by the Federal Band and the assembled citizens and soldiery who were not in the trenches.

Salcedo utterly failed in his mission. On the morning of the 31st he sent 200 cavalrymen to attack Jarita, (Sketch No. 1). This attack took place and the little garrison of thirty Federals held the attackers off for three hours when they withdrew to return again about 5:30 p. m., just as Quintana's trains were passing. Quintana stopped and deploying a few companies drove off the Carranzistas and proceeded on his way to assist Guardiola. All the time of the morning attack on Jarita, which is little more than a railroad station, the telegraph operator was sitting on the floor sending messages to Lampazos giving the details of the fight to Quintana's staff officer. It seems incredible that neither the track nor the telegraph wires were

interfered with at any time during this affair at Jarita, but such was the case. Quintana passed Sanchez before Salcedo reached that point.

EVENTS OF THE FIRST OF JANUARY.

Daylight came slowly and as it did the American troops stationed along the river from (U) to (Q), (Sketch No. 2) were able to make out a small force of Carranzistas advancing along the river bank near (L). The river front in Laredo was covered by Troops "M" Third Cavalry, Captain Johnson at the Wagon Bridge and to (U); Troop "L" Third Cavalry, Lieutenant Disque, from (U) to (O); Troop "K" Third Cavalry, Lieutenant Jones from (V) to the bend in the river beyond (Q). The Fourteenth Cavalry troops, "I," "K," and "L," covered from the Wagon Bridge to and including Fort McIntosh.

The attacking force at (L) began to retire as daylight came on and by 7:00 A. M., had fallen back to the vicinity of "K" leaving three dead and five wounded on the field between (L) and (K).

About this time a Federal soldier was seen to make his way towards the river and it was clear that he intended to desert and make for the American bank. Some of his own troop caught sight of him and in a few minutes he was riddled with bullets and hung to a telegraph pole at (N). This is believed to be the only case of attempted desertion on the part of the Federals and we, who had been led to expect wholesale desertions from Guardiola's forces, were agreeably disappointed.

As soon as the Carranzistas had retired to (K) the Federals sent out a troop of mounted foragers to reconnoiter the front. This troop moved out of the works at (S) in column of fours and immediately formed a line of foragers at intervals of about four yards and moved forward, officers in front, at a trot. They were fired on from the line of mesquite as they approached it and retired to the works without casualty.

At about 8:00 A. M. a heavy fire, artillery, machine gun, and rifle, opened to the south of town. The action here could not be observed and what is known of it was obtained from Carranzista's wounded who advanced against the south side. One force of 34 men, apparently without definite orders, reached an open

ditch 400 yards south of (I), another force of about 100 advanced against the railroad at (H). The remainder of Castro's 2,000 remained in the mesquite back on the hill at a range of about 1,500 yards.

The expenditure of ammunition along this southern line was most extravagant during the forenoon and somewhat desultory during the afternoon until 4:00 P. M., when it again assumed wonderful proportions and would have been a credit to a Gettysburg. Not less than seventy-five shrapnel were fired, about two-thirds exploding from 200 to 1,000 feet in the air.

The Carranzista loss from all this was not more than ten dead and twenty wounded.

Salcedo's force was seen at 9:30 A. M. moving north from (F). All were mounted and marching along the crest of the hill. Many of his men wore very light colored clothing and several rode white horses. The movement was easily seen by the writer from his position at (O) with glasses and he was able to form a fair estimate of their strength.

As the head of this column reached (W) the Federal artillery opened upon it. Here some excellent artillery results were observed. The third shrapnel exploded in the column and scattered the leading unit. A few moments later, another shrapnel scattered a part of the column and it then withdrew to the west, dismounted and advanced directly against the west side of the town, many of them utilizing the river bank for protection. In all about 500 men in the thin skirmish line advanced this line fired rapidly and continuously, it was noted that the men seldom knelt or laid down, but fired from the standing position. There was a continuous heavy rifle and machine gun fire from the Federal position, particularly the fortified house and parapet about 400 yards in front of the main line. The artillery of the Federals fired a great deal but did very little execution.

A force of about twenty Federals occupied the small lunette nearest the river at (T). Ten of this number had advanced to a protected point about 500 yards to the front and suddenly finding themselves surrounded by Carranzistas began to retreat. They were seen by an equal number of their enemy

who immediately opened fire upon them at a distance of less than 100 yards. There then ensued a most interesting duel between these two small detachments, each calling to the other to show their bravery, each shooting as fast as he could from standing positions. The result was three killed, two Federal and one Carranzista. The Federals fell back to their lunette and then this garrison of the lunette were seen to suddenly leave their position and rush to the rear. For a moment it was thought that the Federals were retreating and the movement was accompanied by a shout of exultation from the Carranzista sympathizers on the American bank. The Federals however, stopped at the bridge and opened fire which stopped the enemy advancing along the river.

At about eleven o'clock a Federal officer, mounted, rode out from near the center of their line with a small detachment to reconnoiter. It wasn't long before his horse was shot. The horse seemed to be shot in the loins and sank to the ground. At the time other bullets were tearing up the earth about the officer. He slowly stepped off his animal and calmly walked back to the works, smoking his cigarette seemingly unperturbed.

Another interesting case which showed the Mexican's contempt for death was that of a Carranzista machine gun crew. One man was operating a gun, in the open, about 300 yards to the west of the center of the wire fence on the west side of town. He would fire a few rounds and then stand up and walk about for a few moments and then return and fire a few more. Federal bullets were making things warm about his gun but he never seemed to notice them. Finally he was hit and apparently killed. Another man immediately came out of shelter and started to work the gun, he lasted about five minutes when he fell mortally wounded, and was immediately replaced by a third man who picked up the gun, moved it about fifty yards to the right and opened fire. Not one of these men made a hurried motion, all were deliberate and apparently unconcerned and absolutely indifferent to the danger of the Federal bullets which were aimed at them. This is typical of the conduct of all Mexicans under our observation during the two days fighting.

The fire on the west side of the town continued with more or less intensity until dark when neither force seemed to have gained any advantage.

At about 4:30 P. M., there was a reconnaissance from the eastern works toward (K) by about 150 cavalry. They were met by fire from the mesquite and returned to the works. This cavalry was followed in by a small detachment of Carranzistas who advanced to within about 400 yards of the Federal works under heavy rifle and machine gun fire. About dark the Carranzistas again retired towards (K) with loss of one man killed. Two Federals were seen killed behind the parapet, both seemed to be shot in the head.

The firing all around the town ceased at dark and the night was without event except for periodical rifle and machine gun fire of small volume.

EVENTS OF JANUARY SECOND.

The general and heavy fire from all sides of the town at daybreak on the 2d of January convinced us that the Carranzistas had held their positions of the night before. Neither side seemed to have any regard for their supply of ammunition and, as on the first day, there was considerable noise.

On the west and south sides of the town the Carranzistas were satisfied to remain at long range and the fight was little more than a fire-fight at quite safe distances.

The Carranzistas on the eastern side of the town, however, were more ambitious, and, by their daring attempt to effect a lodgement in the works near (N), afforded the observers at (O) and (V) a most remarkable opportunity to watch, at a range of 200 yards, the conduct of two contending hostile forces, engaged in a deadly and stubborn fire-fight for nine hours, at distances from each other ranging from 500 to 100 yards. No man who saw this affair will ever believe that the Mexican is lacking in bravery, courage or initiative.

Taking advantage of the darkness of the early morning, the Carranzistas worked sixty men up along the river bank and as daylight came on the writer was able to count forty-nine men advancing and firing. They were then about 500 yards from the Federal position at (N). There seemed to be no officer in

charge although natural leaders were noted from time to time. The advance was made by groups of five or six men moving forward about fifteen yards and then firing over the top of the river bank, rapidly. After firing a few rounds, several of their comrades would advance beyond them. At about 6:30 A. M., this force was supported by a spirited advance of about forty men from the vicinity of (K), moving in an extended skirmish line and firing from the shoulder and hip while standing. There was cover and plenty of it for single men, but these valient sons of the Aztecs spurned it and elected to expose themselves in order that they might show their enemy their contempt for his rifle and machine gun fire.

The Federals at this time had not more than 100 dismounted cavalymen in the works from (I) to (N). The led horses were kept in the trench at (S) well protected by the high command of the works. It was during this early morning fighting that the Carranzista bullets, which grazed the top of the Federal parapets, fell in considerable numbers in the town of Laredo, Texas. Several hit the office of the Customs Collector at the northern end of the Wagon Bridge. Many of course fell in the meadow between the town of Nuevo Laredo and the line (I)—(N), over which were seen numbers of Mexican women and children carrying breakfast to their soldiers.

When it became evident that the Carranzistas were making a serious effort to gain a lodgement, Guardiola dispatched a squadron of cavalry from the reserve in the center of town to the works along the east front. This squadron dismounted after galloping into the trench and was disposed along the parapet. On this day the fire of the Federals at this point was controlled with great nicety. Never did they have more than enough men standing at the parapet firing. Those men not required were to be seen sitting on the berm with their backs to the parapet and apparently asleep.

As the Carranzistas advanced several fugases were expolded among them. But one man was seen to be injured by these little mines and he was thrown into the air and killed.

The shouts from both sides were plainly heard by the writer and added greatly to the excitement of the affair. Mexican exclamation were freely used and such cries as: "Raise

your head and show us how brave you are," and "Is that the way you fight for Huerta?" etc., passed back and forth all day.

By nine-thirty the Carranzistas had advanced so that their leading men were within 100 yards of the Federal parapet. The fire became intense and the machine gun at (I) got into the action, shortly followed by a 3-inch field piece located near (M). The latter fired shrapnel, several of which grazed the river bank and exploded in the river and a few of which hit in the American bank near (Q). One shell fell within a few feet of a patrol from Troop "K" Third Cavalry and was brought in by them.

At this time the loss in the Federal trenches was three men, all killed; that of the Carranzistas was eight men, all of whom were lying in the midst of their comrades. The sketch herewith prepared by Lieutenant Kirby, Third Cavalry,* is a true and excellent illustration of the position occupied by the two contending forces at about 10:00 A. M. One particularly daring Carranzista can be seen along the bank, about thirty feet in front of a dead man, firing from a kneeling position. This man after firing three shots was wounded in the arm and then made his way to the rear.

One of the attackers being supplied with some hand grenades made his way up to within seventy-five feet of the Federal parapet which begins at the river, deliberately lighted it and threw it into the Federal trench. The Federals behind this trench at this time seemed to be asleep, at any rate they were lying in the trench, otherwise it would have been impossible to approach so close. The grenade killed one man and aroused the others, but the bomb thrower lighted a second grenade and hurled it towards the trench before retiring, which he was able to do without mishap.

Back in the mesquite near (K) were stationed about 200 mounted Carranzistas, supposed to be a support for those shown in Lieutenant Kirby's sketch. This support never showed themselves. The force along the river bank was left to take care of itself and by three o'clock after having been hotly engaged for over nine hours without food or drink, they began to show signs of fatigue. Their fire slackened and it was apparent that they

*Unfortunately this sketch was so rubbed and dim that it could not be reproduced.—Editor.

were about out of ammunition. It was possible for them to withdraw gradually but they elected to remain, probably in the vain hope that reinforcements would soon come up. Several of the wounded remained and were seen trying to fire over the bank with one serviceable arm; one was wounded in the hip and after retiring a few yards found a niche in the bank where he seated himself and renewed his fire.

A goat took it into his head to leave the Federal works near (N) at about 2:00 P. M., and walked slowly towards the position of the Carranzistas, along the crest of the river bank right in line of the grazing fire from both forces. He wandered back and forth for twenty minutes, apparently undecided as to what to do, before a bullet brought him down. Several cows also moved out of the Federal position at (S) and after wandering about for a time met the same fate as the goat.

It was about 3:00 P. M., when the Federals assembled a force of about sixty men near the old tower in Lieutenant Kirby's sketch. An officer was seen talking to them for a few minutes and then with him in the lead they rushed out of the position and along the top of the bank towards the Carranzistas. This counter-attack was of course prepared by a considerable fire from the riflemen behind the parapet and the machine gun at (I).

From this moment on the Carranzistas did not fire. They seemed to become panic stricken and each man made for the rear. Many of them dropped their rifles. The Federals swarmed along the top of the bank and the writer saw the last of this Carranzista force of forty-nine men, shot before he had gone 100 yards beyond the large tree shown in Lieutenant Kirby's sketch at the water's edge near the left of the picture. The victorious Federals then directed their attention to the enemy in the vicinity of (P) and some continued along the river bank. Two Carranzistas were found along the bank about 100 yards east of (L). They plunged into the river and made for the American side. Each was a target of about a dozen Federal rifles. They swam under water until forced to come up for air and each time their heads appeared, the water about them boiled with bullets. One of the two was killed before he had

gone twenty yards, but the other was within ten yards of the American shore when he sank for the last time.

The Federals continued their advance into the Mesquite at the bend in the river. Here considerable firing was heard. About this time a squadron of cavalry mounted and rode out of the trenches at (S) and started a pursuit of the support which had been at (K). The force which made the counter-attack returned at about 5:00 P. M., carrying the rifles of their vanquished foe.

The coming of night was delayed by the usual illumination caused by the burning of a number of buildings on the outskirts of the town. The Federals were responsible for some and the Carranzistas for others.

By seven o'clock all firing had ceased and the attacking force had withdrawn far beyond range of the Federal rifles and guns. It is a fact that Gonzales started his retreat on the morning of the second and that some of his troops had reached San Ygnacio, forty miles away, before he permitted the annihilation of the brave detachment which had been sent, or permitted to, advance along the river to (L).

Starting at about 2:00 P. M. on the second, automobiles, American owned, began to arrive in Laredo, Texas, filled with Carranzista wounded. They were transferred to our side below the bend in the river where friends took them in charge with a view to caring for them in the improvised hospitals on the American side. The impudence and self-assurance, with which the Carranzistas planned for, and brought their routed and wounded to the northern bank of the Rio Grande, excited much comment and just criticism from the Federal refugees and better class of Americans living in Laredo; and, was only possible through the sympathy and assistance of the local civil government. Some of the more ardent of the American Carranzista sympathizers were considerably disgruntled and disappointed because the Post Hospital at Fort McIntosh was not placed at their disposal. Several of the wounded died and on January 15th there were but thirty-seven of them held as prisoners of war in camp at Fort McIntosh.

The Carranzista loss, during the two day's fighting, according to the best information available, was 190 killed and 340 wounded. That of the Federals was 79 killed and 69 wounded.

Guardiola was happy to see eighteen loaded wagons with ammunition come into his town from Piedras Negras on the night of the second. His supply had been almost exhausted and another day's fighting would have been disastrous for him.

COMMENTS.

Under this heading one could write a volume. On the part of the Carransistas there were many blunders. They showed great bravery and indifference to death. Their entire action indicated lack of organization, cohesion and mutual confidence, and seemed to be entirely animated by individual desire to capture a town for the promised loot.

Certainly Gonzales, if he had any control over his men, should have made sure that the railroad, leading from Nuevo Laredo to General Quintana's force, was effectually interrupted before attempting to invest the Federal town. Good judgment would have led him to place the bulk of his force on that side of town knowing that Quintana was to be expected. He should never have permitted the daring attack along the river against the eastern side of Nuevo Laredo on the second, unless he intended it as a secondary attack in connection with something more important, or, he should have reënforced the attack locally. If it was merely an action to cover his withdrawal, it should never have gone as far as it did. Finally, there is every reason to believe that he knew definitely the strength of the Federal garrison, knowing this, he should not have attempted to take it without the determination to push his attack home, and he should have seen to it that his force was sufficient and properly provided with machine guns and artillery. As it was, he evidently placed all his hope in the much talked of panic and desertion of the entire Federal garrison.

The Federals showed many of the characteristics of good troops, they might have easily been cut off entirely from all support. As it was they were 300 miles from their nearest base, Monterey. With them it was a fight to the death. Early in the action it was apparent that "No quarter" would be

shown and no prisoners taken. This was apparent after a small detachment of Federals, about fifty in number was surrounded early on the morning of the first and massacred to the man. Despite all this their entire conduct was characterized by a high degree of discipline, coolness under fire, and entire lack of nervousness, showing that they were officered by men of superior ability and character. They had nothing to gain and everything to lose, and stood their ground loyally in the belief that they were serving a government, to whom their allegiance was due.

BULLETIN NO. 18.

BY CAPTAIN G. W. MOSES, FIFTEENTH CAVALRY.

BULLETIN No. 18, War Department, October 3, 1912, has been brought to my attention by being again printed in the U. S. CAVALRY JOURNAL. (Page 531, January, 1914.)

That Bulletin is a highly creditable little document, but its reappearance caused me to wonder what conditions in our service could have induced our Chief of Staff to request its republication. This "wonder" set me to thinking and this paper is the result. I asked myself what changes have been made in modern war conditions which will have a bearing on the methods of securing the results which are asked for in Bulletin 18?

At the beginning of the Civil War, our cavalry was undeveloped, our officers without that kind of training and experience which was needed in a great conflict, but they were also free from traditions which filled them with false ideas, and the result was that some of the best cavalry leaders of modern times were developed and a cavalry officer today, whether he be American or European, must include a careful study of the methods of cavalry leading during our Civil War, before he can lay claim to having a proper professional education. He must not, however, *confine* his study to that one conflict, for some of the most valuable lessons come from a comparative study with other wars, or else he will find himself suffering from traditions almost or quite as mischievous as those which affect some of our European friends who have failed to include that war in their lists of subjects.

In paragraph 1 we read: "Mounted action is the main rôle of the cavalry arm and its organization, armament, and instruction should be with a view to rendering it effective in such action. Dismounted action is, however, a very important rôle of cavalry and neither an organization nor the method of instruction

which fails to provide for the effective use of cavalry dismounted will enable it to perform fully its functions in war."

As a preliminary, I wish to say that I am not dwelling upon the subject of equitation because it is generally admitted to be a necessary preliminary to all cavalry training that the horses shall have reached a high degree of obedience and docility and shall be so physically trained as to enable them to carry their riders over all sorts of country with a minimum expenditure of energy, and that the riders must be able to sit their horses lightly and with good balance. For the cavalry officer however, to forget that these things are but a means to an end is to make the same mistake as for the infantry officer to think that his education is complete so soon as he has learned his drill and has become a fairly competent instructor on the target range.

Surely every one is willing to admit that the duties of cavalry are properly summarized in paragraph 8. Differences of opinion will begin to appear, however, just as soon as we begin to discuss the means by which these results may be obtained, but the object of this article will have been accomplished if I succeed in presenting any new ideas which will in the end lead to beneficial thought and discussion.

Paragraph 1, quoted above, correctly states that we should give shock action a foremost place in our minds when forming a decision as to what to do in a given case. This fact can not be too strongly impressed upon the minds of the American officers because dismounted action has been so perfected in our cavalry that we are apt to exaggerate its importance just as our European friends are prone to underestimate it.

I am firmly convinced that cavalry should be trained with a fixed purpose to meet the enemy mounted whenever and wherever tactical conditions permit. In the earlier stages of the war, especially, we should strive to meet the enemy's cavalry and to overwhelm it in a charge, because the charge is quicker and its results more decisive. When our army is waiting for information, time is valuable and little or no useful reconnaissance work can be done until the enemy's cavalry is overwhelmed, and to get the morale of the enemy absolutely we must show him that we are not trying to avoid shock action. Another advantage of mounted action is that we are more than likely to

drive the enemy in the very direction which it is well for us to take in order to do effective reconnaissance, while the delay which follows dismounted action will allow him to recover his morale to such an extent as to lead us away from the point most dangerous to him or else to organize protecting parties which will effectively delay our advance. Again, cavalry without the offensive spirit is not cavalry, and the offensive, dashing spirit implies at least a *desire* to close with the enemy mounted.

The close of a charge finds practically every man in contact with the enemy who is not actually disabled, or whose horse has not been killed. Every student of military history knows that this is far from true of dismounted troops; the proportion of stragglers among untrained or under-officered troops sometimes becomes very great. Many horses which have been mortally wounded carry their riders through the charge and help to deliver the blow against the enemy's line, so that the percentage of effectives which can be brought against the hostile line, even in the face of a galling fire, is greater than can be hoped for from a dismounted line under similar conditions.

To say, however, that we can always compel the enemy to meet us mounted or else refuse to meet him at all is foolishness. It is not so easy to evade a mobile force of the enemy armed with machine guns and long range rifles and, if he is equipped with artillery, the problem becomes much more difficult. The result will be that, even on favorable terrain, we shall be frequently compelled to attack dismounted with either all or a part of our force. This will occur more frequently than we would like; and, for that reason, every cavalry column should be equipped with some cyclists who will be capable of acting as supports for fire action without interfering with the mobility of the column. Of course light, or horse artillery and machine guns are always necessary.

Where the enemy takes the initiative and indicates that he is preparing to meet us dismounted, or where the ground makes it uncertain whether or not he has dismounted supports, it will be foolish to form immediately for the charge. Time must be taken to reconnoiter the position and to prepare for the attack. This seems almost like a platitude but I have known of so many charges won on maneuver grounds, through the

kindness of the umpires, under conditions which would have led to the annihilation of the charging cavalry, that I am convinced that the remark is not, necessarily, superfluous. In our desire to instruct our cavalry to fight mounted we must not be so enthusiastic on the maneuver ground, in the war game, or in the map problems, as to make ourselves ridiculous or we destroy, rather than strengthen, confidence in our arguments.

"When circumstances permit, cavalry opposed to cavalry should fight mounted, thus retaining the mobility and power of maneuver necessary to its security and success."

I have often had it preached to me that, at the beginning of a campaign strategic patrols and contact squadrons should be sent out well in advance of the army cavalry for the purpose of locating the enemy and sending back word to the main body as to his whereabouts, strength, dispositions, etc. This implies long marches well to the front, among most perilous surroundings and, in the face of active cavalry, entails a superhuman job upon the advance troops and all for the purpose of getting information, which either never returns at all or is so old when received as to be of very little value to the cavalry commander. The contact troops move out by forced marches for sixty or seventy miles to the front and after these extraordinary exertions either have to go into hiding or else they are captured or destroyed by the fresh troops *near* the enemy's main body after their mobility has been seriously impaired by long marches and lack of provisions. The cavalry accomplishes little or nothing and the army commander either obtains his required information from elsewhere or fails to get any, and every one asks "what has become of the cavalry?"

Whatever may be the object of the reconnaissance, I am of the opinion that the best way to obtain results is for the whole body of the cavalry to advance along parallel roads, making a step by step advance (moving from one good strategic position to the next), carefully reconnoitering between positions by means of patrols and aeroplanes, until the enemy is located and then, taking advantage of night or weather, unsuitable for the enemy's aeroplane reconnaissance, to concentrate everything and break the enemy's screen. This being done we shall be free to obtain information of value and by

means of wireless telegraphy or telephone, we should be able to transmit what is received while it is still new enough to be of value.

Right here I wish to say something about aeroplanes in connection with this early reconnaissance. Aeroplane reconnaissance is a factor upon which we must reckon, for cavalry in the future will not be able to fulfill its mission except in combination with it. As indicated above, aeroplanes can and should be used boldly while seeking the enemy's cavalry. By this means the horses will be saved for the fight and our cavalry's concentration be conserved by the lack of necessity for shoving out reconnaissance parties one or more days' ride to the front. As soon as the enemy's cavalry is defeated and we have reached the position from which we desire to prosecute our vigorous reconnaissance, the air scouts will be sent out and not only furnish valuable information of the enemy, but also advise our cavalry commander as to where cavalry reconnoitering bodies should be sent, so as to get a maximum of information with a minimum effort.

Incidentally prior to efficient work with the aeroplanes, there will probably be a fight between the air fleets and there we should be able to support our own air ships and aeroplanes by fire from balloon cannons. For that reason balloon cannons has become a necessary part of the equipment of a cavalry division.

On account of the great extent of the front of modern armies, together with the impenetrability of that front due the long range of modern fire arms, it will be impossible for even victorious cavalry to obtain much information of the enemy's dispositions, therefore the cavalry must be accompanied by aeroplanes and it must be equipped with a view to supporting and protecting the air fleet. Aeroplanes on the other hand, must be accompanied by cavalry, because its work must be supplemented by a mobile force which is also capable of moving quickly across country to new bases of support and reconnaissance. There never has been a finer opportunity for team work than that which will present itself in the next great war.

Very frequently the aeroplanes will be able to advise the cavalry commander of important positions which are in im-

mediate danger of being seized by the enemy, and so allow our cavalry to increase its value to the army Commander by beating the enemy to that position and holding it until the arrival of other troops. This has always been an important duty of mobile troops but their value along this line should be many times greater than heretofore.

After the battle opens, the cavalry certainly should not waste its time by laying around in ambush, awaiting a favorable opportunity to charge, nor should it be held in rear of the line as a part of the general reserve. If a part of a defensive line, it should be echeloned to the front for the purpose of observing the enemy's dispositions in time to allow the supreme commander to make proper dispositions to meet them and enable him to deliver the counter charge at the best time. On the offensive it should also press to the front for the purpose of screening the movements of the advance and reconnoitering the enemy's line. In either case it will be in the best position to take up the pursuit or to cover the retreat. It will also be ready to assist in the fight directly by striking the enemy in flank or rear, either spreading panic and disorder by means of fire or, should the opportunity offer, by delivering a telling charge.

If, due to the terrain or other causes, this employment of the cavalry is impossible it should be held back and its strength conserved for future usefulness unless it is necessary to "go to the assistance of hard pressed infantry or to fill gaps in the firing line."

The pursuit is, I believe, one of the few places where cavalry should be cautious. It will not be advisable to allow the enemy even a local success for everything must be done to lower his morale. The parallel pursuit is the only one which will, in general, succeed, for a direct pursuit will soon be stopped by the enemy's rear guard. In the parallel pursuit fire action should be resorted to as the principle means of harassing the enemy and the mounted charge should be resorted to only when the tactical and psychological conditions insure a successful result. In general, the front of the enemy's retreat will be so great that cavalry can only hope to keep it moving by threatening its rear and by annoying it with fire; to charge would deflect

it from its proper mission and, at best, only secure a local success.

When the enemy's front is extended over fifty or sixty miles, operations against his rear will be practically out of the question but we can and should operate against his flanks. By that means we shall be in position to strike him a telling blow on the flank and to keep him worried about his line of communications. At the same time we shall keep him from successfully conducting an enveloping or turning movement against our own army.

Later on in the war, after both armies have been broken up into smaller detachments, we shall have opportunities for raids against the line of communications or other important points. In movements like raids in which great mobility is required, the horses should be quitted and dismounted action restored to with great reluctance, especially by smaller bodies. And here, again, do aeroplanes become of transcendent importance because they will be able by well timed scouting to prevent the cavalry from becoming involved in an inopportune fire fight, and to prevent unnecessary patrolling by advising the cavalry leader of threatened danger.

In conclusion: I have avoided the subject of organization and only touched on armament so far as would be suggested by the modern factor of the aeroplane. To my mind the great essentials for every cavalry officer to bear in mind are: (a) The step by step advance; (b) The resort under all practicable conditions to the "offensive hook;" (c) the attempt to carry out the parallel pursuit when victorious and to prevent it when protecting a retreating army; and, (d) The cultivation of mental attitude favorable to the employment of cavalry mounted, so that the psychological effect will be to cause him to resort to dismounted action only after having rejected mounted action as impracticable.

FORAGING AND CONDITIONING OF CAVALRY HORSES.*

BY CAPTAIN ARCHIE MILLER, (CAVALRY), Q. M. CORPS.

I HAVE been directed by the Chief of the Cavalry Board to submit my views on the proper foraging and conditioning of cavalry horses.

1. I believe that troop commanders have in the past displayed less interest in this matter than any other duty connected with their command. The result has been that we have fat, ill-conditioned, short-winded animals that quickly run down and become unserviceable when put to any severe tests. We do too much stable duty and grooming "by the numbers" as recruits do the manual of arms. Just why no one should be permitted to talk while grooming is beyond my comprehension, for any man who handles a horse intelligently should talk while doing so.

Too much care is exercised to see that men fall in promptly at assembly for stables. Many of these men would be at the stable earlier and getting their mounts conditioned if permitted to do so.

Stable duty could easily be made a pleasure instead of an irksome bore.

I am glad that the old custom of grooming cold horses before daylight is rapidly falling into disuse. No good trainer would waste time then on grooming. Brush the animal off, of course, but do the grooming after the horse has been exercised and turn out the entire command at this time so that every special duty man can get acquainted with his mount.

I have seen one grooming a day when it was a great improvement over the present custom. Everybody was present for grooming at 10:45 A. M., and only those horses that were exercised in the afternoon were groomed again that day. All horses were invariably brushed off before being saddled.

*Report made to the Adjutant General of the Army, through Chief of the Quartermaster's Corps, and published at the suggestion of the Chief of Staff.

Stop the taking away of a trooper's horse by officers and non-commissioned officers just when that animal has become well conditioned by a man who loves and cares for his mount. It takes the heart out of the trooper and should be permitted only in an emergency.

Our horses are on the picket line or running in a dirty corral much of the time when they should be in the stable. Stable sergeants like to have their horses out as much as possible so the stable will look clean when officers inspect. We should have a stable police on duty all the day to collect the manure as it is dropped and this should be deposited in fly proof manure pits at once, from where it can be hauled out daily. In many garrisons, one manure spreader to each two troops would be a time and money saver.

All troops should have "swipe sticks" and use them when the horses come in hot.

2. About exercising:

Too many troops start out at a "Trot," the rear of the column at a "Gallop" to catch up. The first and last of all exercises should be at the "Walk." The horses feet should be permitted to expand before being put to the more rapid gaits.

Fresh air and exercise is the life of the horse, so give them the exercise regularly even though the weather may be inclement. Too many horses stand in the stable for several days on account of weather conditions and then get a double dose of exercise the first day out, the very time when they should be exercised less strenuously.

3. In considering the subject of proper foraging, I wish to state that so far as I have observed in the service we have almost wholly disregarded the best authorities in this very important matter and have permitted our animals to be foraged by the stable hands with little or no attention from the troop officers except perhaps to see that the quality of forage is satisfactory. The officers who neglected to properly supervise their mess would soon hear from that omission of duty, but the horse must take what he gets, when he can get it and cannot complain. The result is that he (the horse) is gorged during a portion of the day and starved during the remainder.

Let us consider the custom in general use throughout the service. Five o'clock or 5:30 A. M., stable sergeant remarks "Horses not to be watered because they don't drink well at this hour." He remembers that it will be so much easier for the watering to be done after the early morning grooming when a larger number (not all) the men are there. The stable hands hurry to grain and hay the horses; they must hurry because they want to be at the dining room when mess call goes. Assume that the horses have been fed six pounds of grain and five pounds of hay; they must hurry because the troop will be down to groom shortly and perhaps they will be removed to the picket line for grooming and the stable hands will want to hurry and police the stable. The horse quickly bolts his grain, and promptly follows this by devouring as much of the hay as possible. (If he is off his feed, that is his lookout, and his identity will not be detected if he stands in a different stall every night, which is a practice in perhaps only a few troops).

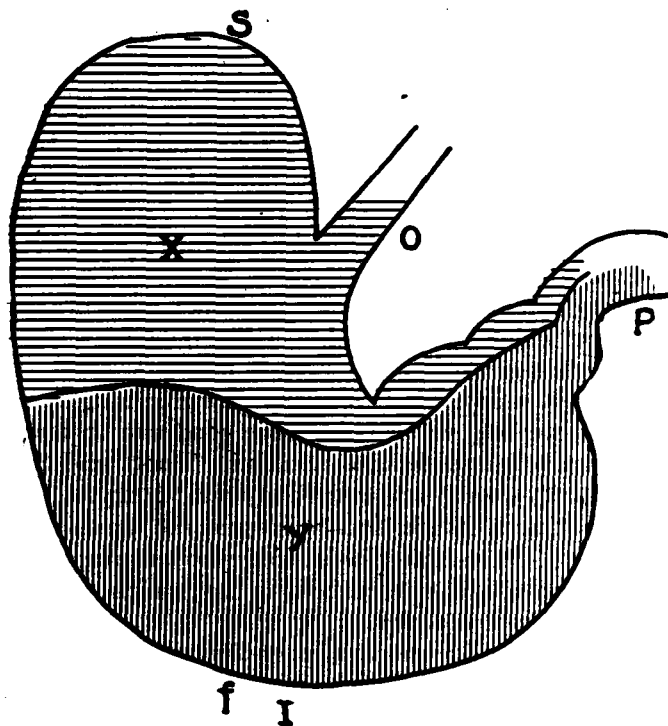
He is then groomed and will no doubt be watered immediately after grooming. It is true that the grooming at another time (after exercise) will do him more good and that watering at this time will impede digestion, but "Boots and Saddles" will sound very shortly and everybody must hurry.

Except that we water first, we repeat the same schedule in the evening. (I have often wondered who was responsible for that wise order requiring three feeds a day, which was certainly a step in the right direction.)

Let us now consider the subject of digestion. "A Manual of Veterinary Physiology," Smith—relative to the "Arrangement of Food in the Stomach," from which I quote (See diagrams herewith,) states:

"An interesting, practical and physiological study is the effect of feeding horses on different foods in succession. When hay is given first and oats afterwards, the hay is found close to the greater curvature and pylorus, and the oats in the lesser curvature and cardia; no mixing has occurred, both foods are perfectly distinct, and a sharp line of demarcation exists be-

tween them (Fig. 41, I).^{*} During digestion mixing occurs at the pylorus but nowhere else; no matter what compression the contents have undergone as the result of gastric contractions, the foods always remain distinct. The presence of the oats, however, causes the hay to pass out more rapidly than it would

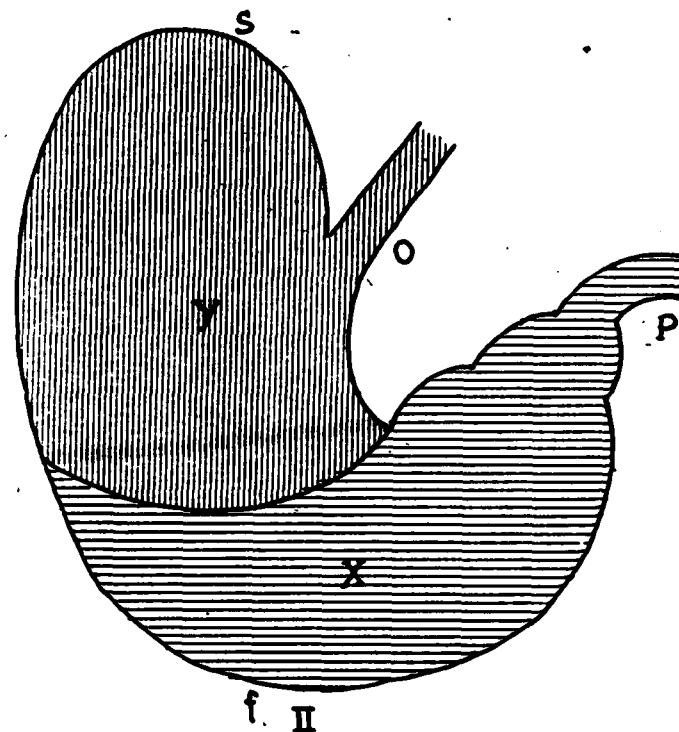


Hay first; followed by oats. "Y" shows the hay and "X" the oats. The latter passes along the lesser curvature and escapes with the hay at pylorus.

have done had it been given alone. Colin observed that half the hay, but only one-fourth or one-sixth of the oats, would, under these conditions, pass into the intestine in two hours. Ellenberger has shown that when hay and oats are given in

^{*}Figure 41 of Smith's Veterinary Physiologs shows a longitudinal section of the horse's stomach, giving the arrangement of the food according to the order in which it was received. In each case "O" is the esophagus, "P" is the pylorus; "S" the left sac; and "F" the fundus.

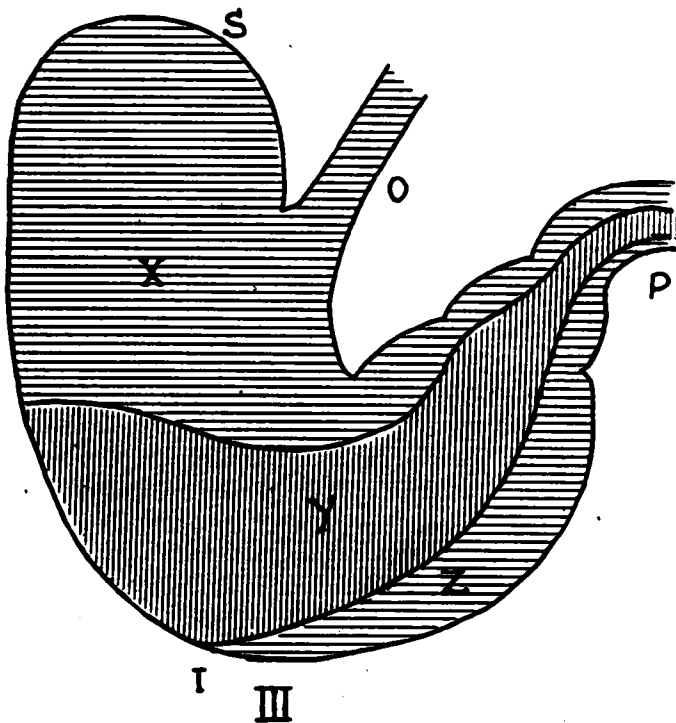
this order, a portion of the oats may pass out into the bowel by the lesser curvature without entering either the left sac or fundus of the stomach (see Fig. 41, I). When oats are given first, followed by hay, (Fig. 41, II) the oats commence to pass



Oats first; followed by hay. "X" shows the oats and "Y" the hay.

out before the hay, but the presence of the hay causes the oats to pass more quickly into the intestines than they otherwise would have done. If a horse be fed on three or four foods in succession they arrange themselves in the stomach in the order in which they arrived, viz., they do not mix. The first enters the greater curvature, the last the lesser curvature, and it is only at the pylorus that any mixing occurs under ordinary conditions (Fig. 41, III). This regular arrangement of the different

foods in layers is only disturbed when a horse is watered after feeding; under these circumstances the contents are mixed together and digestion thereby impeded. Apart from this, the influx of a considerable quantity of fluid into a stomach already containing as much as it should hold, means that material is



The order of three successive feeds. "Z" shows the first feed, "Y" the second, and "X" the third.

washed out of it into the small and large intestines, and this may set up irritation and colic. By watering a horse after feeding more than half the food may at once be washed out of the stomach. The water which a horse drinks does not remain in the stomach, but passes immediately into the small intestines, and in the course of a few minutes finds its way into the caecum; hence the golden rule of experience that horses should be watered first and fed afterwards. We may summarize these facts by

saying that in a succession of foods the first consumed is the first to pass out. That does not mean to say that the whole of it passes out before any of the succeeding food enters the bowel for we have shown that after a time, at the pylorus, they mix and pass out together; but the actual influence of giving a food first is to cause it to pass out first. The practical application of this fact, according to Ellenberger, is that when foods are given in succession, the least albuminous should be given first. This appears to distinctly reverse the English practice of giving oats first and hay afterwards, but perhaps only apparently so, for experiments show that the longer digestion is prolonged, the more oats and the less hay pass out, so that some hay (under ordinary circumstances a moderate quantity) is always left in the stomach until the commencement of the next meal. The presence of this hay from the previous feed may prevent the corn of the succeeding meal from passing out too early. According to Ellenberger, in order that horses may obtain the fullest possible nutriment from their oats, hay should be given first and then water: This carries some of the hay into the bowel and after a time the oats are to be given. The remaining hay now passes into the bowel and the oats remain in the stomach. This does not accord with English views of watering and feeding horses, which have, however, stood the test of prolonged practical experience."

The point I am trying to make is that our lack of system in feeding results in a vast waste of forage and our animals are generally ill-conditioned. So many horses when turned loose in the corral after morning drill are famished for food. Their morning grain has been pushed through them mostly undigested and yet some troop commander is surprised to see his mounts eat their droppings at this time.

Many Department Commanders reduce the forage allowance by order. This I consider bad practice for while it may be beneficial to the animals in one post, it may prove detrimental to those in another; this is particularly the case with our present slipshod method of feeding. The reduction should only be made by the Post Commander and depend upon not only the season of the year but the duty performed or to be performed. Troop officers should be assembled by the Post Commander

from time to time to inspect all the Troop mounts and discuss the good and bad practices prevailing in the several organizations. In this manner their interest will be aroused and we will soon have as keen a rivalry as now exists among the several Troop messes.

The relative feeding value of the several grains and grasses will soon be the order of study on the part of Troop officers. When suddenly ordered for duty on the Mexican Border or elsewhere in the field where the forage previously used is not available, they will know when to feed and what quantity of the substitute forage should be given.

I venture to remark that many, since serving along the Mexican border, have learned that Alfalfa must be fed as a concentrate, not as a hay and that crushed barley must be handled carefully and not in the same manner as oats.

THE STATUS OF THE MILITARY DEPARTMENT IN THE LAND-GRANT COLLEGES.*

By EDWARD ORTON, Jr.

OF all the provisions made by governments or by private citizens for the education of the people, in this or any other country, in these days or those of the past, few, if any, can be compared in importance and far reaching effect to the Morrill act of 1862. It has brought into existence a group of institutions without a parallel in the field of higher education, either in the breadth of choice of their educational menu, their accessibility to people of all classes, or in the extent to which they are patronized.

In the Morrill act, as in all other documents of great import, every word and phrase has been studied and its various possible signification discussed. These matters are still under a more or less spirited discussion, which must continue until sooner or later the general consensus of opinion crystallizes.

There is one provision in this act, however, which is not ambiguous in its meaning, yet which is subject to wider differences of interpretation than any of the really debatable clauses. I refer to the words, "and including military tactics." Everybody knows just what this means. There is nothing permissive or optional about it. It means that it was intended by the framers of the law that military instruction should be an integral part of the training given by every land-grant college.

That there are very wide differences at present in the way that a military department is administered in the several land-grant colleges is unquestionable. In some the military discipline is like that at West Point, always in force, and the student

*This paper was prepared for presentation before the Land-Grant College Engineering Organization and was read before a joint meeting of that body and the Association of American Agricultural Colleges and Experiment Stations.

lives in barracks, under a strictly controlled schedule. In others the drill lasts one hour per day, but continues through five days a week for the entire four years of the college course. In most of the institutions, drill occurs on three days a week for two years, in others, two days a week for two years, and in others three days a week for one year. From this it appears that while an equal obligation rests upon all institutions founded under the Morrill act to maintain military instruction, there are really very great differences in the extent to which this obligation is felt or recognized in the different colleges.

My purpose in calling attention to these conditions is partly to raise an objection to this lack of uniformity. I think that it is improper that institutions which receive the same bounty should require this bounty in such very different measure.

But the more important part of my purpose is to call attention to a much more serious matter, viz., the wrong mental attitude which most of these colleges assume toward military instruction, in the fact that they give as little of it as they think will pass muster. I deplore the loss to the students, too the schools, and to the Nation from this faulty conception of what the military provisions of the Morrill act are capable of accomplishing, if administered with sympathy and wisdom. It seems to me that many of us are not giving a good stewardship of the talent, which has been put into our hands. Especially do I desire to convince this body that we, as college executives, are failing seriously to take hold of and make effective use of one of the very best tools in our whole educational kit.

The chief motive for the insertion of the military drill requirement in the Morrill act was probably to strengthen our feeble military preparedness by the creation of a body of educated citizen soldiery, which in time of war would become an asset of great importance to us. It was evidently inspired by the serious shortage of persons fit to become officers in the Civil War, which was then in progress, and the terrible suffering of our troops, due to the incompetence and inexperience of their officers. This motive is still the most important one which can be brought forward from the government's side to justify the expenditure which the military drill feature of the Morrill

act specifically occasions. But, while I thoroughly believe in this reason for exacting drill in land-grant colleges, still from the standpoint of these schools I consider it of secondary importance, compared to the intrinsic value of the military drill as an element in the education of any young college graduate. It is for the benefit of the institutions themselves, rather than for the improvement of our national military preparedness, that I am urging that the military drill be treated with more seriousness and consideration.

RESPECTS IN WHICH COLLEGE MILITARY INSTRUCTION IS OF VALUE.

(1) *Disciplinary value.* Military drill supplies a conception of authority, and respect for authority, which nothing else does or can furnish. It is needed more now than half a century ago, and will be needed increasingly as time goes on. How many of the young men that come before you in your administrative capacity for advice or reproof give evidence of being reared in a well ordered and well disciplined home? How many cases come before your notice of young men who are lawless and disobedient at college because they have never been controlled at home? Or, worse still, in how many cases where discipline by the university is inflicted upon a young man for infraction of the rules, do his parents show their incapacity for government by siding with the offender and encouraging him in his folly, by misplaced sympathy and by appeals for the waiving of the university's regulations in his behalf? With our colleges full of young men of such undisciplined antecedents, and the proportion of such growing instead of decreasing, the need of a discipline, fundamental, vigorous and absolutely impartial, is apparent. No greater kindness can be shown an undisciplined, spoiled boy, whose mother is too weak and whose father is too busy to control him, than to put him under military control, where he learns to obey first and ask why second, and where punctuality, self-control, neatness, and absolute truthfulness are the first requisites. No military discipline can ever give a boy what he ought to get at home, but for the boy who does not get discipline at home, the military training is of inestimable worth.

Obedience does not come from precept or from intellectual conviction solely, or even chiefly; it comes from the knowledge of power and authority; and while intellectual conviction should always be used to its limit in securing obedience, there must always be the shadow of the big stick in the background, whether one deals with savages, or boys; or college professors. That is why a good military department in any college is invaluable. It is the one branch of college work where authority visibly rests upon its actual source of power.

(2) *Physical advantage.* Young men who come to college may be divided into two classes—those who are in earnest and those who are not. Happily the first class greatly predominates. But both classes make the same error, though from different reasons. The big does not want to drill because it takes too much time. He has a convenient chance to get a laboratory section or something else, and he does not want to quit and put on his uniform, just when an hour or more would finish an experiment or complete a problem. The idler on the other hand finds that drill interferes with his watching or taking part in the college sports or something else, and hence he would like to be excused. An hour of brisk marching in the open air, with head up, shoulders square, and with every sense alert, under the inspiring influence of mass action, team work and military music, is a grand finish for the day of a college student, and a grand preface to the evening meal. In college or out, humankind are prone to neglect the simple laws of health and fail to take exercise. The drill would be worth while ten times over if it did no other thing than to force students to exercise regularly in the open air. One of its great merits is that it catches the very fellow who would not get the exercise except upon compulsion.

(3) *Intellectual benefit.* As a purely intellectual exercise, military drill is in one respect the equal of any course in college, viz., power of concentration. It keeps a constant demand upon the attention of every man in the company every minute that it lasts. It is memory exercise at first, but as soon as familiarity and practice bring a certain degree of automaticity to the common movement, the nature of the demand changes

and the strategical phase of the subject is developed. The handling of troops, even in a simple military ceremony, requires not only concentration but constructive ability, and the moment that the work leaves the field of ceremony and takes up real military maneuvering, such as skirmish drill, out-post duty, etc., the constructive element becomes predominant. No one, officer or private, can acquit himself well in a spirited, snappy drill without giving a high degree of concentration to the task. The more advanced the work becomes, the more broad and diversified demand does the work make upon the intelligence of the student.

It may be objected that the real intellectual labor falls upon the officers, indeed upon the one officer in command. It is undoubtedly true that the leader does the most work and gets the most benefit, but in a student organization the procedure differs from that of the army, in that every effort is made to vary the leadership and to give the opportunity of leadership to as large a number as possible. The modern formations favor this, for every eighth man is a corporal and responsible for his seven men, and every sergeant has his squad or platoon, etc.

(4) *Development of character.* The old adage that "no one can properly control others who cannot first control himself," is one of these eternal verities which cannot be too often driven into the minds of the young college man. Any young engineer looks forward to controlling others. In a sense every young college man does, whether he is an engineer or not, but in law and medicine and agriculture, the future direct control of a force of men does not loom up on the horizon as it does to one who expects to play a leading part in the railroad, mine, or factory. But how shall we get this power of leadership? How shall we learn to impose our will upon others and still keep their respect and regard? I believe in the laboratory method in most things and I believe in it here. To give a young man power to control others, let him first learn how to obey and to take orders from others. Next, give him a minor responsibility to direct others, and coach him on his faults when he begins. Give him increasing chances to command as fast as he develops ability to use power.

The military organization in a large college offers an ideal method of giving just exactly this opportunity. In a college regiment the size of the companies is usually cut down materially, and the number of officers can be increased considerably over the statutory proportion, without diminishing the prestige of the officers' position to any degree. In this way large numbers of the men get the experience of commanding troops—in fact, every one who develops the least facility or promise in that direction. A young man who cannot develop leadership in a military organization is a young man whose attributes as an engineer need investigation.

Another factor in leadership is the ability to read character. No better place exists in the world to practice this art than in the selection of men for office. Every company captain must study his men, and in making his selections for promotion, under the watchful care of his superior officer, he himself learns a most important lesson.

Another factor in character building is the high standard of personal honor which must go with any effective military control. A soldier is taught a very simple but a very severe code of behavior. He must tell the truth and hate a lie. He must enforce respect for his own rights and must show equal respect for the rights of others. As he wears the uniform of his organization, he must be a gentleman, first, last, and all the time, or he will disgrace his friends as well as himself. He must love his country and serve it with a single mind, even to death. Not a bad platform for a young college man to learn, is it?

(5) *Technical training of engineering value.* Every intelligent man knows that the losses in the wars of the past have been chiefly caused by disease; that those actually killed or incapacitated by wounds are only a small percentage of the whole. Every one knows, or should know, that the life of an army officer is very largely spent in taking care of the physique, strength and health of his men. For a few moments or a few hours of his life, he may be in battle, where a bullet, or a shell or a poisoned arrow may rudely interrupt his career; but more, than 99 per cent of his life is spent in getting ready and keeping ready for this crucial moment. His task is to live right, to conserve and develop his own physical powers, in order to set a

good example, and to be able to see that his men do the same. It involves knowledge of the elements of dietetics, the use of water for drinking, the care of one's own person, keeping clean, keeping a whole skin, and treating wounds and minor injuries. It involves the much more difficult task of seeing that others, who do not know or comprehend the danger, or who lack the self-control to suffer privation, are not allowed to take direct, sanitary risks.

Every manufacturing or engineering enterprise is like an army in the fact that its effectiveness is dependent on the physical effectiveness of its men. And how often on the frontiers in industry, as on the frontiers in war, does the success of an enterprise depend on the ability of the engineer or superintendent to make his men live as they should? How many of our railroad camps, drainage camps, highway camps, and factories are decimated by typhoid, cholera, diphtheria, yellow fever, tuberculosis, syphilis, etc., while work is delayed or stopped and time, money and life are lost, because the engineer in charge did not know that it was his business to protect his men from sickness as well as from accident?

There is no other school so effective in such matters as a well managed camp, where every detail of the sanitation is carefully planned and executed, and where the art of feeding, housing, policing and keeping a body of men well, in spite of unusual conditions of life, is taught by practice as well as precept. Every engineer ought to have the advantage of such an experience as a fundamental part of his education.

But besides sanitation and care of men, military science has many other useful lessons. Military procedure is really engineering. Every military enterprise,—the transportation of supplies, the bridging of streams, the mapping of the country, the making of roads, the making of guns and weapons, the construction of forts and armaments, the science of ballistics, and every other unenumerated branch of the subject is nothing more than the application of the methods of engineering to the art of warfare. Engineering is, therefore, very properly the backbone in the instruction given in every military school in the world.

The engineering schools ought to try to avail themselves of that part of military engineering experience which is appli-

cable to the peaceful arts of commerce and manufacture. No right minded man will deny to the soldier the credit for what he has done to make the world more civilized, more orderly, more healthful, more habitable. Shall we not take from his experience that part which we need in our daily affairs.

WAYS IN WHICH THE COLLEGE CAN MAKE THE MILITARY WORK EFFECTIVE.

If there is anything in these ideas as to the ways in which a military department can be of service to a college, or even in any one of them, then it would seem that it would be worth while seriously to examine ourselves and see if we are doing what we can and what we ought to make use of this force.

I do not wish to minimize the work that has been accomplished, and is being accomplished, by the military departments of the land-grant colleges under existing conditions. To my mind they deserve in most places the very highest praise for doing so well, with so much indifference to overcome and, often, in the face of veiled hostility. Nevertheless colleges can certainly do a good deal more to make the military work more successful.

(1) *Backing up discipline.* The college owes no more important duty to the military department than strongly to support the discipline which the latter seeks to enforce. The drill may be short and infrequent, but while it lasts it must be rigidly administered if it is to do any good. Too often the faculty has been guilty of actually subverting discipline, by winking at infractions of the rules, graduating men in spite of shortage of military credits, allowing students to cut drill in favor of some technical duty, etc.

(2) *Academic credit.* The college should acknowledge the educational value of military training as the equal of any other subject in academic weighting. If a subject is put upon a student's class card as a requirement, with no other credit than a penalty for failure to perform it, that subject is certain to be viewed by the student as an exaction to be gotten through but by no means to be taken seriously. It is discounted in advance. If the college treats the military department with re-

spect and consideration, the student will in time adopt the same attitude, but not otherwise.

(3) *Military courtesy.* Another way to dignify the military work is for the faculty to observe generally and punctiliously the little formalities and courtesies which a military organization makes possible. If the faculty recognizes salutes and gives them to military officers, the value of the office is enhanced and discipline is strengthened. The whole tone of a college, and the relations of its professors and students in class and out, can be greatly improved by the faculty taking the slight trouble to maintain in their work and contact with students a little of the formal courtesy which is required as a matter of course by the military department in its own internal relations.

(4) *Time allowance.* Another thing which can be done to help the military work along is to grant sufficient time to the subject, so that the course can be made to include some of its interesting phases and not be confined to a mere repetition of the manual of arms and company formation. Military science, like any other college work, should be so taught that the student can see his own progress, and also see that there is much more to know than he will get a chance to learn. Any active-minded group of college boys can learn the ordinary drill in a very short time if they have the faintest interest in it. The fact that they sometimes accomplish so little is because they have so little interest in it and receive no intimation from the faculty that they are expected to feel otherwise. If the instruction is progressive, so that a second year man is not expected to do the same thing as the first year man, and the third year man is required to do yet more advanced work, the student's interest is soon enlisted. When there is so much that should be taught, it is a pity that the A B C of it should occupy all the time.

(5) *Adequate instructional force.* Another and a very important thing which the college can do, is to provide adequate teaching force. No college in the land would expect one professor of mathematics to teach a thousand students, nor would it think that it had done justice to its students if it had manned the mathematics department with one professor and an ever ex-

panding and ever changing corps of juniors and senior student assistants, to handle the freshmen and sophomores. Without doubt mathematics could be so taught, but any institution that attempted so to teach the subject would lose caste. Yet that is exactly what all of the colleges are doing with their military departments. One army officer seems, in the mind of the colleges, to be able to leaven the whole mass of students with military knowledge, no matter whether there be a company, or a regiment, to a brigade to be handled.

I am not advocating the employment of army officers to do away with or take the place of the student officers. The opportunity to command and to handle troops is a most important part of the military training of the student; but the cadet officer, as well as the troops, should be under the watchful care and daily coaching of a competent teacher. The colleges ought to take the leadership in recognizing this situation. The rule should be that no officer should ever be required to take charge of more than four hundred men, and that where more than four hundred are enrolled, a second officer should be detailed, and a third when the number exceeds eight hundred and so on. It might be argued that with but one hour a day for drill, the work of these men would be light. This would not be so if they took their duties seriously and really gave themselves to the task of building up their work. Target practice, tactic classes, art of war and advanced instruction would keep them busy. It may be objected that the number of officers available under the law of 1893, under which army officers are now detailed, does not permit doubling the detail of officers upon full pay and allowances at one college, except by depriving some other institution of its detail. This, unfortunately, is the situation at present, but it is a matter that can be remedied. The law has been amended twice to increase the number of officers available, and can be amended again to provide the number that modern conditions demand.

Meanwhile there is nothing whatever in the terms of the Morrill act which requires that the land-grant colleges shall depend only upon army officers to give the instruction in military tactics which the law prescribes. They may, if they so desire, go out and secure as military instructors anyone whom

they can find who knows the subject, whether retired army officer, militia officer, or civilian. Since the War Department does furnish one officer free of charge to the college, the temptation is very natural to assume that the government's duty is to supply more when needed, and therefore, to limit the training to what the one officer is capable of doing until the Government sends more. But I contend that this is radically wrong in principle and in practice, and there is no reason why the college should feel absolved from further responsibility in the matter of providing more instruction when needed. If the War Department withdrew all officers, the schools would still have to provide military instruction just the same.

THE NEEDS OF THE COUNTRY AND OF THE COLLEGES ARE IDENTICAL.

My next thesis is that it is just as important, or more so, to the country at large, and to the War Department in particular, that the military work of our land-grant colleges be strengthened, as it is to the colleges themselves. The officials of the War Department look at the provisions of the Morrill act, and the acts of 1890 and 1907, as being intended to remedy the terrible shortage of officers felt in the Civil War, and, later, in the Spanish War. In view of the very small number of graduates of land-grant colleges who go into the army or even into the militia, and in view of the inability of the War Department to keep track of these graduates or to have any kind of hold on them in event of war, these officials cannot see where all the millions that have been poured into these colleges have thus far done anything in particular to improve the military preparedness of the United States. They partly overlook the very wide dissemination over the country of educated men who have had some military knowledge and experience, and who doubtless would flock to the colors in time of need, but their dissatisfaction and unwillingness to place their trust on such an intangible military asset is entirely natural. It simply means, in event of a sudden expansion of the army in war time, that we shall have a recurrence of the conditions of the Civil War, except that we now have a populace somewhat better trained in military science from which to select.

With the War Department looking at our work in this light, we cannot expect the Government to give us more help unless we can show very clearly that our inefficiency from the military standpoint is not wholly our own fault, that we desire to rectify the situation, and that we cannot do so without further assistance and coöperation.

In order to prove this contention, it will be necessary to discuss briefly the military preparedness of the United States.

Size of the Army. The present status of the army is not satisfactory to those who are in it or those who are out of it, so far as the latter have knowledge of the facts. It is very small considering the population, extent, and exposure of the country. It is, we hope, very efficient for its size, and we believe that it would give a very excellent account of itself, as long as it lasted, in a serious war. Its weak spot is that it has no efficient reserve which could be mobilized in time of trouble.

To create a reserve, two things are necessary—competent officers and willing men. The officers must be competent as well as willing, for an officer cannot be made in a day, no matter how much good-will he brings to the task. In short, a competent officer is a highly trained professional man, whose education and experience must cover five years at least. With competent officers, willing men can soon be made into an effective military asset. The problem of officering the reserve is the real problem, and the one in which the schools can assist in the solution.

The militia reserve. To supply a reserve, two plans have been considered. The first one is to nationalize the state militia under the Dick act. This has been a good measure and is doing a good deal that it was hoped it would do. It has greatly improved the efficiency of the rank and file of the militia. It has trained their officers somewhat. It has welded them more closely into a really national body, but it has not increased the strength of the militia force, nor has it removed its one greatest source of weakness—the elected officer. The highest grade of military discipline can never be developed where the officer holds office by the suffrage of the rank and file. The militia, therefore, does not constitute an efficient reserve, either in numbers or in quality, and it certainly could not be depended

upon to supply many extra officers for the speedy recruiting of a still larger volunteer force.

The veteran reserve. A second plan for recruiting a reserve has been to keep in touch with all discharged soldiers of the army so that they could be quickly called together in time of need. No money is now available for this purpose, and hence, the men have no sufficient inducement to keep the War Department advised of their whereabouts and do not do so. Until Congress passes legislation for a paid reserve, we shall continue to make little or no headway in this important phase of our national defense. The discharged soldiers are not of proper caliber for commissioned officers in any case, and, hence, do not touch the problem we are considering.

West Point and the private military schools. West Point for a long time has not been able to fill the ordinary vacancies of our regular standing army. Every year a considerable number of vacancies are filled with fairly efficient graduates of private military schools, a very few graduates from land-grant colleges and some from civil life with a minimum of fitness or efficiency. A few officers are also secured from the rank and file of the army, after passing rigid examinations. All combined, these sources are barely able to supply the needs of our small standing army, and would therefore, not be able to make much of a showing in providing officers for a reserve or a volunteer army.

The McKellar proposition. There is now pending before Congress a bill (H. R. 8661) to establish and maintain military training schools in the several states and the District of Columbia. These schools must have not less than three hundred students per annum. They will be given an annual Federal appropriation of \$80,000, and a State appropriation of \$40,000. The total annual Federal appropriation contemplated is \$3,920,000. To teach military science in these forty-nine schools, on a plane of efficiency comparable with West Point, or even the better grade of private military schools, would require from three to six army officers per school, exclusive of the instructors for civil subjects. This would require from one hundred and fifty to two hundred officers at the least, which would add \$500,000 to the cost of the plan. The Secretary of War has refused to

approve this bill and has urged that such a sum of money should rather be used to establish a paid reserve.

The army student camps. There have been recently established two student camps, one in California and one in Virginia, conducted by the army for the benefit and training of students in military schools, including land-grant colleges. These camps last six weeks and have been attended by less than two hundred and fifty students. Attendance is voluntary and students must pay their way to and fro, but are subject to no expense except subsistence while in camp. Any student who becomes dissatisfied can withdraw at any time, so that real military discipline is not enforcible. Fifteen or more officers are detailed to supervise and instruct at these camps.

This experiment is a good one as far as it goes, but it does not go very far. It undoubtedly tends to stimulate military enthusiasm in the young men who attend the camps, and also greatly assists in increasing their military knowledge and competence. But on its present basis it cannot become a very important measure, because the expense to the students rules out the ones who are most likely to make effective use of such an opportunity, and it gives the training to young men who are headed for West Point and the Army anyway, and who will get the training in time much more thoroughly. It really touches the problem of the reserve officer only to a very limited extent.

The land-grant colleges. The Government is paying out annually, under the act of 1890 and the Nelson amendment of 1907, the sum of \$2,400,000, and the land-grant colleges are also receiving many millions more from the fruits of the original Morrill act, which sums are now a tax on the Government's resources. This great sum of money goes to a large group of land-grant colleges which are required to teach military science as a condition of their existence. They are doing so in such a perfunctory and spiritless way that the War Department can see little practical return, so far as military preparedness is concerned. The Secretary of War, in a recent report to a congressional committee, says:

"In this connection it may not be improper to invite your attention to the fact that there is now and has been for many years in each of the several states an agricultural and mechani-

cal college aided by the Federal Government, where the law requires that military education be given with a view to training young men to act as subalterns of volunteers. These colleges were created by the Morrill act of 1862 and were further endowed and supported by the second Morrill, the Nelson, and subsequent acts. By these acts Congress sought to prevent in the future the serious shortage of the Civil War in officers and provided liberally in funds for this purpose, and yet, in spite of the earnest endeavors of the War Department, extending over a period of years, the purpose of Congress has been largely defeated, while at the same time its appropriations have been used. This is due to the failure of the acts to be specific in stating what shall be done and the failure to provide a penalty for the institutions not carrying out the purpose of the acts."

THE LOGIC OF THE SITUATION.

Out of all this, two facts stand out clearly. The first is that it is the obvious duty of the Government, instead of embarking upon new and expensive experiments, like the McKellar bill, to take hold of its present machinery and make it go; and the second is that it is obviously the duty of the land-grant colleges to wake up to this part of their obligation to the Government, and, besides removing all obstacles of their own making which stand in the way, to set themselves seriously to make some actual military output of a quality which the Government can recognize and use.

Neither the Government nor the colleges, operating separately or alone, can succeed in this matter. It is a matter for coöperation. We already have the organization for doing what is needed. No new one is needed. With a few simple changes, the whole system can be made to work successfully and economically, to the great saving of the Government in its quest for more officers, and to the much greater efficiency of the colleges.

Here are the things which ought to be done:

First. Pass an act defining a reasonable minimum of military instruction which every land-grant college would have to maintain. This minimum should include.

(a) Not less than two years of military drill for all students except those exempted for cause.

(b) Not less than three separate periods per week under military control, with not less than one hour per period.

(c) The discipline during military drill periods to be strict, with insubordination punishable by suspension from college.

(d) The instruction to comprise drill in manual of arms, squad, company, battalion and regimental drills, military ceremonies, target practice, skirmish drill, outpost duty, and not less than one week of camp per year, and class room instruction in tactics, and in the care of men and sanitation of camps.

Second. Pass an act requiring the frequent examination of the efficiency of this work by the War Department, with power not only to withdraw their officers from the institution failing to maintain proper standards, but also to enjoin further payments under the act of 1890 and the Nelson amendment, until the case of the college in question has been brought for adjudication before some authority designed by the President.

Third. Amend the act of 1893 which limits the number of army officers who may be detailed to educational institutions to one hundred, so as to make it possible to detail one active or retired officer under full pay and allowances for each four hundred students under military discipline.

Fourth. Pass an act requiring all land-grant colleges to which two or more officers are detailed, to provide a four-year course in military engineering, said course to include, beside the fundamentals of a good engineering education, four years of military drill, and instruction in such courses in advanced military subjects as the Secretary of War may prescribe.

Fifth. Pass an act permitting the Secretary of War to appoint all graduates to such military engineering courses as second lieutenants in the army for a period of one year following their graduation, with full pay and allowances, at the end of which time their appointment may become permanent, if vacancies exist, or they may go into civil life, retaining their commission as officers of the reserve.

Sixth. Encourage the respective States to pass laws, connecting cadet regiments in the land-grant colleges with the na-

tional guard of those States, in the same general relation that the United States Military Academy bears to the United States army, to the end that the military equipment now furnished to the national guard by the War Department may be available to the cadet regiments as well, and that the officers now detailed in the several States to inspect and instruct the militia may be available for similar purposes for the cadet regiments, and, also to the end that the students, who do not graduate in the proposed military engineering course but who take an interest in military affairs, may be more readily absorbed into and become a part of the militia of the States upon leaving college.

This sixth item is really of very great importance, for the reason that the army officers now detailed to the militia could, without any additional expense to the War Department, do a large part of the work proposed in the other parts of this scheme, and because the artillery, cavalry, signal corps, hospital and camp equipment now in the state arsenals could be made vastly more efficient and useful than it now is without in any way decreasing its value for the present purposes. In short, the War Department has now in the various states, officers and equipment enough to carry out the major part of the above plan without additional cost.

CONCLUSION.

The duty of the Land-Grant College Engineering Organization seems to me perfectly clear. It cannot by its own legislation bring any of these things to pass. It can appoint a committee on military education to study the whole subject and to find out how far their respective land-grant colleges would care to coöperate towards the attainment of these ends, and, after conference with the War Department, to prepare legislation for submission to Congress and to the several state legislatures.

The present is the psychological moment for this organization to act. The War Department is considering various plans to get more officers for a reserve and for active duty. Thus far none of them have been very productive. Congress is considering new and expensive legislation to create new military schools, duplicating what we already have. If we step forward now and show both the War Department and Congress

where they can save money and gain their ends more efficiently, and at the same time add greatly to the effectiveness of our own colleges, we shall have most richly justified our existence as an organization.

May I say in addition that the one thing that it seems to me is the most important in this whole discussion is the recommendation there that there shall be a specific military engineering course in the land-grant colleges, a course which will have a military outcome, just as we now have a civil engineering course and produce civil engineers, or a mechanical course and produce mechanical engineers. In view of the governmental expenditures at these colleges we are in duty bound to teach this subject. The fact that the War Department needs a body of men which we are not producing but can produce and which they are not getting from any other source, shows that we have thus an opportunity to be of incalculable benefit to the whole country. If our engineering schools will devise a simple course of military engineering we can yearly turn over to the Government a number of graduates; and the Government can, by making these men second lieutenants for a year, make it well worth the while of any young man to take such a course. He would secure a year's salary as an army officer. Even if he stayed but that one year, he would still be a trained soldier, available in time of war. At present the Morrill act is simply slightly upgrading the military intelligence in the population at large, and it is failing to produce a highly specialized product.

THE ACTING CHAIRMAN: We will now have the pleasure and honor of hearing from General Leonard Wood, Chief of Staff of the United States Army.

ADDRESS OF MAJOR GENERAL LEONARD WOOD, CHIEF
OF STAFF, UNITED STATES ARMY.

One of the most encouraging signs of our military situation is found in the paper which has been presented here today. It outlines what the Department is trying to do in the way of establishing more effective relations with the educational institutions maintaining courses in military instruction. It presents a most intelligent grasp of the situation with which

we are confronted. The Department is most anxious to give more assistance to the military departments of these land-grant colleges than has been given in the past. By assistance I mean assistance in the sense of getting in touch with these departments through the school section of the general staff and bringing about a better understanding and a fuller measure of cooperation. The main difficulty we have nowadays is to secure suitable officers for this college work, for officers, like other men, are not all fitted to teach; they are not all possessed of those peculiar qualities which attract young men and make a task sometimes uninteresting, interesting. In other words, there are many admirable officers who are not adapted to take hold of the work at institutions such as you gentlemen represent. You have outlined in this paper a plan for securing reserve officers which is on a line with one which I have presented from time to time during the past year. I believe the idea is a sound one, and one to which we can turn with the certainty of securing efficient officers for a reserve who will be available in time of war. It has always been my conviction that we must make a rational preparation for war. Our people do not seem to understand that wars are not emotional affairs that they are governed by great influences. Governments do not make wars, but are generally simply the instruments of the people in declaring war. Wars are really declared by the people and officially announced by the Government, and they are brought about by influences almost as uncontrollable as the seasons.

We all believe in the largest possible measure of arbitration, but we all know that there are some things, like citizenship and other matters which pertain strictly to us, which are not open to arbitration. Much as we wish to avoid war we shall inevitably be confronted with it in the future as we have been in the past. If we are called upon to mobilize a force to meet the early stages of war, with a first class power—and you must remember that we have never had such a war, or at least we have never fought such a war unaided—we should require a minimum of 600,000 men. That it is not a large number is apparent when one remembers that in the Civil War there were 2,600,000 men in the Northern armies and over 1,000,000 in

the Southern armies. In view of the length of our two coast lines, it is a very small number; and that is all we are trying to arrange for. Now the regular army and the militia under their present organization, together would not furnish more than 150,000 dependable troops, and we should have to raise about 450,000 men from the population. You hear much talk about our tremendous military sources—undeveloped resources in the term most commonly used—and used with a certain sense of satisfaction by those who understand nothing of what preparation means. Undeveloped military resources are just about as useful in time of war as an undeveloped gold mine in Alaska in a panic on Wall street. It is a valuable asset if you have time to develop it, but not otherwise, and it will not help you during the crisis. You have just seen a great war with the decisive battles fought in the first month. Wars are coming that way. Modern wars come quickly, and when they come upon us, whoever our antagonist may be, he will take advantage of the fact that we are never ready, and war will be made with more than usual promptness in order that we may not be able to assemble even such scanty organized and trained resources as we have.

How are we going to get officers for these 450,000 men? This is a serious question. It means at least 15,000 to 16,000 officers. Where are they coming from? Officers cannot be created over night. We had for a long time a reserve force of officers, men who fought in the Civil War. We had in the North probably two million men, most of whom had had military instruction, and many of them service in war. In the South there were probably a million who had had military service and experience. In this great mass of men there were many thousands of officers. For twenty years after the Civil War many of them were available and still of an age which rendered them fit for military service. They are no longer available, and our supply of officers must come from some other source. I believe we could, acting upon the joint recommendation of the president of the university and the officer of the army in charge of the military department, select each year from the five or six thousand graduates of colleges and schools having military instruction, five hundred young men who have taken the military

course creditably and appoint them, subject only to physical examination, as provisional second lieutenants in the different arms of the service—coast artillery, field artillery, infantry and cavalry—and pay them for that year the full pay of a second lieutenant, which, with allowances is worth from about \$2,200 to about \$2,400 a year. A young man who is fairly economical and careful ought to be able to leave the service with a minimum of \$800 at the end of the year. We should not require the more expensive uniforms but only the working outfit. This scheme would give us as reserve officers, young men who have had from two to four years in a military school under the direction of an army officer, and one year in the regular establishment. They would be better trained reserve officers than are most of those in foreign armies. It would be an economical and easy way of securing officers and would tend to popularize military instruction in these colleges and schools.

The War Department itself has been rather inert until recently in the matter of military education. This inertness was due to the fact that up to the time of the Spanish-American War we were dealing with a police situation—the Indian situation. We had a small and highly efficient army we encouraged reenlistments, we forgot all about the emergencies that would arise in the case of a war with a first-class foreign power, and drifted on without thought of the military situation that confronts this country and will confront it in case of such a war. Lately, the general staff has been considering the question of reserve men and of officers. We shall eventually solve the difficulty. We must have behind the regular army an adequate reserve and behind the militia a strong reserve, because we cannot develop the men quickly—nothing less than three months at least—and war will come very quickly when it comes upon us. The very fact that we are unready will be an inducement for suddenness.

We are trying to encourage a reserve idea in our militia and for the regular army, and I think we will be successful. If this Association will push forward the recommendations made in this paper, it will find the War Department in a receptive mood, and anxious to coöperate wherever possible. Once we can plant in the minds of the people sound ideas of military

efficiency and a true idea of our military history—which few possess—we shall begin to get an intelligent response.

The doctrine we are preaching to the people is the maximum number of men instructed to be soldiers with the minimum interference with their economic careers; that is, the maximum number of men who have had training enough to make them reasonably efficient soldiers, under conditions which will return them to civil life with the minimum loss of time, and so instructed as to be available as soldiers when required. The economic value of military training is very great. Men thus trained are more effective in their work, more responsive, more respectful of authority, do things more promptly and do them exactly as they are told to do them, which makes them all around better working men. Almost without exception, the thinking men in the larger European countries are agreed that two year's service in their armies are a distinct gain to the Nation; that as a result a man when he comes out is a better workman, a better machine, more observant of instructions given him, and acts more promptly and efficiently, and that the time spent in undergoing military instruction is not time lost any more than that spent in instruction in a school or college. He is being trained for something, trained for systematic, concerted effort. He is a better citizen.

Then there is the humane side of preparation to be considered. If you were asked to put crews of untrained men into the life boats on our Atlantic coast, to handle them in case of necessity, you would object strenuously. You would say: "These men are untrained. It is criminal to put them into these boats. They do not know how to handle them, they do not know how to row." Yet we go on deliberately, as a people, and turn out thousands of youngsters under incompetent officers under conditions more serious than those of any local storm. We throw their lives away with brutal recklessness; too stupid to prepare, we waste wantonly.

We are preaching preparedness, not militarism. We want to get, and are getting, the cordial support of men like yourselves. I hope you will all get behind the recommendations made in this paper. On the part of the War Department I can assure you that the Secretary of War is deeply sympa-

thetic with what you are trying to do. We are trying to develop a sense of responsibility in the young men of this country, a sense of responsibility towards their military duty. We educate them to perform all sorts of civil duties, but do not give sufficient attention to their military duties.

We do not seek to make professional soldiers or jingoes, but we do want to plant in our people a sensible and sane idea of preparation, what it means, and what its value is; its value not only as tending to the improvement of our fighting force, but its value as a matter of humanity, because if we are well prepared, war will not be thrust upon us, and if it is thrust upon us, we will be able to make it short and carry it through with a minimum of loss, because our officers and men will know how to perform their duties efficiently.

ADDRESS OF CAPTAIN S. J. BAYARD SCHINDEL, WAR COLLEGE
DIVISION GENERAL STAFF, UNITED STATES ARMY.

Dean Orton has clearly indicated what the War Department is trying to do. Its action in any given case depends largely upon the report of the college inspection board. The land-grant college presidents know of what this board consists, what its duties are, and how its inspections are carried out. This year's inspection showed several things; that the work of the officers on detail at many colleges was indifferently regarded by the faculties, whereas at other colleges it met considerable encouragement; that frequently facilities were not afforded for carrying out field exercises, or for adequately preparing students for their duties as competent officers in time of war.

College military training is really divided into two parts; first, the ordinary drill, a mere mechanical proposition which inculcates discipline and concentration of effort and mind on the part of the soldier, but does not prepare him altogether for field duties; and, second, field training. In this latter line of work, *i. e.*, field training proper, the War Department is most interested. It must usually be conducted outside the ordinary limits of college grounds, on the roads, where plenty of varied ground is to be found and where the different formations can be explained.

In those schools where the facilities for field training exist, the battalion has been found to be up to a good standard in this respect. In other schools, where more time is put on ordinary drill and instruction, it is thought that the graduates are not up to the required standard. It is right here that Dean Orton has struck the key-note. Through the engineering department we expect to train a man so that he has an eye for ground, so that he can recognize the localities best calculated to teach the various duties of the infantry soldier. Through the engineering department the cadet is taught those subjects which are necessary for the building of the lines of communication, the arteries through which the food and other army supplies must flow. These subjects must be considered the real basis of military education so far as scientific attainments go; hence I consider his suggestions most pertinent.

The War Department, as General Wood has said, sympathizes with any effort on the part of the colleges to improve this work and to accord to the military department a status equal to that of other collegiate departments. In many colleges the engineering department feels, as does the military department, that it receives less encouragement than does the department of agriculture. This feeling is acute in some places. It is to be hoped that through coöperation with the War Department the work of the entire cadet force at each of the several colleges may be brought up to such a standard that the graduates of a land-grant college will possess the same attainments, so far as military training is concerned, as do the graduates of the best military schools. The War Department is sympathetic with the ideas broached by Dean Orton and seeks your coöperation in raising the standard of the work which is being done by collegiate military departments.

THE MINIMUM DISTANCE WHICH A CAVALRY DIVISION COULD BE ADVANTAGEOUSLY MOVED BY RAIL INSTEAD OF BY MARCHING.*

(a) *Division to move from Fort Leavenworth to Topeka,
distance sixty miles, single track railway.*

BY CAPTAIN E. L. KING, SECOND CAVALRY.

IN this problem it is assumed that there are ample terminal facilities at Topeka; that those at Fort Leavenworth and Leavenworth as are actually to be found at present; and that the supply of rolling stock is sufficient for the demands. These assumptions are rather forced but allowances for them are made later.

Most authorities agree that a single-track railway can handle about eighteen trains per day. This admits, however, of trains going in the opposite direction, so that allowances must be made for delays at sidings. In discussing this problem I assume that the tracks are cleared and that twenty-five trains a day may be run.

Passenger trains are usually made up of from ten to sixteen cars per train, an average of twelve cars per train is assumed; freight trains are made up usually of from sixteen to thirty cars per train, an average of twenty-five cars per train will be taken.

In this problem it is believed that it will be safe to allow a speed of twenty-five miles per hour for all trains.

*Staff Class problem at the Army Service Schools, 1914. These two discussions of this subject were found in the Staff Class study rooms after the hurried graduation of the classes, owing to the recent threatened outbreak of war. They were but rough drafts of the reports to be submitted and it is understood that they had not been discussed in conference and a final combined report agreed upon.—Editor.

Paragraph 240 of the Field Service Regulations gives as a maximum per train the following, the organization being at war strength:

Two troops of cavalry, or

One battery of artillery, or

One company of engineers with bridge train.

It is assumed that a signal corps company will require the same accommodations as a company of engineers.

For the transportation of a cavalry division there will be required, therefore, the following:

For Division Headquarters—five cars, to be attached to another train.

For nine regiments of cavalry—twenty-seven squadrons, fifty-four trains.

For one regiment of artillery—six batteries—six trains.

For one battalion of engineers—three companies—three trains.

For signal corps troops—two companies—two trains.

It is believed that the estimate of six trains for the artillery is conservative as these are horse batteries. The engineers are mounted and have a light bridge train. The above includes the estimate for transportation for men, animals and field transportation.

It is also assumed that the wagons are placed on flat cars loaded. This requires more cars, but, under the conditions imposed, it is believed to be justifiable. To load the wagons and haul supplies to the station; then to unload and knock down the wagons and to load on the trains; and then to reverse the operation at Topeka would require a great deal of valuable time.

For the supply and sanitary transportation, it is assumed that the flat cars are thirty-six feet long and that four escort wagons can be loaded on one flat car. Ordinary horse cars will carry from eighteen to twenty horses, say nineteen horses per car.

For the supply and sanitary transportation there will be required:

For two ambulance companies and two field hospitals—twenty-four ambulances and forty-eight wagons—a total of fifty-two wagons—thirteen cars.

For ammunition train—three wagon companies—a total of eighty-one wagons—twenty-one cars.

For supply train—three wagon companies—eighty-one wagons—twenty-one cars.

For animals of ambulance companies and field hospital—284 animals—fifteen cars.

For animals of ammunition train—357 animals—19 cars.

For animals of supply train—357 animals—19 cars.

For animals of two pack trains—130 animals—7 cars.

For animals of quartermaster corps—93 animals—5 cars.

For wagons of quartermaster corps—17 wagons—5 cars.

The above figures would be reduced slightly by adding all together but as the units should be shipped intact, it is believed that this method gives a more nearly correct result.

From the above it will be seen that there will be required for transporting the troops 65 trains; for transporting the supply trains 125 cars—flat and horse.

For the personnel of the supply units there will be required the following, assuming that sixty men be assigned to a passenger car:

Forty-three officers and 539 men—a total of 582 passengers—10 cars.

This gives a total of 135 cars for the supply units, or six trains, and a grand total of seventy-one trains for the entire division.

Under the assumption made that twenty-five trains can be run each day, it will be seen that it will require three days to transport the cavalry division from Fort Leavenworth to Topeka.

The above assumptions make no allowance for the time required for loading or unloading and also assumes that there are perfect terminal facilities at both places. It is further assumed that the troops work for twenty-four hours each day. While it may be assumed that perfect or nearly perfect terminal facilities exist at Topeka, it is well known that such is not the case at Fort Leavenworth. It would be necessary to build ramps for the wagons and horses and everything would have to move like clock-work in order to keep the trains moving on

schedule time. Actually, it is probable that the time should be increased by fifty per cent.

On the other hand, a Cavalry Division should be able to make the march to Topeka in three days and arrive in shape for immediate service. The distance could be covered in forty-eight hours by assuming that the start is made at noon on one day and arriving at noon on the second day, actually three marching days but requiring only forty-eight hours. This time could be reduced by making a forced march.

The conclusion, therefore, is that the Cavalry Division should be able to arrive at Topeka in forty-eight hours after receiving the order for the march and be in good shape for work on arrival. If transported by train, it would require at least three days and many of the troops would arrive at night with the attending confusion and it would probably take five or six days to move the entire division. Then, they would not be in as good condition as in the case of marching over-land.

(c) *Division to move from Fort Leavenworth to St. Louis—distance 250 miles—single track railway.*

By Captain W. C. BABCOCK, Thirteenth Cavalry.

A cavalry division can move from Fort Leavenworth to St. Louis, 250 miles, with an average daily march of 18 miles, in 14 days.

To move the division by rail, including supply, ammunition and pack trains, will require eighty-two trains. All the trains will include passenger coaches, stock cars, flat cars, baggage cars and box cars, except the train carrying pack animals which needs no flat cars. Trains will contain cars varying in numbers from thirteen to thirty-four. The latter number is for trains carrying two wagon companies of the supply and ammunition sections. These longer trains would be started last. There will be required 1,630 cars of the five types mentioned, and average per train of about 20 cars.

The composition of each train is shown in the table on the following page. It is assumed that a passenger day coach

Train load consists of	No. of Trains	TYPE OF CARS										TOTAL CARS PER TRAIN
		COACHES		STOCK		FLAT		BAGGAGE		BOX		
		Train	Total	Train	Total	Train	Total	Train	Total	Train	Total	
2 troops cav.....	27	4	108	10	270	2	54	1	27	1	27	18
2 troops cav. & Sq. Hqrs.....	27	4	108	11	297	2	54	1	27	1	27	19
Cav. Reg. Hqrs. & M. G. Co.....	9	3	27	11	99	2	18	1	9	1	9	18
1 btry. Arty.....	6	4	24	11	66	11	66	1	6	2	12	29
Art. Reg. Hqrs & 2 Bn. Hqrs.....	1	3	3	8	8	3	3	1	1	1	1	16
1 Eng. Co.....	2	2	4	7	14	2	4	1	2	1	2	13
1 Eng. Co. & Eng. Bn. Hqrs.....	1	3	3	8	8	3	3	1	1	1	1	16
Div. Hqrs. & 1 Sig. Co.....	1	3	3	10	10	6	6	1	1	1	1	21
1 Sig. Co. & Sig Bn. Hqrs.....	1	3	3	8	8	4	4	1	1	1	1	17
1 Amb. Co.....	2	4	8	8	16	10	20	1	2	1	2	24
2 Field Hoop.....	1	5	5	10	10	11	11	1	1	1	1	28
2 Pack Trains and Q. M. Corps not elsewhere counted.....	1	2	2	11	11	6	6	1	1	1	1	21
2 wagon Cos. of Amn. & Supply Train.....	3	2	6	12	36	18	54	1	3	1	3	34
TOTALS.....	82		304		853		303		82		88	

Aggregate number of cars, all kinds, 1,630. Average cars per train, about 20. Sanitary personnel attached to Cavalry Artillery, Engineers and Signal troops, is proportionally distributed among the respective trains and is allowed for in above table.

carries fifty passengers, three men to each two seats, and two men over; a stock car, twenty animals; a flat car, three wagons or two guns or caissons. The box cars are for forage for the trip, or for one day. Baggage cars carry horse equipments, team harness, pack rigging, etc.

If, during the troop movement, the regular passenger and freight traffic of the railroad is suspended, assuming an average running time of twenty miles per hour (including routine stops for water, changing engines, etc.), twelve and one half hours will be required for one train to reach St. Louis, and, with careful train dispatching, the troop trains could follow one another at fifteen minute intervals, provided the loading could be accomplished sufficiently rapidly. The trains would then follow one another at a distance of about one block of five miles.

Except in extreme emergency, however, the regular passenger and freight trains will run as usual and, therefore, either north bound regular trains or south bound troop trains must side track, depending on which kind of traffic has the right of way. It would be possible, with the help of the current time card of the railroad, to determine the stations at which each troop train would have to side-track for passenger traffic and how long it would have to remain on the several sidings before the road ahead was clear. This would be a long task and would be of no permanent value because of the frequent change in regular time schedules. Then again, freight trains, I understand, are not run on a precise schedule, so that, for this reason also, the computation would have little value.

We can assume that, on the average, the troop trains will have to pass fifteen north bound passenger and freight trains, and that each time the troop train is side-tracked means an average wait of fifteen minutes. These assumptions may be a little excessive, but they are on the side of safe conclusions. Such delays will add three and three-fourths hours to the running time and require a sixteen and one-fourth hour trip.

Even if the facilities at the starting point were such that any desired expedition in loading were possible, it would be unwise, on a single track road, to start the trains at intervals of only fifteen minutes. This is about the time necessary to

cover the usual five-mile block at a twenty-mile rate, so that it is easily possible that there might be two south bound troop trains on the same block at the same time. This in itself is not particularly objectionable; but if, at the same time, a north bound passenger or freight were approaching the block, there might be confusion and delay unless the sidings were long enough to accommodate two troop trains at once. It would be better, therefore, to start the trains at intervals of not less than thirty minutes, or the running time for two five-mile blocks.

Five trains of ordinary length, say of twenty cars each, can, according to the local railroad agent, be loaded at the same time on the various sidings at Fort Leavenworth. If each train made up in its proper running order of cars, could be loaded with men, animals, vehicles, forage, etc., all on the same siding, the dispatch of trains could be rapid, only allowing for the proper safety interval between trains. At examination of the existing sidings, however, shows that in many places the ordinary portable ramps for animals and vehicles, would not suffice and that such could be loaded only at certain favorable places. The personnel can entrain practically anywhere, except on a trestle, but the stock cars, flat cars and box cars must have comparatively level ground adjoining, that is, they cannot be loaded satisfactorily in a cut or on a fill. Hence the different kinds of cars in any one train must be loaded on different sidings and afterwards be made up into a complete train by switch engines. This is unfortunate and tends to create confusion and mistakes, but with organization and supervision extraordinary delay can be avoided. I do not think that a battery train, for example, containing twenty-nine cars could be loaded as a train, without the switching of cars. Loading facilities such as platforms, portable ramps, etc., both for animals and vehicles, can be constructed in a short time, say over-night, so that the only delay is that required for the actual entraining and the switching.

The accumulation of so large a number of cars will take, according to the local agent, some three or four days. It is a fair assumption that one-quarter of the total cars required can arrive each day. The Fort Leavenworth sidings, however, are not of sufficient extent to accommodate 400 cars at one time,

one-quarter of the 1,600 total required; especially is this so when the stock, flat and box cars must be in positions favorable for loading. Examination shows that the favorable positions are limited in extent. Whatever the capacity of the sidings under these conditions, it follows that, in view of the single track main line, more empty cars cannot be run on to the sidings until the lot already there are loaded and dispatched. To bring in a new lot of empties from Leavenworth city or from other near-by sidings and to distribute them, according to kind of car, to the proper loading siding, will require much time. Of course any loaded train remaining at Fort Leavenworth could not be dispatched while the empties are coming in. This necessitates a considerable interval between groups of trains during which interval not even loading can be in progress, since there are no cars at hand to be loaded.

I do not know how much time to allow for switching loaded cars together into a train, nor how long a time is needed to bring up and distribute a new supply of empties. The loading and switching at night, the shifting of ramps, and many other details that only one more experienced than I in railroad work can foresee, will further tend to increase the interval between dispatch of trains. On this point I think the off-hand statements of the local railroad agent cannot be relied upon. I believe that the dispatch of fifteen trains in twenty-four hours, with the existing sidings and switch arrangements, is all that can be safely expected. At that rate the average interval between trains will be a little over one and one-half hours, or ninety-six minutes.

Assuming that entraining continues without interruption, day and night, then five days and nine and one-half hours must elapse between the departure of the first and the last train. Adding two hours for the loading of the first train (two troops of cavalry), sixteen and one-fourth hours for the trip of the last train, and one and one-half hours for unloading the last train (supply sections) gives a total of $149\frac{1}{4}$ hours, or six days, five hours from the beginning of loading to the complete unloading of the division at St. Louis. This is so far within the estimated marching time of 14 days that, even with 100 per cent. increase

of delay in departure of trains, it will still be quicker to transport the division by rail than to march.

The estimate of six days and five hours, clearly depends more on the assumed time interval between trains than on any other one consideration; it follows that the travel time of any train is a small fraction of the total time and that, roughly, the rail trip is as long in hours as the march trip is in days. Also for varying rail distances, the running time is the only time variable.

Since for marches of not over one week's duration the daily march can be increased in length slightly without harm, it follows that distances of from 120 to 150 miles can be covered by a cavalry division about equally rapidly by rail or by marching; that distances over 150 miles can be more quickly covered by rail; and that distances under 120 miles can be more quickly covered by marching.

THE USE OF CAVALRY.

BY MAJOR N. F. McCLURE, FIFTH CAVALRY.

BULLETIN No. 18, War Department, October 3, 1912, was published to the army with a view to systematizing and coordinating cavalry instruction in our service.

The principles laid down in paragraphs 1 and 2 are as follows:

"1. Mounted action is the main rôle of the cavalry arm and its organization, armament, and instruction should be with a view to rendering it effective in such action.

"Dismounted action is, however, a very important rôle of the cavalry, and neither an organization nor the method of instruction which fails to provide for the effective use of cavalry dismounted will enable it to perform fully its function in war.

"2. The organization should be such as to permit of the greatest mobility, which is the essential quality of the cavalry, while providing units of great smashing power in the charge and a sufficient number of rifles to make effective its use when required as a dismounted force."

We thus see from Paragraph 1, that mounted action is the main rôle of cavalry. This does not mean on the battlefield, exclusively, but also in various other ways which will be noted as we come to them.

This requires good, well trained horses, ridden by active, well trained men. It goes without saying that these men must be good riders. They must be armed with both the saber and rifle (or carbine) and they should also be armed with large caliber revolver or pistol. Our board of cavalry equipment favors also the bayonet and the entrenching tool. These, in my opinion, add too much weight to make it advisable to carry them. The few times which we would be called upon to use them would hardly compensate for the extra weight. The

pistol at close quarters, dismounted, should account for two or three adversaries, and if the enemy outnumbers us more than two to one and gets that close, the bayonet will not stop him.

Some entrenching tools are carried by cavalry in the combat and field trains. On account of its mobility, cavalry would often be able to requisition and collect tools from the inhabitants. In these days of steam and gasoline plows, to say nothing of other farming implements and road-making machinery, it ought not to be difficult to collect in a reasonable time implements for such work.

Where the portable tools would be missed would be in the case where cavalry attacking dismounted would have to halt under fire to await reinforcement or until some other part of the line was ready to advance. In this case it would probably be impracticable to carry along the improvised tools on the firing line.

The question of using cavalry on the battlefield in shock action mounted is one that has been of late years much discussed, and some of our cavalry officers are advocating a reorganization of our regiments into smaller ones, in the belief that such action will facilitate the use of cavalry in shock action. I believe that this is a mistake. Our present organization, in my opinion, is the best that we have ever had. It can be adapted handily to any method of action that our cavalry will be called upon to perform in campaign, except the charge in two or more ranks. By the addition of two or three pages to our drill book we can provide a method for the latter training and still retain all the excellent features of our present organization.

Undoubtedly we should be trained in both single and double rank.

By my remarks above, I do not mean to intimate that our drill regulations should not be revised. They should be, and this should result, if well done, in shortening them by 150 to 175 pages. These regulations have not been revised in reality since 1902.

Now as to mounted action on the infantry field of battle. In future, the opportunities for this use of cavalry will be few indeed. We must be trained and prepared to do it when necessary as a sacrifice to gain time, etc., but the cases in which we

will be successful will be rare unless there are specially favorable and unusual conditions favoring such a course.

Against other cavalry, however, we shall often have to resort to the mounted charge, and this is why we must be trained for it, and why, also, we must be armed with the saber. This weapon weighs but little and is not difficult to carry attached to the saddle. Many of our cavalymen have advocated discarding the saber and using the pistol or revolver in the mounted shock action.

Partisans, whose men were excellent pistol shots, have achieved some success with that weapon alone. Many examples of this can be cited from the history of our Civil War.

Our regular cavalry must have the saber as well as the revolver. The moral effect of the former weapon is so great that cavalry, having it, can easily gain the ascendancy over hostile cavalry not having it, other things being equal.

Seldom in future will we see regular cavalry made up of expert revolver or pistol shots, and such only would have a chance against cavalry armed with both weapons. In this discussion I have not mentioned the lance. Its use is contrary to the genius of our people and it does not now seem probable that our cavalry will ever be armed with it. I do not doubt but that it is a fine charging weapon where mounted masses are used in the attack, but it certainly is an awful inconvenience at all other times, particularly in reconnaissance work.

These disadvantages make it an unsuitable weapon for American cavalry.

The dismounted action of cavalry will be touched upon under the head of Paragraph 8 of the Bulletin.

Some of our cavalry officers consider that our cavalry regiment is too large.

The three principal arguments which they bring to support this view are: 1, That one man cannot handle so large a body of men by voice or trumpet; 2, that the regiment is too large as a unit for divisional cavalry; 3, that it is not suited in size for use in mounted shock action.

In my opinion not one of these objections is well founded.

I saw my entire regiment drilled and exercised a great many days at Schofield Barracks. There was nothing developed

there to show that there was or would be in future any trouble in handling a regiment of from 1,000 to 1,150 mounted men. It is true that we never had over 600 men at drill but it was easy to see that twice this number could have been handled without difficulty.

Our present organization seemed to meet every requirement of the drill ground, the march and the field exercise. In my opinion, it is well adapted to every use in campaign, except the charge in double rank, and, as I said before, this can be provided for without changing our present excellent system of instruction and organization.

If thought too large for divisional cavalry, our flexible organization would admit of assigning one regiment (less one squadron) to the Infantry Division. The two odd squadrons from such an assignment could be organized into a provisional regiment and assigned to a third division. That is, two regiments of cavalry could furnish the cavalry (divisional) for three Infantry Divisions.

Personally, I do not consider one regiment too large for this duty. I can give my reasons for this if any one desires them but the principal ones are that with our system, or lack of system, in repalcing losses, one regiment, a month after the campaign opened, would be down to 800 to 900 men, not an excessive number and that the Division Commander would have at least one troop for his escort and for provost guard duty:

"3. Cavalry must maneuver freely and widely without fearing too much for its rear; and being often at a distance from the main body of an army, its commander must be clothed with authority to conform to actual conditions."

This probably refers more particularly to large bodies of cavalry.

The same rules apply also to smaller bodies. They must not worry too much about their line of retreat. If they once become separated from the Infantry commands to which attached, their commanders must exercise a wide discretion, but such officers must never forget their missions and must do their utmost to regain connection with the main force, to which they are attached, so as to resume their proper duties of screening and reconnoitering.

"4. While the chief task of the cavalry is to assist the other arms in accomplishing the common object, its rôle is often of primary importance. The action of cavalry must be bold and daring; it must, whenever practicable, assume the initiative, seeking out the enemy and placing him upon the defensive."

These important requirements, will be discussed more fully under Paragraph 8. What is said of cavalry being bold and daring is true. Cavalry which remains upon the defensive rarely ever accomplishes anything. The same is true of cavalry which does not habitually take the initiative.

Many examples may be cited from the lives of Sheridan, Wilson, Stuart and Forrest to show the success that habitually attends the bold and daring leader.

"5. The principal weapon of cavalry in mounted action is the horse and the force of impact should be utilized to the utmost. The terrain and nature of the operations will determine which of the other weapons must be used."

In mounted shock action the horse is the most important factor. The formula, $\frac{MV^2}{2}$ illustrates this. M is the mass, V the velocity. Hence medium sized horses which can reach a charging gait of eighteen to twenty miles per hour, at moment of impact, will have greater shock action than heavy horses moving from fourteen to sixteen miles per hour.

In all other respects, the medium sized horse is superior for cavalry use to the heavy horse. He eats less, is easier to mount, is more active, is less tiring on the rider, stands work on poor roads or in rough country better, and can attain a greater speed.

Of course there are individual exceptions to this rule, but in the main it is correct.

The terrain and circumstances, in each case, must determine whether the pistol or the saber will be used in mounted action. If attacking in masses, the saber will usually be the proper weapon while for encounters with hostile patrols, attacks on convoys and other partisan work the pistol would first be used in most cases, to be followed later, if necessary, by the saber in the mêlée. Seldom, indeed, will it be proper to use the rifle (or carbine) in mounted action.

See paragraph 408, Cavalry Drill Regulations.

"6. When circumstances permit, cavalry opposed to cavalry should fight mounted, thus retaining the mobility and power of maneuver necessary to its security and success."

The reasons for these rules are almost obvious. As soon as a cavalry force dismounts to fight on foot, it becomes immobile or nearly so. If it is equal or superior to the enemy, it should maneuver for the advantage of position and attack him mounted. Even if inferior, it may, by a bold attack, gain the advantage and, by enterprise and skill, maintain same. If hopelessly inferior, it had better resort to the defensive, using natural obstacles, such as villages, rough country, mountain passes or river lines. If these fail it, then it must fall back to the protection of its infantry, to escape annihilation.

But this does not mean, however, that it should remain supine or inactive. Even when forced to take a defensive rôle, patrols of selected men sent out under bold leaders, will be able to gain locations by stealth or by boldness, or by both, from which they can obtain important information; and these specially fitted men will often get this information back to the army, too.

By skillful maneuvering, the commander of an inferior force of independent cavalry may stay in the field and accomplish much towards keeping the enemy under observation and preventing him from gaining information. Many factors govern in such cases, among which are taking advantage of natural features, moving at night, boldness, knowledge of roads, use of guides and a well-trained personnel.

"7. The historical value of cavalry, including the experience and evolution of our own and that of other countries, must be carefully studied, and due consideration should be given to the greater magnitude of our future cavalry operations as compared with our experiences since the Civil War."

This is a plea and an order to keep up the instruction of the cavalry arm on the lines of making use of large bodies in future wars.

The ordering of a large proportion of our cavalry to the Southwest was partly because the War Department had decided to get enough regiments in that part of the country to admit of large bodies of cavalry being assembled from time to time for instruction and training.

In working out plans for this, we should be governed largely by the use made of cavalry in our Civil War.

By studying how such men as Sheridan, Wilson, Stoneman and Kilpatrick employed cavalry on the Union side, and Stuart, Forrest, Wheeler and Morgan on the Confederate side, we have a vast fund of information on this subject, second in importance to that of no other nation in the world. In using this data, we must, of course, consider the changes that have occurred since 1865. General Wilson has just given us his experience in a work of two volumes. It is entitled "Under the Old Flag." This should prove to be an excellent work from which much data may be obtained. Major Gray's book on "Use of Cavalry in the Civil War," is also excellent.

Biographies of all the leaders, mentioned above, also exist, and the Rebellion Records are filled with the deeds of our cavalry all of which are not, however, to the credit of the cavalry. But when a leader has made a mistake we can learn from it as much or more as when he has been successful.

General von Bernhardt believes in the teachings of our Civil War. (See von Bernhardt's Cavalry in War and Peace, pages 5 and 367 on Civil War.)

"8. The use to which cavalry should be put in campaign is summarized as follows:

- (a) To seek and destroy the enemy's cavalry.
- (b) Screening, contact, and reconnaissance.
- (c) Seizing and holding important advanced or isolated positions, thus delaying the advance of the enemy until the arrival of the other arms.
- (d) To operate on the flank and in the rear of the enemy.
- (e) Raids and other enterprises requiring great mobility.
- (f) The mounted charge at the opportune moment against Infantry or Field Artillery.
- (g) Energetic pursuit of a retreating enemy or covering retreat of its own forces.
- (h) When none of the above rôles has been assigned to it, cavalry may go to the assistance (dismounted) of hard pressed infantry to fill gaps in the firing line."

Taking these in order we see that (a) is to destroy the enemy's cavalry and (b) to screen, gain contact and gain information.

These are closely related to one another for the best way to carry out the three requirements of (b) is to seek out and destroy the hostile cavalry as required by (a).

At the same time, we render the enemy's cavalry timid and impotent, and incidentally protect our flanks, rear, and line of communications. These considerations account largely for the modern principle advocated in handling cavalry; of keeping the greater part of your cavalry concentrated or the units within supporting distance of each other, until the hostile cavalry has been defeated.

Observe that concentration in this case does not necessarily mean that all the cavalry is in one place or marching on one road. In large bodies, the columns may be bivouacked some distance apart or, if marching, there may be two or more columns on parallel roads, within supporting distance of each other. But even if beaten by the enemy, the cavalry must still endeavor, primarily by stealth and later by boldness and taking chances, to accomplish what the enemy by force has prevented it from doing.

A situation can scarcely be conceived where cavalry should throw up the sponge and quit. Rather let its commander be like Forrest at Fort Donelson, who forded a supposedly unfordable stream in the night rather than to surrender. The most desperate situation will not daunt such a leader. If you cannot do what you want to do, then do the next best thing but never say die.

Defeat alone cannot excuse subsequent inaction. Screening, contact and reconnaissance naturally merge into each other. By the first, cavalry prevents the enemy from gaining information; by the second and third he keeps the enemy constantly under observation and thus limits the zone of active patrolling. If properly performed, every movement of the enemy is soon known and a large part of the theater of operations requires but little surveillance, since we know exactly what part is occupied by his troops.

In all these rules, the usual method is to keep from two-thirds to three-fourths of the cavalry concentrated, using the remainder to patrol and keep contact. This is kept up until the hostile cavalry is defeated decisively. Then the command may be divided if circumstances seem to require it.

Before the enemy is whipped, however, the command moves on one or more central roads and sends out the smaller fractions, divided into reconnoitering troops or squadrons as the particular case may require. Each of these reconnoitering units usually has a road assigned to it and along this it sends out patrols in advance. If on the flanks, it sends patrols also to the flanks and even to the rear of the hostile troops.

If the mission requires the main body to remain in some central position, then the reconnoitering squadrons move forward and hold some natural line, such as a mountain range or river. This is called the defensive screen. If the enemy's cavalry shows up anywhere in force, the main body moves to the support of its reconnoitering units, in that particular locality, and attempts to defeat the same. It then becomes offensive. These reconnoitering units on the various roads, prevent, or greatly limit, hostile reconnaissance toward our own army.

In the contact work, a similar system is followed, the advance patrols of the contact units, constantly feeling the enemy, the main body being held together to gain the mastery at the critical time and place. In all these cases, if the enemy advances on the main road he is attacked and driven back. If he advances on a parallel road on either flank, then the main body moves in that direction and strikes him in flank.

In the reconnaissance work we force back the hostile patrols and endeavor to gain information in our front, but in addition to this, other patrols, many of which are under officers, are sent to the flanks and even to the hostile rear to gain information.

On these lines, von Alten has divided patrols into three general classes.

1. Strategic reconnoitering patrols. These go to great distances and fight only when necessary to escape.

2. Tactical reconnoitering patrols. These endeavor to find out the enemy's dispositions in the front. They do not as a rule fight, though often compelled to.

3. Covering patrols. These are to prevent hostile reconnaissance of our own forces. These patrols are usually not far from their supports and their duty is to fight where necessary to drive off hostile patrols.

Classes one and two grade into each other as do also classes two and three.

The question of the influence of aeroplanes and other aircraft on the usefulness of cavalry has been much discussed. Many of the best writers hold that there is an ample field for both and that one will often succeed where the other fails. The cavalry can be used in so many ways that, in my opinion, it would certainly be a great mistake to try to get along without any cavalry.

Field telegraph, telephones and wireless are also useful adjuncts. The information having been obtained, it then becomes a question of getting it back.

The signal companies must help us in this and it is believed that they will find practical means of doing so in our next campaigns. The experiments of using wireless with cavalry have not as yet proved entirely successful. If it can be so perfected, as to be relied upon, then will it indeed be valuable. In getting back information, motor-cyclists will often be valuable in future. These are confined to the roads, it is true, but much horseflesh can be saved in rear of the advanced lines by using cyclists. The Germans have even organized cyclist infantry companies, which they expect to use in interrupting railroads, seizing important points and supporting cavalry far to the front.

I advocate attaching to each cavalry regiment twenty-four cyclist (motor), six to each squadron and six to regimental headquarters for use in messenger service.

Referring to the screening work of cavalry, one of the best examples of this is the screening of Jackson's column at Chancellorsville when he marched, without being discovered, from the Union center, along the front, at a distance of only two or three miles from the Union lines and finally attacked the Union right and rear, taking the 11th Corps entirely by surprise and doubling it up. In this march of ten miles, made by 20,000 men, Stuart's cavalry closed every road by which the Union

cavalry could gain information of the movement. No more brilliant example of screening work has been accomplished in modern war.

"c. Seizing and holding important advanced or isolated positions, thus delaying the advance of the enemy, until the arrival of other arms."

This use of cavalry is one of the most important.

On account of its mobility, it can be hurried to important points such as depots, favorable positions, threatened points, mountain passes, river lines, etc., to hold the same until the infantry arrives to relieve it. The training of our own cavalry well fits it for this use, because we devote much attention to rifle fire, in our system.

Machine guns and horse artillery add much to cavalry's power in this class of work. Many excellent examples of this use of cavalry can be taken from the annals of our Civil War. Buford's cavalry, on the morning of July 1, 1863, delayed Hill's advance, northwest of Gettysburg, until Reynold's corps came up to relieve it. It then took post on Reynold's left and supported him in the battle which ensued. This action of Buford's, allowed the Federals to secure ultimately the advantageous position south of Gettysburg and was, therefore, one of the main factors in the Federal victory achieved there.

The second incident which I shall cite is the use of the Confederate cavalry when Lee moved his army from the Wilderness to Spotsylvania C. H. In this maneuver General Grant had the start, and seemed certain of throwing his army between Lee's army and Richmond. But Hampton's cavalry division protected the left flank of the marching Confederates at Corbin's Bridge, and the brigades of Fitz Hugh Lee and Rosser seized the advantageous ground lying north and northwest of Spotsylvania C. H. and held on until relieved by Kershaw's division of Anderson's corps. This enabled Lee to place his army between the Federal army and Richmond again. Thus General Grant lost one of the two chances which he had to gain a decisive advantage and the war was prolonged for nine or ten months.

"d. To operate on the flanks and rear of the enemy."

This use of cavalry is a very effective one. Not only is much information gained but also the enemy is caused much uneasiness and opportunities often occur to do serious damage such as to destroy his trains, delay reinforcements, seize a defile or bridge by which he desires to retreat, etc.,

When the enemy is defeated, then the cavalry, by constantly harassing his flanks and rear in pursuit, completes his demoralization. In this work, the cavalry should be strengthened by the addition of artillery unless already strong in horse artillery.

To (d) above, it might have been added "To protect our own flanks and rear." This also is one of the important uses of cavalry. During the battle it must watch the flanks of its own forces and, if the enemy is strong in cavalry, the rear also. In defeat, it must check the pursuit and even sacrifice itself, if necessary, in order to allow the main force to retire and recover from its demoralization.

"e. Raids and other enterprise requiring great mobility."

This use of cavalry has been a matter for dispute among modern writers. Some authorities, including Captain Steele, maintain that raids are of doubtful utility and that in order to have a chance to succeed they must be made in friendly country, temporarily or permanently occupied by the enemy's forces.

If the time of making the raid is well chosen, the force is organized with a special view to mobility, and a definite objective is selected, I see no reason why the chances do not favor success. The force sent must be strong enough to accomplish the desired end and the commander must be specially fitted for such work. If the raid does happen to be made in a friendly country, temporarily occupied by the enemy, so much the better.

The following successful raids by Union cavalry forces during the Civil War may be mentioned: Sheridan's Richmond Raid; Sheridan's Trevillian Raid; Grierson's Raid in rear of Vicksburg, and Wilson's Raid to Selma, Alabama, 1865. Morgan's Raid in 1862 made Bragg's campaign into Kentucky possible by destroying the tunnel at Gallatin, Tennessee. Mitschenko's Raid against Yinkow failed. Causes: Lack of mobility; time not well chosen.

The opponents of raiding say that, in the Union raids above cited, exceptional circumstances were responsible for success (Give reasons—Grierson to new base below Port Hudson; Sheridan to new base on James; Wilson connected with Sherman's forces in North and South Carolina. Also in Wilson's case the war was practically over.)

General von Bernhardt, the celebrated writer and cavalry leader, is a firm believer in raids. He says that in future war armies will be so large that their supply will be difficult. Any interference with their communications will be a serious matter and he believes that if raiding parties can cut these lines it will result in large forces being sent back to reopen and protect them.

"f. The mounted charge, at the opportune moment, against infantry or field artillery."

The mounted charge against artillery on the march, or going into action, or limbering up, or changing position, or even in action has good chances of success.

My views on the subject of the mounted charge against infantry in position have already been given above.

When infantry is in a poor position or in retreat, or has been badly shaken, or greatly demoralized, or composed of raw troops, there is a chance for success; but in all other cases the mounted attack on infantry must be considered as a desperate undertaking, to be resorted to in extreme emergencies only.

"g. Energetic pursuit of a retreating enemy or in covering the retreat of our own forces."

Under the heading "d" I have already partially discussed this use of cavalry. The duties "d" and "g" merge into each other. If our cavalry does what is expected of it in the pursuit when our main forces have gained the decision, and in the retreat when they have lost it, then it will have certainly justified its existence. Its action in the pursuit will often be decisive and result in the capture of the hostile army.

Thus Sheridan at Five Forks stopped Lee's retreat, and Wilson, after Nashville, caused the practical disbandment of about half of Hood's army. In the latter case, the cavalry fought dismounted and then took up the pursuit mounted.

In that same battle of Nashville, Forrest, who was absent during the battle, returned in time to cover the retreat and save the remnants of Hood's army. This is a fine example of the use of cavalry in the retreat. Another one is where General Stuart covered the retreat of the Confederate army from Gettysburg, July 5-15, 1863.

In these rôles, artillery and machine guns add much to the power of cavalry.

"h. When none of the above rôles are assigned to it, cavalry may go to the assistance (dismounted) of hard pressed infantry to fill gaps in the firing line."

This requires that the personnel be well trained in rifle firing and also in dismounted work.

This training should take place on the same general lines as is that for our infantry, with such modifications as are necessary in order to care for the horses.

Cavalry should be able to put 60 per cent of its force on the firing line and still have 20 per cent. left as a mounted reserve to protect the horses, drive off the enemy's cavalry, and keep up mounted reconnaissance.

In exceptional cases, where the conditions are especially favorable, it can put from 85 to 90 per cent. on the firing line.

One of the most important uses of cavalry is not mentioned, in Bulletin, No. 18. This is as an escort to artillery. This use generally immobilizes the cavalry or at least confines its action but there are cases where it has to be resorted to.

Often batteries must be hurried forward to critical points beyond the infantry lines or to a flank. If infantry were used in these cases, the artillery would often arrive too late. In battle, too, situations occur where every infantryman is needed in the attack and the cavalry can be used to replace it as a guard for such artillery as needs special protection.

In conclusion, I desire to call your attention to the versatility of cavalry. When properly instructed, not only can it screen, reconnoiter, keep contact, seize distant important points, prevent hostile reconnaissance, cut hostile lines of communication and protect those of its own army, cut loose from its own communications, guard the artillery, guard its own convoys or attack those of the enemy, fight with the saber and

pistol mounted and with the pistol and rifle dismounted, operate on the flanks and rear of the enemy in the pursuit and protect the flanks and rear of its own army in the retreat, fight the hostile cavalry mounted or dismounted, and in exceptional case charge even the hostile infantry mounted; but also at times it can take the place of its own infantry either on the firing line or as a mobile reserve which can be moved rapidly to any desired point, there to be used as infantry or otherwise as circumstances may require. These qualifications would seem to effectively answer the arguments of those who advocate doing away with cavalry in future and depending on aeroplane for information.

Also these qualifications would seem to almost justify the boast that well trained cavalry can fight anywhere except at sea.



CAPTAIN CHARLES CORBIT'S CHARGE AT WESTMINSTER.*

AN EPISODE OF THE GETTYSBURG CAMPAIGN,

BY JAMES H. WILSON, LATE MAJOR GENERAL U. S. VOLUNTEERS.

I.

IT is now generally admitted that General Lee after deciding upon the invasion of Pennsylvania in July, 1863, committed a serious strategic mistake in permitting his cavalry commander, the celebrated General J. E. B. Stuart, to cut loose from the army with his three best brigades under Hampton, Fitzhugh Lee and Chambliss. This made a strong column of about 6,000 sabers. Robertson, Jones, Jenkins, and Imboden with possibly 6,000 more were kept with Lee's main army; Robertson covering the rear south of the Potomac for several days, while Jenkins and Imboden were covering the advance through the Cumberland valley into Pennsylvania.

The Federal cavalry of three divisions, under Pleasanton, had engaged Stuart with his entire force before he divided it, between Brandy Station and Kelly's Ford. The fighting was conducted with great enthusiasm but some lack of system on both sides, and while it resulted in a drawn battle, it greatly encouraged the Federal cavalry. Several writers claim that "it made the Cavalry Corps," Army of the Poto-

*Reprinted from "Papers of the Historical Society of Delaware—LXII."

mac. Be this as it may, it is certain that on June 18, Pleasanton attacked Stuart's entire force again at Middleburg, driving it back through Upperville to Ashby's Gap. This spirited operation cleared that region of the entire Confederate cavalry and should have taught its over-confident leader that he could not hope to stand against the entire Federal cavalry with half his own force, and yet in a few days he divided it as shown above, into two nearly equal parts. From that day forth, while it cannot be claimed that Pleasanton did the best possible service with his three divisions, it is certain that he handled them far better than Stuart did his. He had the shorter or interior lines and was always in closer contact with Meade's infantry, than Stuart was with Lee's.

It should never be forgotten that Buford's cavalry division passed rapidly to the front, and opened the battle of Gettysburg with great brilliancy and effect from Seminary Ridge, while Kilpatrick's division, after engaging Stuart as will hereafter be shown, passed rapidly across the line of march to the left of the Army of the Potomac, and with the gallant Farnsworth of the Eighth Illinois Cavalry, brought Longstreet's march by the right flank to a timely halt.

Gregg, the imperturbable, was always in his true place, on the right or rear of Meade's advanced line, ready to meet Stuart whenever he might make his appearance, with his three detached brigades of Confederate cavalry.

While there is no sort of doubt that Stuart had permission to cut loose from Lee, it is more than probable that he neither knew nor explained to Lee just what his own plan of operations would be. It is more than likely that neither had a clear understanding of what might take place for the simple reason that neither could possibly know in advance exactly what would be the movements of the Army of the Potomac or of its cavalry corps. They evidently underrated both the Federal infantry and cavalry, although it is certain that Lee in a general way intended that Stuart in his raid around the Union forces should delay and harass both as much as possible but that whatever less he might do after crossing the Potomac, he should not fail to get into touch with the right of the Confederate columns as they advanced into Pennsylvania. At all events this was

what Lee had the reasonable right to expect from his experienced cavalry commander. But certainly Lee with all his confidence in Stuart and all his contempt for Hooker could not have dreamed that Stuart would under any possible contingency of the campaign, remain absent and out of communication with him and his army for nearly a week.* While Lee's whole conduct of this campaign was far from faultless as his admirers have claimed it to have been, it is inconceivable that he should have deliberately intended or knowingly consented that Stuart's operations should have been conducted in the reckless and purposeless manner that characterized them throughout the campaign.

II.

Lee having defeated Hooker decisively at Chancellorsville, May 1-4, conceived the idea of assuming the offensive, routing the Army of the Potomac, possibly capturing Washington, and certainly, invading Pennsylvania. His hope was that this campaign would in any event result in breaking both the Baltimore and Ohio, and the Pennsylvania railroads, thus severing the direct lines of communication between Washington and the west. This accomplished, with or without another great victory, the Confederate authorities counted confidently on the recognition of the Confederacy by England and France, which in turn would raise the national blockade of the southern coast, and thus enable the Confederates to replenish their military stores, continue the war indefinitely, tire out the national government and finally "gain a triumphant peace." It was a great plan, but it called for the promptest execution and this as the following facts will show it did not get. The Confederate resources were unequal to the task both in generalship and in military supplies.

Lee after Chancellorsville rested nearly a month, beginning his new campaign on June 3d. With varying fortunes he maneuvered Hooker, between June 7th and June 15th, back to the neighborhood of Washington, where he dropped him, and then turned his columns into the Shenandoah valley,

*See Young's Battle of Gettysburg, Harper's, p. 134 et seq.

one corps crossing the Potomac at Shepherdstown and two at Williamsport, about 140 miles northwest of the national capital, June 23d-25th. He halted his advance at Chambersburg in the Cumberland valley June 27-28th, sending Ewell's corps towards Carlisle, Harrisburg and York.

Hooker, having correctly divined Lee's movement, crossed the Potomac at Edward's Ferry, 80 miles southeast of Williamsport, and directed his movements on Frederick, Maryland. Receiving here certain suggestions from Washington which he regarded as limiting his independence, on June 28th, he asked to be relieved, which was apparently what the Washington authorities wanted for they accepted it the same day and named General Meade as his successor.

This fortunate change was followed without the loss of an hour by a forward movement on converging and interior lines, between Lee with his infantry and Stuart with his cavalry, towards Gettysburg, where the principal roads of the region seemed to concentrate.

The government by its fortifications at Washington, by a call of Pennsylvania and New York militia, and by the concentration of the Eighth Army Corps under General Schenck had provided efficiently for the defense of Washington, Baltimore, and the railroads connecting them with Harrisburg and Philadelphia. It necessarily from the start gave special attention to the operations of the Army of the Potomac, upon which so much depended.

Meanwhile, Lee having discovered through his scouts, Meade's assignment and the prompt advance of the Army of the Potomac, made all possible haste to gather in his scattered detachments and to concentrate his army at Cashtown in the eastern foothills of the South Mountain range, less than a day's march from Gettysburg.

III.

This was the critical situation in the closing days of June and the opening days of July, 1863. Lee was in the centre of southeastern Pennsylvania with an army of 65,600 infantry

*The Story of the Civil War, by Colonel Livermore, Putnam's Part II, pp. 418, 414.

and 248 guns; 10,000 cavalry and 50 guns—total 75,600 men and 298 guns.

Meade opposed him with seven corps of infantry and one of cavalry, 82,200 infantry, 13,900 cavalry—total 96,100 men and 357 guns.

Both sides have put up their utmost strength. Every loyal state had done its best, and most of them were fully represented in every army corps, and in all branches of the service. The eyes of the nation were on them all. Delaware was represented by her First Infantry under Colonel Thomas A. Smyth, and her Second Infantry under Colonel William Bailey, both of which were in the fighting Second Corps at the very vortex of the battle near the Bloody Angle.

The state had early in the war endeavored to organize the First Delaware Cavalry for three years, but had been only partly successful. Seven troops, or companies, nominally under Colonel Fisher, had been raised and mustered into the U. S. service, but they were afterwards consolidated into four. Of these two troops, "C" and "D" under Captain Charles Corbit and Lieutenant Caleb Churchman, respectively, took the field, under Major Napoleon B. Knight, as ordered by General Schenck. In a campaign where every man counted and every hour was of the utmost importance the part played by any single organization, great or small, may have exerted a vital influence, especially if it caused confusion or delay in any detached or important division of the enemy's forces.*

As it will be shown further on the spirited action of Captain Corbit and his squadron of 130 men at Westminster, on June 29th, constituted an episode of this sort, which deserves a more conspicuous place in the annals of the State and of the United States than has as yet been assigned to it. This will be better understood when the character and the services of Captain Corbit have been as fully set forth as the recollections and reports of his contemporaries will permit.

*By reference to the appendix it will be seen that Delaware furnished to the United States in the War for the Union, a grand total of 9,128 officers and enlisted men.

NOTE:—The Appendix has been omitted as not being of general interest to our readers.—Editor.

Charles Corbit was at the outbreak of the war between the States in the full maturity of his young manhood. He was in his twenty-fifth year, nearly six feet tall, strong, vigorous, broad shouldered, long armed and deep chested. He was in every way an ideal volunteer soldier. His earlier ancestors came to England with William the Conqueror, and his later ones to Pennsylvania with William Penn. They were from the first serious, self-respecting people, connected by marriage with the best families in England, Pennsylvania and Delaware. Although in later generations they were Quakers, they were never afraid to risk life, fortune and liberty in the cause of human right.

But the modesty of that sect as well as its hatred of battle and war has always had a controlling influence in keeping them silent on their own performances in that line.

In the ante war days it was customary for the leading men of Delaware, especially the rich farmers, professional men and yeomanry to take an interest in the militia. Two troops of cavalry or dragoons were organized and maintained for several years in New Castle, county. The first was commanded by Captain John W. Andrews, afterwards Colonel of the First Delaware Infantry. The second was organized by Charles Corbit and William Henry Reybold sometime before the war, from the neighborhood farmers in the lower part of the county. It afterwards formed the nucleus of Troop "C," First Delaware Cavalry. So, it may be properly said that the little State, then the smallest in the Union in both population and wealth, was in a measure fairly prepared to meet any emergency demand that might be made upon it in behalf of the general government. Slavery had but a small hold within it, and while a few of its public men were more or less in sympathy with this as an inherited institution, none of them took an active part in or gave serious thought to an effort to carry the State into actual rebellion. The most they strove for at any times seems to have been to see that all national measures against secession were taken in strict accord with the requirements of the Constitution of the United States, in regard to the organization and maintainance of armies for the suppression of insurrection.

As a matter of fact, Delaware, like the rest of the border states, was firmly opposed to the war and did what she could to prevent it, but when it actually broke out her Union men made haste to respond to the President's calls, in turn, first for three months' men, then for three years' men, and finally for one year, nine months, three months, and thirty day men.

The Southern sympathizers remained mostly at home. Captain Andrews took the leading part in organizing the First Delaware Infantry and became its Lieutenant Colonel, under Colonel Lockwood, an old West Pointer, then a professor at the Naval Academy and long absent from the State. On its reorganization for three years, Andrews became its Colonel, vice Lockwood promoted.

Having attended a military school with Meade and Kearney before they went to West Point, Andrew's regiment soon became famous as one of the best in the volunteer army for drill, discipline and efficiency. It was followed (as a three months' regiment) by the Second Delaware Infantry under Colonel William P. Bailey, the Third, under Colonel William O. Redden, the Fourth under Colonel A. H. Grimshaw. There were besides Nields' battery of light artillery and Ahl's battery of heavy artillery, all for three years. It also organized two regiments of nine months' men and mobilized its militia whenever called upon to do so. Altogether from first to last it put under arms for the Union, 9,128 officers and men. This for a State with but a single congressional district, and a population of 112,216, of which 21,627 were colored and only 90,589 were white was doing well. As over half of these were females, it leaves about 45,000 white males of all ages. From these figures it will be seen that the State sent one man out of every five white males in the State to fight for the Union. It is believed that no heavier percentage was contributed by any congressional district in the north.

Shortly after answering the first call for three years' men Delaware began the organization of the First Delaware Cavalry under George P. Fisher, who was to be its Colonel. He offered the Lieutenant Colonelcy to the writer, but this was declined, principally because the War Department would not permit the detachment of regular engineer officers for less than a

Colonelcy of Volunteers. The undertaking, however, overtaxed her resources and although she did her best she succeeded in getting into service only seven companies, which were finally consolidated into four under the nominal command of Major Napoleon B. Knight.

What follows has principally to do with Company "C," under Captain Charles Corbit, three officers and eighty-two men, and Company "D," under First Lieutenant Caleb Churchman, one officer and forty-three men or a total of four officers, and one hundred and thirty enlisted men. In the campaign of Gettysburg they were nominally under Major Knight with Lieutenant William W. Lobdell, Acting Adjutant, but in the sharp affair at Westminster in which they took such a creditable part, they were actually commanded by Captain Charles Corbit till he was captured.

IV.

From the earliest days of the war the Delaware Infantry, especially the first and second regiments, took a prominent part in the operations of the Union forces in Virginia. They both finally became attached to the Second Army Corps, with which they served most creditably to the end.

But the cavalry organization languished from the start, and it was not till the Gettysburg campaign that it got an opportunity to distinguish itself in action against the enemy. It formed a part of the Eighth Army Corps under Major General Schenck, who was charged with the defense of the railroads from Philadelphia to Washington with headquarters at Baltimore. His forces were not only heterogeneous, but scattered all the way from Harper's Ferry to Wilmington. They amounted to nearly 50,000 men of all arms, present and absent about one-half of whom were actually with the colors. But instead of being massed in front of Baltimore, the principal city of the region, they were scattered under the "pepper box strategy" of Halleck, then commander-in-chief, into detachments nowhere strong enough to take a vigorous offensive or to effectually support Meade's veterans of the Army of the Potomac as they advanced to attack Lee's invading columns. The simple fact is that both the Washington government and the

people of the neighboring States were more or less surprised by the turn the war had taken, and were far from ready to act with coherence or vigor. Their main dependence was upon the Army of the Potomac, which had not yet recovered from the depressing effect of the disastrous and disgraceful defeat of Chancellorsville. It was, however, a coherent, aggressive well organized and well officered army, free from the pernicious idea of defending particular places or limited areas, and was above all ready and willing to follow and fight the enemy wherever he might be found. In doing this, under the gallant and patriotic Meade, who acted from the first minute after assuming actual command on the morning of June 28th, with admirable promptitude, vigor and certainty, it had the defensive coöperation of Schenck with the Eighth Army Corps from the South, and of Couch with the Militia of Pennsylvania and New York, from the North and East. But, strange as it may seem, the most aggressive and effective help it received in the actual campaign, from the outside was from Captain Corbit and his handful of Delaware cavalry, in the spirited affair at Westminster on the 29th of June.

In order that this may be properly understood, it should be remembered that the theater in which the opposing armies were operating was a quadrilateral of, say sixty by eighty miles limited on the south by the Baltimore and Ohio Railroad, from Baltimore to the west, on the east by the Northern Central, from Baltimore to Harrisburg, on the north by the Pennsylvania from Philadelphia to the west and on the west by the parallel ranges of the Blue Ridge between which Lee was marching with his invading army.

Westminster was at that time a small country town in Maryland near the line between Maryland and Pennsylvania at the western end of the Western Maryland, then serving as a branch to the Northern Central Railway. This branch projected into the quadrilateral nearly half way to Gettysburg. Westminster at its outer end was connected by good roads with both Washington and Baltimore and these with the branch railroad, caused it to be made a field depot of supplies or a secondary base for the Army of the Potomac. It lies nearly forty-five miles due north of Washington, about twenty-five miles

northwest of Baltimore and something like thirty miles from Gettysburg, all as the crow flies. If fifteen per cent. be added to these figures for road curvature it will give a close approximation the actual distances.

After Stuart with his three brigades crossed the Potomac, his route lay through Rockville, Brookville, Cookeville, Hood's Mill and Warfield to Westminster. On the way he captured a few wagon trains and their guards which served more to embarrass and delay him than to give him any substantial advantage. He skirmished at Rockville with Colonel Lowell's Second Massachusetts Cavalry, covering Washington, but none of these minor operations did any material injury to Meade's army or caused it the slightest delay, and but little anxiety.

Westminster was, however, the nearest railway terminus to his general line of march, and as it had direct railway connection with Baltimore and roundabout connection with Washington, it was of sufficient importance to cause Schenck to put it under the guardianship of the Delaware cavalry, and Meade to direct the Sixth Corps not only to march through it, but to take it under temporary charge.

As Buford's cavalry division was to cover Meade's advance, while Gregg's and Kilpatrick's were marching parallel with and covering his right or eastern flank, it is evident that Stuart's route lay through dangerous country, but there is nothing in his report to show that he had any adequate appreciation of the perils that beset him. From all accounts, especially his own, it is evident that the most he had in his mind was to pass through Westminster on his northward march to Hanover, York and Carlisle, and possibly to Harrisburg, in search of Lee's army, from which he had been separated for nearly a week. It is entirely clear that neither Stuart knew where Lee was, nor Lee where Stuart was. It is just as clear that both Meade's infantry and cavalry were between Lee and his cavalry, and that neither Lee nor Stuart knew the exact movements or plans of the other.

It was under these conditions that Stuart's advance, marching northward on the Washington-Westminster road reached the vicinity of Westminster, June 29th, between 4:00 and 5:00 P. M. Fortunately Major Knight with one troop and a

half or "ninety five men," as he states it, had reached the town from Baltimore on the 28th at 11:00 A. M., and after sending out scouts on all the roads without discovering any trace of the enemy, went into camp in the suburbs, on the road to Gettysburg about thirty miles away. That evening at 9:00 o'clock it was reported that the enemy had made his appearance at the outposts, but it turned out to be a false alarm. On the 29th, the pickets still reporting all quiet at the outposts, Knight gave orders to the squadron commander to have his barefooted horses reshod. Meanwhile he went himself, it is said, to the local tavern where he was refreshing himself, when at 3:30 a citizen came in and reported the enemy "as approaching in force on the Washington road," the pickets having been captured. This news came as a surprise, which it can be well understood, was followed by a few minutes of excitement, but not much uncertainty. The gallant Corbit, with the true instinct of a soldier, sounded "to horse," without a moment's delay, and followed this in turn by the formation of his little squadron, reduced by outposts "to about seventy" men, every one of whom promptly found his proper place in ranks. Taking the main street instantly in the direction of the alarm, Corbit passing the tavern en route, paused only long enough to report the presence of his command and to ask for orders. These came promptly enough from Major Knight, to move at once against the enemy, but for the reason that the Major himself had in the earlier days of the war been enrolled in the Confederate service, it is said he was afraid of being captured and thereupon failed to put in his appearance or to take the command that his rank and responsibility made obligatory upon him. Corbit, however, like the true soldier his ancestry and breeding made him, proved equal to the occasion. Taking the trot to the front, he and his gallant, but untried followers soon found themselves in sight of the hostile forces coming toward the town, and careless of whether it was a mere detachment or Stuart's whole division, of whose actual presence he was still entirely ignorant, he shouted "Draw sabres!" and dashing to the front, sounded the charge, throwing himself and his gallant followers furiously, head on against the astonished enemy.

The daring and the shock of this movement were not only surprising, but overwhelming to the enemy. It necessarily overthrew his head of column which it is said had already been massed at a turn of the road, and compelled it to recoil and to reform under cover of the oncoming reinforcements. Indeed there was nothing else for it to do, but old and experienced cavalymen, such as Stuart, Fitz Lee and Hampton, found this a simple operation requiring but a few minutes.

In the spirited *mélée* which resulted, the enemy soon checked Corbit, and by a pistol shot killed his horse while it was throwing up its head under pressure of the rein and thus fortunately covering its rider behind. Corbit necessarily went down with his charger, and was captured pistol in hand, while, standing astride of his dead horse.

His men put up the best fight they could but were soon scattered and about half of them were taken prisoners. The same fate overtook Lieutenant Churchman and his men, who covered the rear, while the remnant of the fighting force, preceded by Major Knight withdrew by the Baltimore road to Reistertown. Churchman was also captured, but Knight and Lobdell continued their retreat after the pursuit had ceased. Knight was the first to reach Schenck's headquarters at Baltimore. He was also the first and only officer to make an official report, and this report dated June 30th, General Schenck forwarded at once to Washington, where it duly found its way into "The Official Records" as published by the War Department years afterwards.*

While this report mentions favorably Lieutenant D. W. C. Clark "with an advanced guard of twelve men" from Company "C," and Lieutenant Reedy and "some seven or eight men" of the same company, rather unfavorably, it leaves the details of the whole affair somewhat uncertain. It characterizes Captain Corbit's conduct as "gallant and masterly," and praises the men as "fighting all the time with the greatest bravery and determination—contending hotly for every inch of ground." It praised Lieutenant Churchman and his company as protecting and covering the retreat in "splendid style, losing all but seven of

*Official Records, Serial Number 44 p. 201, et seq.

his men and falling himself into the hands of the enemy." Finally it mentions a small detachment of the First Connecticut Cavalry which they came across at Reistertown. Ordering it to assist Lieutenant Reedy in rallying the men of his own command, Knight proceeded into Baltimore in pursuance of an order he claimed to have received on the way, from the Department Commander. He gives his "casualties and losses" in the fight and retreat as "Two commissioned officers—Captain Charles Corbit and Lieutenant Caleb Churchman; the former of whom fell while gallantly charging the enemy, and is now a prisoner in their hands, and the latter was captured while covering the retreat of the main body."

He also lost "One wagon laden with hospital stores, camp and garrison equipage" and "the regimental books and papers."

How many men escaped capture he fails to tell, but judging from the somewhat uncertain strength of his command it is likely that between fifty and sixty men escaped finally, while Corbit and the men taken with him, were irregularly paroled and released by Stuart in person, the next day near Hanover, after an informal conference in which he cordially commended their gallantry and told them "they ought to be fighting for the Confederacy rather than against it."

In closing this report Major Knight calls special "Attention to the bravery and intrepidity of the officers and men whose efficiency and determination of purpose has saved us from utter annihilation."

This constitutes the whole story so far as the Union records give it, but how much of this rests upon Major Knight's personal observations, and how much of it on that of others, remains in doubt, which cannot be fully determined at this late date. It is certain that neither Corbit nor Churchman, Lobdell nor Clark made any written report, and although several of them were, as already stated, paroled and released the next day, their personal experiences and observations in the action afterwards, rest almost entirely upon tradition, which further reference will be made in the conclusion of this paper.

V.

Fortunately Stuart, submitted to Lee's Adjutant General, August 20, 1863, a full report* of all the operations of his cavalry division from June 16th to July 24th, of that year, and while this report is somewhat vainglorious in tone, it gives many interesting details. Referring as he says, to his desire "To acquaint the Commanding General with the nature of the enemy's movements as well as to place with his column my cavalry force," he adds "the head of the column following a ridge road reached Westminster about 5:00 P. M. At this place, our advance was obstinately disputed for a short time by a squadron of the First Delaware Cavalry, but what were not killed were either captured or saved themselves by a precipitate flight. In this brief engagement two officers of the Fourth Virginia Cavalry, Lieutenant Pierce Gibson and John W. Murray, were killed. Gallant and meritorious, they were noble sacrifices to the cause. The ladies of the place begged to be allowed to superintend their interment, and in accordance with their wishes the bodies of these young heroes were left in their charge."

It should here be noted that the original of this report contained an endorsement made by General Lee, directing that the preceding sentence should be omitted if the report should be published. It then proceeds as follows:

"The fugitives were pursued a long distance on the Baltimore road and I afterwards heard, created a great panic in that city, impressing the authorities with the belief that we were just at their heels."

But at this place the report grows somewhat confused.

"Here (evidently meaning Westminster and not the end of the pursuit) for the first time since leaving Rector's cross-roads (in Virginia) we obtained a full supply of forage, but the delay and difficulty of gathering it, kept many of the men up all night. Several flags and one piece of artillery without a carriage were captured here. The latter was spiked and left behind. We encamped for the night a few miles beyond the town, Fitz Lee's brigade in advance, halting the

*Official Records, Serial Number 44, pp. 687-700.

head at Union Mills midway between Westminster and Littlestown on the Gettysburg road. It was ascertained here that night by scouts that the enemy's cavalry had reached Littlestown during the night and encamped."

As the fight at Westminster took place about 5:00 o'clock in the afternoon, and the command began gathering forage at that place where "many of the men were kept up all night," it is difficult to see how the command could have been united in camp at Union Mills, five or six miles beyond Winchester. The probability is that it encamped in various fields on the roadside and was more or less spread out between the two places, with its advanced guard at Union Mills and its rear guard at Westminster. It is evident at all events that it was not moving rapidly but just how long it was actually delayed by the fight at or in the vicinity of Westminster or by the necessity for foraging, is a matter of conjecture, but several of the officers and many of the Delaware cavalymen, claim that Stuart lost at Westminster or near it from ten to twelve hours, or to be more precise from five or six o'clock when they halted that afternoon, till four or five o'clock the next morning when they resumed the march. Of course this was in the night and half of it at least was necessary for rest and sleep for both men and horses, though if they had pushed on till even nine or ten o'clock, fifteen to twenty miles more might have been easily covered before they went into bivouac.

Both Union Mills and Littlestown are on the direct road from Westminster to Gettysburg, and as Littlestown was found already occupied by the Federal cavalry, Stuart early next morning, June 30th, resumed his march by a cross-road, leading northeastwardly to Hanover. Fitz Lee's brigade marched farther to the left by an intermediate road. Stuart's rear guard, which had bivouacked in the edge of Westminster, was driven out by Gregg's advance at daylight. At 10 A. M. Stuart's head of column reached Hanover but found the place as well as the east and west road, occupied by a column of Federal cavalry moving to the west. This was doubtless Kilpatrick's division. A sharp fight ensued in which Stuart claims to have gained the advantage at first—but admits that his attacking

brigade was repulsed "and closely followed by the enemy's fresh troops."^{*}

As Gregg was in close pursuit through Westminster from the south, Stuart's position was clearly becoming one of increasing peril. Much heavy skirmishing took place, in which Colonel Paine, of the Fourth Virginia Cavalry, was captured by the Federals, and one of Kilpatrick's aids-de-camp was captured by the Confederates. But the significant fact is that Stuart lost another whole day in futile and inconclusive skirmishing, and found himself so pressed at night that he was compelled to turn again to the northeast through Jefferson to the neighborhood of York, about thirty miles east by north from Gettysburg. He admits that his prisoners and wagon trains together with a shortage of ammunition were now embarrassing him and supposing that Lee had already reached the Susquehanna, he contends that his eccentric movement, away from Lee's army rather than towards it, was the proper one for him to make. But the simple facts are again, that he did not know where Lee was, and that both Kilpatrick and Gregg now made it dangerous for him to take the direct road towards Lee's army.

A moment's inspection of a map of the theater of operations will show that the Federal cavalry held the shorter lines on Stuart, who, as has been seen, had been delayed materially by Captain Corbit's magnificent charge at Westminster, which in turn caused Stuart to reach Hanover too late to cross the road or to turn to the west on it towards Gettysburg, ahead of Kilpatrick's column marching from York to the west for the purpose of crossing Meade's front and taking his position on the left of Meade's army.

This was the fatal consequence of Lee's mistake in permitting Stuart's detachment to the south and eastward of Meade's army, and of Stuart's equally fatal mistake in permitting himself to be delayed in his march after once starting on it, first by Lowell at Rockville, second by Corbit at Westminster, third by the Union Pickets at Littlestown, fourth by Kilpatrick in front at Hanover and fifth by Gregg's pressing on his rear from Westminster. In other words he was wasting time in minor operations that could not possibly help Lee nor materially

^{*}Official Records, Serial Number 44, Stuart's report, p. 695.

injure Meade, instead of pushing on night and day till he had found and formed a junction with Lee's army.

But this was not the worst of it, for after wasting an entire day with Kilpatrick at Hanover, he again turned to the right with Fitz Lee in front and Hampton covering his rear. Marching all night to the northeast through Jefferson to the suburbs of York, into which Fitz Lee's battery "tossed a few shells," he pushed on with his main body to the northwest reaching Dover on the morning of July 1st. Failing to find Early's command, which had already passed westward in the direction of Shippensburg, he halted at Dover a few hours to rest and feed, and then took the road again for Carlisle some fifteen miles further to the northwest and thirty-six from York. Here he learned that Ewell had also withdrawn towards Gettysburg, notwithstanding which he wasted the whole of July 1st in "demonstrations," "burning the cavalry barracks," and in making demands "for the surrender of the place." In his report he declared:

"The whereabouts of our army was still a mystery, but during the night I received a dispatch from General Lee, in answer to the one sent by Major Venable from Dover on Early's trail, that the army was at Gettysburg and had been engaged on this day, July 1st, with the enemy's advance."

Stuart was at this time some thirty-six miles nearly due north from Gettysburg with his command badly strung out but through no merit of his own there was nothing left to prevent him from concentrating it on Lee's rear or left which was closest to his main column. Starting in person that night he reported to Lee on July 2d, at exactly what hour does not appear, but he says it "was just in time to thwart a movement of the enemy's cavalry by way of Hunterstown" on the direct road from Gettysburg to York. At just what hour this was it is also hard to determine, but it must have been well on towards sundown as he made his headquarters that night on the York and Heidlersburg road, some five miles northeast of Gettysburg.

It is conceded by all Confederate writers that Stuart did not know where Lee was till some time during the night of

July 1st-2d, at which time he was nearly thirty miles north or northeast of the main body of Lee's army.

To anyone who follows this narrative with attention it will be evident that from the time Stuart left Hanover about twelve miles east of Gettysburg on the night of June 30th, his march carried him farther and farther away from his true destination, till he reached Carlisle on the morning of July 2d. In other words, his initial delay at Westminster was followed by further loss of time of at least thirty-six hours, at the end of which he was still thirty miles from Lee and this distance it took him at least twelve hours more to cover.

During this period it should be noted that the whole of Meade's cavalry rejoined him on or near the field of battle, and in close supporting distance, ready to perform the parts assigned to them and especially to meet Stuart whenever he should make his appearance. This is made perfectly clear by Stuart's formal report from which I have quoted whenever necessary to support this narrative. But it is fair to add that Stuart in its concluding passages strives hard to show that his operations were everywhere successful, that he was fully justified in all his movements, and that Early on leaving York, should have taken measures to acquaint him with his destination, thus saving him, "the long and tedious march to Carlisle and thence back to Gettysburg."*

It should also be stated that Colonel Mosby, in his spirited work on "Stuart's Cavalry in the Gettysburg Campaign," contends that Stuart made no mistakes. He scarcely mentions Westminster, except as one of Meade's important sub-bases of supply. He does not allude to the affair at that place, but in a private letter to the writer, dated May 12, 1913, he claims without going into details that Corbit's charge at Westminster "did not delay Stuart's column one minute," nor in any way change Stuart's plan of operations.

All this, however, is effectively controverted by the simple fact that at daylight of July 1st, Stuart crossed the road on which Early and his division twelve hours before had marched towards Gettysburg. It is evident that if Stuart had followed him instead of keeping on his way northward towards Carlisle

*Official Records, Serial Number 44, p. 708, et seq.

he could have easily rejoined Lee by 2.00 p. m., of that momentous day, and coming in upon the broken right flank of Meade's army he might "have assured a victory for Lee that evening."*

VI.

Having given all the light afforded by the Official Records on the effective charge of the Delaware Cavalry at Westminister and its probable consequences both direct and indirect, it is now in order to collate the newspaper references and traditions in regard to that affair and to point out so far as possible their relations to the established facts of the case.

It is settled beyond a doubt that Corbit acted mainly on his own responsibility with the greatest personal intrepidity, and that in the mêlée which followed the little band, of less than one hundred officers and men who followed him, behaved with extraordinary spirit till overwhelmed and captured or driven from the field by the leading troops of Stuart's column. That this conclusion was inevitable when the relative numbers engaged are considered can be admitted without the slightest reflection on the officers or men of the Union side, and it is not strange that no one at the time foresaw the great consequences which might follow such an unexpected and relatively insignificant affair.

Adjutant William W. Lobdell, under date of June 27, 1913, in reply to a letter of inquiry from the writer, enclosed a clipping from *The New York Sun*, and also a letter dated August 14, 1912, from O. V. Anderson, formerly first sergeant of Company "K," Fourth Virginia Cavalry. The latter writes that he and several of his comrades had recently spent the night together discussing their former campaigns, and with the aid of several letters from former companions and from the clerk of the court at Westminister, agreed substantially as follows: Our advanced guard on the Baltimore pike "got to Westminister about 4 p. m.," and became engaged with your command at once. Our company led the charge into Westminister supported by the balance of the Fourth Virginia. A regiment was dismounted to the right of the road, and one to

*"Battle of Gettysburg," Jesse Bowman Young, Harper's, p. 134, et seq.

the left, but we had broken your command before "these dismounted men got into the engagement," which "took place (from) 5 to 6 p. m.," and "lasted only a few minutes but they were hot ones."

"Your command fought like Turks, killing a goodly number of our best men, (but strange to say) our company, which was in front lost none. Companies "C" and "D", which came to our relief, lost several good officers and some men. After the fight they halted to feed their horses and draw rations, and then started on a night march towards Carlisle."

Commenting on this letter, Captain Lobdell says:

"My recollection as to the time the fight occurred does not agree with Mr. Anderson's. (I should say) it occurred between one and two o'clock of the afternoon. The troops we engaged were the advance of Stuart's cavalry, who were charging down the main street of Westminster, which at that time was a continuation of the Baltimore pike. How many there were I have no means of knowing, but there were several platoons of them, who as our boys with Captain Corbit in command came charging down upon them turned tail and ran as fast as they could to the main body of the Confederate troops—coming up the Washington road, which was at right angles with the Baltimore pike. Our troop which (had been) sent out as a scout-party consisted of Company "C," under Captain Corbit, and part of Company "D," under Lieutenant Churchman. They were under (the battalion commander) Major Knight, but as he was taken sick at the hotel the day of the fight, the actual command devolved upon Corbit, who was then the ranking captain. I was just behind Captain Corbit when his horse—a fine black charger—was killed under him (by a shot through the head) undoubtedly saving his life as the shot would otherwise have hit him in the breast.

"Our boys were crowded out of the Washington pike by an overwhelming force, some escaping . . . and some being taken prisoners, among whom were Captain Corbit and Lieutenant Churchman.

"I was forced into a barnyard . . . at the intersection of the Baltimore and Washington pikes, and by running and jumping, my horse being part thoroughbred . . .

I escaped down the Baltimore pike and finally reached Reisterstown from which station I was sent to Baltimore that night with a report of the engagement to General Schenck."

On the death of Captain Corbit, which occurred at his country place, "*Brookfield*," December 29, 1887, a local correspondent sent, December 31st, a letter to *The New York Sun* from which the following extracts are taken:

"The late Captain Charles Corbit was buried at Odessa this afternoon. He was the man who perhaps changed the results of the battle of Gettysburg by delaying General Jeb Stuart's cavalry twenty-four hours at Westminster, Maryland, thus preventing him getting to Lee in time to be of service."

The foregoing statement, it should be observed, is not directly supported by the official reports hitherto referred to, but it is a reasonable inference more or less certainly supported by the facts as related herein.

The letter continues:

"Charles Corbit in June, 1863, was only twenty-five years of age. He was captain of Company "C," which was (at first) employed to guard the telegraph line through this peninsula. Their duty was to keep open communications by wire between Fortress Monroe and the north and (as yet) they had never smelt gunpowder. On June 28th, Corbit's company and a part of Company "D" in charge of Lieutenant Caleb Churchman were ordered to Westminster about thirty miles southeast of Gettysburg, as an advanced guard of observation. There were ninety-five men and seven officers in the little party . . . commanded by Major Napoleon B. Knight. Small squads . . . were sent out to look for the enemy, who were then marching into Pennsylvania. They found nothing and Knight made himself at home at the Westminster Hotel, leaving Captain Corbit in command of the camp.

"The night of the 28th and the forenoon of the 29th were passed in quiet. In the afternoon at about 3:30 while about thirty of the horses were being shod at a smithy nearby, word came in that the rebels had appeared. Adjutant Lobdell, now vice-president of the Lobdell Car Wheel Company, . . . was at the hotel. At the first alarm he mounted and started

for the camp a quarter of a mile away. As he did so he met Corbit and sixty men coming down the road on a fast gallop.

"They stopped at the hotel for orders but Major Knight was too sick to issue any. The Delaware boys were on the Baltimore road, and along the Washington Road * * * at right angles and crossing it a depression in the ground, came Stuart's cavalry. As they rode down to the Baltimore road and turned north they saw the Delaware Cavalry dashing towards them down hill. Quickly turning their horses they retreated up the Washington road.

"As line after line turned in the road, on either side of which was a stout fence they became blocked. The rebel retreat was thus stopped and (at this instant) the sixty Delaware boys dashed with sabers drawn madly into the mass of men and horses. The rebels were cornered and decided to make fight, supposing the whole force of Union cavalry had attacked them.

"The Fourth Virginia Cavalry was ahead said to have been 250 strong, and they dashed towards the Delaware boys with a wild shout. Corbit, who was nearly six feet in height, rose in saddle with uplifted saber and yelled: 'Come on, boys, close up!' As he did so he reined his horse's head high in the air just in time for the animal to receive a ball between the eyes, intended for the master's breast. The charger sank down dead and before his men could close around him the rebels were upon him.

"Then followed a desperate hand to hand struggle with sabers and pistols. The rebel thousands came steadily over the hill and by sheer force of numbers pressed the handful of Delawareans back inch by inch. The road was about eighty feet wide and sixty Delawareans were jammed in.

"Stuart rapidly deployed his men around the town and unlimbered his artillery so as to command the scene of the contest. In a short time, however, the attacking party was surrounded and nearly all of them captured. A few got away * * * among them Adjutant Lobdell, who had been fighting behind Corbit. Sergeant Clark not only escaped but captured a fine black horse belonging to a rebel. His brother, Lieutenant Clark, escaped with a hole through his

hat and a saber wound in his arm. Those who got away met (that evening) at Reistertown, and when the roll was called on the morning of June 30th, twenty-eight men and four officers reported out of one hundred and two. Two had been killed, ten wounded and the rest taken prisoners.

"The Delaware men had no idea what they were doing when they made their wild dash. Stuart afterwards complimented them on their pluck * * *

"Captain Corbit was paroled at Hanover (the next day) but was afterwards ordered by the government to report for duty and served with the Sixth Corps in Grant's final campaign."

It is said, however, that he 'always felt he had broken his word of honor by returning to the field before his parole had been released' * * *

"One of the survivors" of the affair at Westminster, "was asked today if Corbit fought well? 'Did he fight, well?' was the reply. 'Why damn it, he was the fight!'"

Who was the author of this letter is not known, but it embodies practically all that has ever been claimed for Corbit and his followers, including the direct and roundabout delay which Stuart was then and later forced to make, in order to form a belated junction with Lee and his army.

Other newspapers took most favorable notice of Captain Corbit's gallant feat of arms at Westminster, and of the dismounted service of himself and men with the Sixth Corps, during Grants' campaigns of 1864 and 1865. In appreciation of this loyal service against his own sense of duty the Democratic Governor, Gove Saulsbury, of Delaware, offered him the commission of Lieutenant Colonel, but he declined the honor.

"Feeling that if he accepted the promotion it would be a tacit admission that he regarded the action of the government in ordering the disregard of his parole, as right and that his own views of the matter were wrong. It has been well said that it was this rare and delicate sense of honor which stood out most prominently in Corbit and endeared him to those who knew him intimately. It was this high quality that brought him the unquestioned respect of his neighbors and

comrades, and made him 'the ideal soldier' which by common consent, both loyal and disloyal men conceded him to have been."

Finally, it must be admitted by all conscientious investigators, that had it not been for the considerable delay which necessarily followed Captain Corbit's gallant fight at Westminster, whether that delay was two or twelve hours, Stuart could easily have reached Hanover less than thirty miles to the northward, before the Federal cavalry could have barred the road to the west from that point. This accomplished he could have passed on through Hunterstown, to a junction with Lee in a single day's march instead of taking three days, and thus giving effective support to Lee, as Buford, Kilpatrick and Gregg gave theirs to Meade, from the hour the first gun was fired at Gettysburg till the battle was ended.

The important factor of this campaign is that Stuart's detachment was an inexcusable mistake from the start, and grew from bad to worse till it ended in his defeat by Gregg, on Lee's extreme left July 3, 1863, simultaneously with Meade's defeat of Pickett's charge against his left-center at the "Bloody Angle."

The responsibility for this mistake must be evenly divided in history between Lee, the Confederate Generalissimo, and Stuart, his over-confident chief cavalry commander.

MAXIMS AND OPINIONS OF NAPOLEON ON THE USE OF CAVALRY.*

In war, every cavalry general commanding a cavalry division, should every day and several times a day, depending upon circumstances, forward a report of the movements of the enemy and of the position of the division.

*Extract from the Maxims and Opinions of Napoleon. Compiled and classified by Lieut. Colonel Ernest Picard. Berger-Levrault, publishers. Translated from *The Revue de Cavalerie*, January, 1914, in the Department of Languages, Army Service Schools, by A. Moreno, First Lieut. 28th Infantry.

I do not believe, moreover, that it (the cavalry) is very useful. When one has so little of it, it serves no particular purpose.

Recommend equally, that regiments which are within reach of water, train their horses in crossing rivers; that all regiments of dragoons have dismounted drills, even though they have no guns, and that half a hundred muskets be distributed to them, for the purpose of starting their instruction.

He (General Sebastiani) should remind the Hussars that a French soldier should be a cavalryman, infantryman and artilleryman; that he is there for the purpose of doing anything.

I desire, Citizen Minister, that you consider the cuirassier, dragoons and hussars as forming three different arms, and that you never submit to me the names of officers from these troops, to be transferred from one arm to another.

I had forbidden any transfer from one corps to another. Nevertheless, I hear that transfers of men from cuirassiers to dragoons are being made. This seems to me to be bad and to have all sorts of inconveniences.

* * * These reconnaissances (of cavalry) will leave before daybreak; two regiments will be required to make two leagues, one of these two more leagues, another league by one escadron of this regiment, and another league by a detachment of the best mounted men from this escadron.

* * * It is necessary that a cavalry general always follow up the enemy vigorously, especially in retreats; * * * I do not wish that horses be spared, when they can carry men.

It is in the heavy cavalry, where should exist, to the highest degree, the science of the mounted man.

* * * The policing (provost work) of large towns is done by the cavalry; also the watching of the coasts.

The chausseurs should also know (as well as the dragoons), how to maneuver dismounted.

I regret to see that light cavalry and dragoons are being confused; there are two entirely different arms. A regiment

of dragoons, thus isolated, can do nothing; four or five regiments together, 2,000 strong, who can maneuver perfectly dismounted, will be very useful to you.

One cannot recommend too strongly, taking (to war) five year old horses.

It appears that what is to be feared most from the Prussians is their cavalry; but, with the infantry you have and holding yourself always in readiness to form squares, you have little to fear.

* * * It is right here that the cavalry is needed, in the midst of the immense plains of Poland.

I am within the boundaries of Poland, it is with cavalry that war is carried on in this country.

The lack of cavalry had prevented Marshal Bernadotte from taking advantage of his success.

Cuirassiers must be large; but height is of no importance for hussars and chausers; on the contrary, it is harmful. One result of having men of large stature, is the necessity of large horses, which doubles the expense and does not render the same service.

* * * Cuirassiers are more useful than any other cavalry.

Marches and battles destroy a great number of horses.

* * * In armies of observation (Lauriston in 1809), one can place a detachment of infantry with a large body of cavalry; but only on the supposition that the enemy is not carrying on regular operations, that one is trying to locate him and finally that this infantry can stop the enemy's cavalry, peasants or several companies of hostile chasseurs. As a general rule, in open country, the cavalry must be alone, because alone, unless it be a question of a bridge, defile or a given position, it will be able to withdraw before the hostile infantry can arrive.

It is necessary * * * that the light cavalry break itself of the habit of getting scattered in small bodies, but instead carry on effective reconnaissance in force; this is the means of preventing its being captured and of itself obtaining information.

The breast plate is a weapon; like the sword, it should never be captured except with the officer who wears it.

The number of horses killed in different battles is very large. Generally, in battles, I have constantly, for each cavalryman killed or wounded, lost three to four horses.

* * * In a regiment of cavalry, a man on foot does no good.

It is recognized that the cavalry armed with a cuirass can, with difficulty, make use of its carbine; but it is also very absurd that 3,000 or 4,000 such brave men, be surprised in their cantonments, or stopped on the march by two companies of light infantrymen. It is, then indispensable to arm them * * * As to the lancers, see if it is possible to give them a carbine besides their lance; if this is not possible, one third, at least, of the company should be armed with carbines.

Under no consideration, shall cuirassiers be detailed as orderlies. This duty shall be done by lancers; even generals shall use lancers. The service of communication, escort, sharpshooters, shall be done by lancers. When cuirassiers charge infantry columns, the light horses should be placed in the rear or on the flanks, in order to pass through the intervals between the regiments and to fall upon the infantry when it is routed; or in case of a cavalry regiment, upon the cavalry, pursuing it vigorously.

* * * As a general principle, a colonel of chasseurs or of hussars who, instead of bivouacking at night, and keeping in constant communication with his grand guards, goes to sleep, deserves death.

It is well that Generals Sebastiani and Lafour-Maubourg receive, as often as possible, orders directly from you, without which the spirit of the cavalry would be lost. The infantry

generals have too often the habit of imposing on the cavalry and of sacrificing it to the infantry; therefore, I desire that you keep it under your command and that you give orders to it directly.

Two hundred or three hundred men of light cavalry must not take position like a body of infantry; their mission is to scout and not to fight It must be made known that there is penalty of death for the commanders of patrols of light cavalry who spend the night in a town.

General Lloyd asks what is the use of much cavalry. I ask, how is it possible to carry on anything but a defensive war, protecting one's self with intrenchments and natural obstacles, when one is not almost equal to the enemy in cavalry; lose one battle, and your army is lost.

Here the author will call to his aid the Romans and Greeks a false and deceiving reference. At first, Hannibal constantly defeated the Romans and was on the point of taking possession of Rome, solely by the superiority of his cavalry. Of all of Europe, Italy is the one place, specially beyond the Apennines, where the terrain is least suitable for cavalry. The Romans and Greek hardly ever marched except along the tops of mountains; they had no chariots, no artillery; they always concentrated in a small camp. An army of 25,000 men was enclosed in a 600 foot square. After six hours of work, it was there impregnable. There they awaited the moment of attack or of attacking, in a country little suitable for cavalry. Finally, the phalanx, bristling with points, had a certain resisting power against cavalry. Artillery and the rifle do not permit any longer the employment of the phalanx. In all modern wars, among the nations equal in tactics, instruction and courage, armies are always maintained with equal strength of cavalry. One sees that the author has only served in the Austrian army, which never knew how to use cavalry. At Marengo, they allowed their infantry to be routed by a charge of 10,000 horsemen and within artillery range of their cavalry line over 10,000 men strong. At Castiglioni, they allowed the crossing over the whole of this beautiful plain and their cavalry did not undertake anything. By reason

of being used so cautiously, it kept itself in good shape, after so many different movements, finally it was to be lost in Mantua.

Cavalry requires audacity, skill and above all not to be dominated by the spirit of preservation and greediness. What could be done with a great superiority of cavalry, well armed with muskets, and accompanied by light artillery, strong and well horsed is incalculable.

Of these three arms, cavalry, infantry and artillery, none is to be held in disdain. They are equally important. An army superior in cavalry will always have the advantage of screening well its movements, of keeping well informed of the movements of the enemy, and of involving itself, just so much, as it may wish to. Its defeats will be of little importance and its efforts decisive.

He (Lloyd) wishes that the cavalry have neither carbine nor musketoon; this is inadmissible. Six thousand cavalrymen could then be stopped, when passing through a defile, by 200 or 300 infantrymen. Infantry troops would be necessary for the protection of their bivouacs and encampments. Finally, under adverse circumstances, in broken country, they would be unable to do anything towards protecting the retreat of an army or other convoy. They would be compelled to see several hundred vehicles and cannons captured, before their very eyes, by one or two battalions of sharpshooters, or they would see one or two battalions of sharpshooters arrive by a side road, take possession of a defile, through which the army is to pass, and which the cavalry as possessing greater mobility, had been sent ahead to secure.

The cavalry needs not only musketoons, but even cannon. The objection of cavalry officers is, that a carbine fatigues the horse, and still more the hussar or chasseur, whose horse is smaller; the cavalryman carries no knapsack; finally, even the horse will suffer; he will be much more tired in night bivouacs, because the cavalryman not having a fire arm, will not be able to do his duty except on horseback; and if he finds himself often in the presence of hostile hussars or chasseurs, or even of infantry sharpshooters, a large number of horses will be

killed. Summing up, at the end of a campaign, the loss that the horses of heavy cavalry will experience will be greater, if no carbine or musketoon is carried, than it will be due to the increment of arms and load that it gives to the cavalry.

Cavalry is useful before, during and after a battle. If you are in open country, the cavalry will push back the light artillery batteries, at first within cannon range of your flanks, will fall upon your baggage trains and parks, will fire upon and cut you up from the rear while the infantry will attack you and put you to flight; men, baggage, standards, everything will be lost. It is in this manner that it operated at Champaubert, Montmirail, Mangis Chateau, Thierry and Krasnoe.

Double rank formation: in a charge, the rear rank will charge like the first; four lines are useless; it is much better to have a single line which may be deployed to the right and left. The other system of the author (Lloyd) of charging in extended order is still worse. Order is the first principle of war, troops in extended order, should be picked troops.

The Emperor has found out while in Egypt that when there were over 100, a formation was necessary. The Mamelukes, the best cavalry in the world, were unable to withstand the charges.

"How shall one oppose," says the author, "this cloud of foragers." By four or five successive lines—which, maneuvering to the right and left, will increase immediately two or three times the front of the first line and following a charge. Without cavalry, how is one to carry on the campaign? How is one to escort this large quantity of baggage and of parks that the artillery requires?

At Tena, the French infantry won having only light cavalry; this victory had no results; but the cavalry reserves arrived, then the Prussians were no longer able to rally. Demoralized, they were driven back on all sides and pursued vigorously; of 200,000 men, not one recrossed the Oder. Without cavalry, battles are barren.

The light cavalry ought to reconnoiter far in front of the army; it ought to be supported and protected specially

by the cavalry of the line * * * . The light cavalry is necessary for the advance guard, rear guard and on the flanks of the army * * * . The cavalry needs more officers than the infantry. It should be better trained.

* * * Every light cavalry, every heavy cavalry, ought to be provided with a fire arm and know the school of the battalion and platoon. Three thousand light cavalry or 3,000 cuirassiers ought not to be stopped by 1,500 infantrymen posted in a wood, or in terrain impracticable for horses; 300 dragoons ought not to be stopped by 2,500 infantrymen.

The dragoons are necessary to support the light cavalry of the advance guard, rear guard and on the flanks of an army. The cuirassiers are less suited than the former for this kind of work on account of their cuirassiers, however, it is necessary to have them with the advance guard, but solely to accustom them to war and to keep them in trim.

A division of 1,600 dragoons, moving rapidly on a point, with 1,500 light cavalry, dismount to defend a bridge, the head of a defile, a height and await there the arrival of the infantry. Of what an advantage is not this arm during a retreat?

Cavalry charges are equally as good at the beginning, during, or at the end of a battle; they ought to be undertaken whenever they can be made against the flanks of infantry, specially when the latter is engaged in front.

They (the needs of war) demand four (kinds of cavalry) scouts, light, cavalry dragoons and cuirassiers. The cavalry, including scouts will bear a proportion to the infantry of one-fourth in Flanders or Germany; one-twentieth in the Pyrenees or Alps; one-sixth in Italy and Spain.

Cavalry has more need of formations and tactics than even infantry; it ought to know how to fight dismounted and be exercised in the school of the platoon and battalion.

If you attach a handful of scouts to each division, it is necessary that their number do not exceed one-twenty-fifth of the infantry, and that they be mounted on horses four feet, five or six inches tall, of which the cavalry cannot make use.

If the enemy's cavalry is to be feared, it is necessary to march in column, at platoon distance, so as to be able to form squares, by platoons, to the right and left while in battle.

It is for the cavalry to follow up the victory and prevent the beaten enemy from rallying.

The Germans do not know how to use their cavalry, they are afraid to compromise it, its value is overestimated; they husband it too much.

The cavalry of an army will bear a proportion to the infantry of six-twenty-fourths in Flanders or Germany; of five-twenty-fourths in Italy or Spain; of one-fifteenth in the Alps or Pyrenees and of one-twenty-fourth along the coast. In France, the cavalry will bear a proportion to the infantry of one-sixth.

Cavalry will perform its duties dismounted as well as mounted; to this end, it will be drilled in the school of the battalion and be armed with a gun or musketoon with a bayonet; no infantry will ever be assigned to support it, no matter what position it may occupy. Depending upon circumstances, it will station dismounted posts in woods, on heights, in marches and in houses * * *

The cavalryman will have two small provision bags to carry his rations during the marches of concentration; and a bag holding ten days oats for his horse, at the rate of four pounds per day; this bag will be divided into compartments, so that at a glance, the officer may assume himself that the cavalryman has taken care of his horse's feed.

The cuirassiers will specially be held in reserve, to support the light cavalry and dragoons. They will never be assigned to advance guards, rear guards or to the flanks, unless it shall be necessary to season them or to assist the dragoons.

That a division of 6,000 cavalrymen thus armed (lance, saber and a pair of pistols) be stopped by 100 voltigeurs occupy-

ing a house, village or ravine, is absurd; and who is to guard the cantonments, garrison towns and small places? Every cavalryman should have a musketoon or carbine.

Cavalry is useful before, during and specially after a battle, whether one be victorious or defeated. At Champaubert, Montmirial, Nangis and Krasnoe during 1812, the cavalry attacked by outflanking the infantry, passed to the rear of it and cut off its retreat, taking it in rear while * * * in front.

According to the Emperor, foreigners have never known how to get the best results from their cavalry, which is, nevertheless a very useful arm.

See what I might have done at Nangis or Vauchamps! At Lutzen, if the enemy had massed its infantry towards its left flank, and, while attacking, had struck our rear. What a confusion would have resulted?

CAVALRY AND HORSE ARTILLERY.

In weak cavalry brigades, too much artillery only hinders them.

Fools will tell you that the cavalry does no good in Calabria according to this statement, it does no good, anywhere. If Reynier had had 1,200 cavalrymen, and had properly used them, he would have done frightful damage to the English, specially if he had had some dragoons, who are armed with guns and fight dismounted * * *. You have five regiments of dragoons scattered about, you should assemble them and form a reserve, attaching to it four pieces of light artillery. These 4,000 men, capable of making thirty leagues in two days, can advance towards Naples or any other threatened point. What are you going to do with 300 detached dragoons, who will lose the esprit of their arm and will do you no good! * * * I repeat, assemble your dragoons, give them four or six pieces of light artillery with caissons and ammunition; consider them as infantry and organize them in such a manner as to move rapidly in any direction.

Prince d'Easing should leave some batteries with this cavalry; artillery is the complement of cavalry.

Horse artillery is the complement of the cavalry arm. Twenty thousand cavalymen and 120 guns of light artillery are equivalent to 60,000 infantrymen and 120 cannon.

Gassendi does not like horse artillery, specially ours, in which our cannoneers are mounted. Well! that alone has changed the phase of war. That is to say, to use artillery so as to always follow cavalry, is a great change. One can now, with cavalry and horse batteries attack the rear of an enemy's army. After all, what is the expense of raising some regiments of horse artillery, compared with the advantages derived from this arm?

LIGHT CAVALRY.

1. Light horsemen will form part of the light cavalry of the army. They will be armed with a musketoon and bayonet weighing less than six pounds, a saber, model chasseurs of the Guard, weighing less than three pounds, two pistols weighing each less than one pound and attached to the saddle by straps. One-half of the men of the escadron will be armed besides with a lance; all will have no other defensive weapon than a shoulder protection of chain mail and an iron cross on the shakos.

2. They will be trained to cross a river swimming alongside of their horses, holding to their manes and keeping the musketoon out of water. The horses will be saddled as simply as possible; they should be able to drink bridled and will be trained to drink but once a day. The man's clothing and equipment will be simple, loose and comfortable; officers, non-commissioned officers and privates will always sleep in their clothes, in peace as in war time.

3. In the field, escadrons of light cavalry will never spend a night in a town, village or farm; they will always bivouac on the picket line and will spend the night saddled and bridled at the bivouac that they will have taken after night fall (to this end, changing from the one occupied before sunset), and which be reconnoitered as much as possible during

the day time. The horses will only be fed by thirds and upon returning from morning reconnaissances. Any officer of light troops, who shall be surprised by the enemy on account of having spent the night in a town, village, castle or farm, or on account of having remained at night in the bivouac that he occupied before sunset, will be liable to trial by court martial.

CAVALRY COMBAT STUDIES.*

BY CAPTAIN D'AUBERT, FRENCH ARMY.

"The attack is all in the wish of the commander and the initiative of his subordinates."—General TREMEAU.

GENERAL CONSIDERATIONS.

1. *Will there be a cavalry combat?*

To put the question will show an absolute disregard of the conditions of war.

There will be cavalry encounters as there will be encounters of armies, because war is made to defeat the adversary and not to evade him.

Certain ones have been, at one time, the too exclusive knights of the cavalry tournament, outside of which the arm had nothing to tempt them.

Then came others who claimed the superiority of the troopers armed with the carbine over the trooper armed with the saber, and who praised dismounted action against mounted action.

Finally under a pretext of working in junction, they are about to prescribe even the principle of the encounter of arm to arm.

Where is the truth? It is everywhere.

*Translated for the War College Division, General Staff by Lieutenant William H. Harrison, Jr., 12th Cavalry, from the *Revue de Cavalerie* of October, 1913.

In principle, it is by the unison of action, by the combination of efforts of all the arms on the field of battle that the real useful work will be produced; that will be where success will come from. That which is important: is to be victorious in the battle with all the arms and not to obtain ephemeral successes in partial engagements, like those of the cavalry.

The cavalry should reserve itself for the battle; and it should not risk its existence before the battle except to assure the execution of its missions, or to take advantage of the occasions which it should always grasp.

Because one does not go to battle without maneuvering. The same maneuver is intended to prepare the battle by allowing the adversary to be attacked from strong to weak; and one maneuvers in articulating—that which can bring partial engagements (encounters), in giving to the arm of maneuver, which is the cavalry, special missions.

Thus, in order to prepare the battle, the cavalry will have to play its part in the strategical maneuver—exploration (scouting), delaying action and as nothing is obtained without risk, it will often be obliged to give battle to the opposing arm although not having desired it.

Will it give battle mounted or dismounted or combine both modes of action?

All depends upon circumstances; the mission, forces in sight, the ground.

One must not be an absolute partisan of either method of attack, but be ready to use either according to circumstances.

Generally the cavalry will obtain its most rapid, brilliant, and decisive successes mounted. But there are some cases where a too unequal struggle is to be avoided or when a weak force of cavalry, by using the terrain, will be able to hold in check a very much larger force of the enemy.

When a body of cavalry has reason to believe itself stronger than the other, it is perfectly well inspired to attempt to obtain as quickly as possible, the moral radiancy of triumph which will shine on its lances during all the campaign.

In the contrary case, it will be a more profitable tactics (for our cavalry) to place itself on guard against its rival and with the aid of our light infantry, which is so quick, of our

bicycle units so skillful and keen in maneuvers, to prepare counter attacks against the enemy where the heart and the esprit will replace the insufficiency of numbers.

Finally, in the battle itself, to reinforce the wings of the line, in the character of a guard or an attacking force, in the center as an attacking force or a counter attack, the cavalry should be in hand when arriving—combination with the other branches, but cavalry combats just the same.

Should the cavalry then avoid or look for the opposing (rival) arm?

The question has no longer a position to obtain.

Except in the battle of armies, where one endeavors to cause the material destruction of the opposing forces, one does not fight just to fight, but to fulfill (carry out) a mission.

Cavalry will therefore have a fight, alone or in combination, with the adversary's cavalry, in order to carry out its missions, notwithstanding the intervention of the enemy, or in order to take advantage of the fight. It will fight mounted or dismounted, following which ever method of attack will allow them to discount the greatest success.

Our regulations has, consequently reason to assert: In its operations, the cavalry will be found the more often in front of that of the enemy; it must first overthrow it, if this cavalry form an obstacle in the execution of its missions.

And besides: The mounted attack with side arms, which alone gives decisive results, is the principal method for cavalry fighting.

In the main, the fight of cavalry is a means and not an object.

In war we will not have time to deal in preparatory encounters, before the decisive engagements; therefore, it is necessary that we should know in advance how to conduct this delicate, transient, causing vertigo action, which the cavalry combat is action in which success will depend upon the clearness of the attack order and the rapidity of its execution.

Consequently the combat organization on the one hand; the action of the players on the other hand; are two principal elements of success, which it may be important to describe.

But there are many other points that it is necessary to examine in order to come to an opinion, in order not to find one's self incessantly, either in study or on the terrain, faced by new questions which cannot be solved by inspiration, if one has not thought them out previously.

Should you always attack in order to have the moral benefit of the offensive? Or should you allow yourself to be attacked in order to have the advantage of the ground?

Will you fight mounted or dismounted?

Will you attack the enemy as a large troop or with combat patrols (groups)?

Should the advance guard attack, wait or retreat?

Should the artillery be divided or should it act as a whole?

Should it be left with the main body or pushed on to the advance guard?

Should it approach the enemy from the front or maneuver on its flanks?

Is it expedient or injurious to save some troops?

Should one save his power in order to have the last reserve, or else risk all to accomplish all?

Will a good echeloning be successful?

Will there be an attack? Will there be a *mêlée*?

Should the units of an attacking force remain consolidated, and attack even if they have no particular objective? Or should they wait for an opportunity when they find nothing opposite them?

Can the decision come from the *mêlée* or must that be avoided if possible?

So many controverted questions, settled affirmatively in the most contrary meanings.

Then, equally, one can say that truth is everywhere; and that the errors of people obviously sincere, comes solely from this: that they have constructed a doctrine on a single particular case, from this that they have generalized an experience too localized and it is still to history that one must look for advice.

2d. *The Charge.*

The cavalry fight—properly speaking—is given over to charges, that is to say, mounted attacks.

Mounted attack comprises:

1. The charge itself.
2. Contact with the enemy.
3. The *mêlée*.
4. The retreat or pursuit.

It was, at one time, presentable to pretend that a charge well launched would find nothing in front of it—the adversary riding in the opposite direction before the contact—and it was only necessary to pursue.

History contradicts this exclusive affirmation; there are cases where the enemy did not wait for the shock, but cases of contact and of the *mêlée* are the most numerous.

In antiquity, Issus and Arbelles, victories of Alexander, are of large cavalry *mêlées*.

In the Middle Ages, Cocherel and Auray, in which Du Guesclin took part, are equally of *mêlées*.

In the 17th Century there is that of Rocroi, Malplaquet and many other encounters which are of the same kind.

Under the Empire the charges of Austerlitz, Hof, Moskowa, Waterloo, etc., being *mêlées*.

In the war of 1870 there was only one encounter of the cavalry, at Ville-sur-Yron, which became an immense *mêlée*.

The recent wars: Transvaal, Manchuria, Balkans, do not furnish us examples of this method of combat.

DeBrack shows us that the *mêlée* is a standard by indicating to us the conditions of successful charges:

1. To surprise the enemy.
2. To take him from the strong to the weak (in respect to numbers), when he has lost confidence or begun wrong movement.
3. To meet him with the troopers more united (cohesion) and the horses fresher than theirs (speed).

And he says elsewhere:

"When a charge is well begun, push it to the end and holding well you will succeed. In everything there is a growth, zenith, and diminution. A charge at its minute of start, its minute of *mêlée*, then that of hesitation and that of retreat.

Be firm during the second and third minute and victory is yours."

The *mêlée* is then one of the normal phases of cavalry combat, that cannot be disputed; and consequently there will very often be contact with the enemy.

Will the contact be a shock or a penetration of two adverse troops?

Certain ones have equally claimed that the material shock cannot be produced by the collision of two troops.

Ardant du Picq tells us himself:

"One always weakens before the shock, turns his back or else stops and then you have the *mêlée*."

However, the case can equally be produced where two troops in place of having an equal apprehension of the contact, rush to it with the same ardor and in this case there will be shock, that is to say material collision. We have often seen in the exercises in times of peace, whole platoons carried away by their ardor, who did not halt in time, they collided, clashed and overthrew each other.

The shock is then possible. That which will render it rare is that more often the troops who are to run against each other have broken the alignment at the command "charge," each trooper using at this moment all the speed of his horse. Then there is penetration of the adversary's lines and no shock.

But the shock will be produced between certain fractions, in particular conditions, if the circumstances have caused them to commence the charge at a sufficiently short distance from each other in order that the speed of the different mounts will not break the alignment.

In conclusion, these points seem definitely acquired.

The mounted attack will comprise:

1. The charge itself;
2. The contact: penetration, shock, half-turn (moral shock.)
3. The *mêlée* "if the adversary has not refused it."
4. The retreat or the pursuit, according to the chance of the fight.

But, as soon as the first encounter of the cavalry has been produced, in which each one of the adversaries, sure of his

strength which is to break that of the enemy's, by a direct attack one of the two wins, hoping to take his revenge in deceiving the adversary, by using not only strength, but also some strategem, by looking for the weak point of his rival, by striking the flank and the rear.

Thus, one can say that if the war, blow of strength, is as old as the world, one must add that the maneuver, blow of strategem, has only been a few days at the least.

War will no longer be made without maneuver, which is called according to the case, evolution or maneuver properly spoken, but of which the certain end is to take the adversary at his weak point.

3d. *The Evolution of the idea of Attack. (Rules since 1870).*

Tactics, according as it is inspired by theory or by experience, looks more or less for success in the evolution or maneuver and demand mechanical processes or a quick organism from it.

It is thus that there has been found two schools in the cavalry for a long time in competition. The one, the first is the Frederick school, officially abandoned today in Germany as in France. Its principles were:

1. Action in mass of a first line supported on its flanks by a second line less strong; both supported by a reserve;
2. Deployment preconceived;
3. Simultaneousness.

The second may be called the Napoleon school, as it puts to advantage the experience of the imperial epoc.

Its dogmas are the German Regulations of 1909 and the French of 1912; its principles are:

1. The maneuver.
2. Engagement by groups; according to the circumstances, each group using the echelon formation.
3. The economy of forces, based upon the fractions of the adversary by the strictly necessary numbers, in order to obtain superiority in the principal attack.

A rapid examination of the regulations that have come out since 1870, will show the evolution which was made in the ideas of combat and will make us understand how we have left the line

tactics (Limentaktik, the Germans say), in order to come to group tactics (Treffentaktik).

Regulations of 1876: The Austrian regulation of 1870, was the first to inspire the methods employed during the wars of the Revolution and of the Empire, in which, by a supple adaptation of the means in view, the organic life replaced mechanical movements in the unit.

Following the Austrian Regulations, are regulations of 1876 enter into the same idea.

The principles stated in it are the following:

1. The employment commands the school; every exercise must constitute a preparation for war.
2. There is no invariable rule for order of battle.
3. The subordinate unit "brigade in the division, regiments in the brigade, squadron in the regiment" have a large independence, each regulates itself upon the chief who is its guide and maneuvers freely in order to cooperate in the general action.

This suppleness, this liberty in the maneuver, appalls the formalists and * * *

The regulations of 1882 imposed Frederick's idea of the tactics of three lines:

The first (Cuirassiers) of the direct attack.

The second (dragoons) to maneuver on the wings.

The third (light) constituting the reserve.

All the tactics is summed up in the heavy blow.

Action making the essential properties of the branch call elsewhere:

Surprise and sturdiness.

But unique action presenting a grave danger;

To leave a gap in the line as a lure.

The regulations of 1899 allows the performers an absolute freedom of maneuver; "The chiefs of every grade must find in themselves the means of obtaining the success."

That may be the origin of an order of expansion of the tactical operations.

But one hardly profits by the latitude of the regulations; one applies it unconsciously no doubt, toward restraint.

Echeloning, which was indicated as a means of evolution, becomes a regular and at times rigid procedure of maneuver; one echelons in the march to the combat position.

One echelon in the attack; and the placing of the units, in a geometrical order, the ones in reference to the orders, replaces every idea of maneuvers.

Automatically, the evolution of terrain, exercises, revives the mechanical movements.

In 1906, General Lacroix just returned from a mission to Berlin, having been struck by the force of the attack of the German cavalry (which was then the attack in three lines) advised that this tactics be taken again by a supple maneuver; in causing the adversary to lose his way and breaking his cohesion by means of unforeseen movements, in attracting one side in order to attack another. In the main: to oppose the maneuver of the direct attack by striking the flanks, a weak point in the German arrangement.

The ministerial circular of August 9, 1908 adopted these conclusions:

1. Preparatory maneuver of a part of the forces;
2. Successive engagements, and well connected distinct groups, concentrating their efforts on a sensible point in the adverse arrangement.
3. Constitution of a reserve strong enough to allow the chief to intervene in a decisive manner in the continuance of the struggle.

We have found the parade of their attack; the Germans are perfecting their fencing.

Their regulation of 1909 replaces the brutal offensive by the maneuver, the attack of three successive lines axled on a single direction by the attack of mobile parallel columns,—combat groups easier to throw upon the objective.

In place of the attack at close quarters, the echeloning is done in depth and it is attempted to keep the advantage of throwing into the combat at the last a reserve which may give success.

The project of the 1911 Regulations wishes to reply to this tactics by concentric attacks of combat groups. Its principles are:

1. To attack from strong to weak; to choose, consequently the point of attack;
2. There to apply a superiority of power, by the concentration of several combat groups;
3. To gain time everywhere besides evading the decision by the fire or refused echelons;
4. Articulation of combat groups (brigades or regiments) in line of attack and echelons, echeloning from these groups at a distance from the support; the adoption of an interval of maneuver greater than the interval of deployment, in order to work by convergence.

These enlarged intervals make the object of the weaver critics in the military middle course where they reproached them to isolate the groups, to allow the adversary to work against a part of the forces with all his means, before the intervention of the other part.

And they renounced the maneuver by convergence, as they considered it dangerous.

The provisional Regulations of 1912 sanctions the articulation of the attack in combat groups. The great lines of its doctrine are the following:

(a) Object of attack:

1. Rupture of the opposing arrangement of troops;
2. Initiative of attack;
3. To the shortest attack (blow of strength) or maneuver in order to reach the weakest point (blow of stratagem.)

(b) Organization of the attack:

1. In general; the principal attack and the subordinate attack;
2. Organization into combat groups (brigades of regiments, artillery, auxiliary arms;)
3. Success of the main attack; connection, solidity, reciprocal support of the groups.

(c) Execution:

1. The combat groups are articulated in echelons; they furnish a line of attack, keep in one or two echelons of support, only deploying what is necessary;

2. Reserve, to produce a decision;
3. Auxiliary arms, allowing the saving of the forces; prepare, sustain, gather.

In the main, a principal attack and some subordinate attacks; tie, solidity, sustained reciprocally by the combat groups for the success of the principal attack.

The regulations of 1912 allow the impulse of the command and reflex action by the players, thanks to the articulation and the echeloning.

By way of retaliation, it wished to solidify the formations by diminishing the intervals and the distance of the guide of the troop and by creating the "bending" of the deployed regiment. The "bending" of the front unquestionably facilitates the conduct of the troop and allows the attack to be well adjusted; but the diminishing of the guide has greatly lessened the influence, prestige and "command" of the chief.

And the two cavalry rivals are today pretty near the same point:

Maneuver against maneuver;

Groups against groups.

The advantage will rest with the most rapid, the most keen, to that one perhaps which delays the shortest in throwing all its forces into the action.

The reserve, to long reserved, one must not make the mistake there, it is the temporization, then that the combat of cavalry is, by essence, brutal and short.

If our adversaries have the tendency to guard the last reserve, our rule prescribes to "throw all the forces into the balance when the occasion presents itself."

It seems that it is there that the real formula of success in the cavalry combat lies.

As one sees, the rules of combat vary incessantly, every foreseen attack in order to profit by the fault in the arrangement of the adverse regulation, bring about a ripost, under the form of a new regulation.

On the whole, the struggle between the two cavalries is engaged permanently. And, Mr. André' Cheradame tells us: "In reality the battles are won from times of peace, that is to say

that the victory is only a confirmation of the superiority acquired during peace."

One cannot immobilize then in one system; as perfect as it may be, it goes wrong. It has besides so much less value that it knows fewer methods of action and that it is better known by the adversary.

Tactics do not allow a unique procedure without which, employed by both parties, it gives the victory simultaneously. To such a manner of execution, declared in a moment, given the best, because it answers best to the tactical processes of the rival, that one will attempt to oppose a new blow for which a new parade will equally be found and thus one after another.

It is fencing, and it will be simple for one to imagine that the thrust will at last be found irresistible.

All the proceedings, since those of Frederick and Napoleon until those of Frederick-Charles or of Geslin of Bourgogne are to be kept in the arms arsenal which they wish to use. But it is necessary that the chief have a clear enough mind to judge the situation, quick to choose among his forces those whose employment fits the occasion.

If the enemy on one side places reliance upon a maneuver by combat groups, we will overthrow his disposition and his combinations by surprising him by an attack of three lines according to Frederick. If, on the contrary, he advances upon us in mass, we will fool him by a brisk faint attack and will throw upon his flanks a supple and rapid attack by groups.

Conditions of modern war admit a permanent tactical evolution and necessitate the incessant execution of new regulations. It is necessary, said Napoleon, "To change tactics every ten years"—But it is not necessary to forget the old method and to so allowable to have recourse to them when occasion requires.

A tactician always has several tricks in his "cartridge box;" he thus retain the surprise which is the best weapon.

4. Echelons in combat groups.

The power of the German attack in three lines upon which, in 1906, General Lacroix drew our attention, did not escape General de Bourgogne who, ten years earlier, had already

looked for a method of opposing the maneuver of the straight lunge.

Mislead, feint and attack in an unlooked for direction.

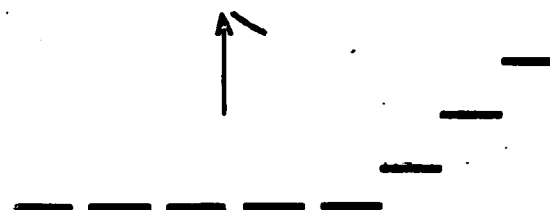
The maneuver implies the necessity of arriving on the flank of the adversary: it can not demand these oblique movements either in line—with which one does not maneuver, or in column, which takes too much time for deployment; the means will be found in echeloning that is to say a supple disposition presenting at one time that advantage of both the line and the column, allowing quick movements and rapid deployments in every sense.

To speak truly, echeloning was not a new idea; De Brock recommends it and Frederick's troops like those of Napoleon employed it; but the extension, the spread which General Geslin de Bourgogne gave it in making a really new doctrine which contained the base of the French regulations of 1899 and of 1912, and of the German regulations of 1909.

As we have just said, in the orders of Frederick's time one finds the idea of echeloning. The second and third lines must extend beyond the preceding line to which they are acting as support.

And in 1840, in Russia, General de Bostell, ordered to draw up a new regulation, already written; * * * " * * * A formation in depth of several echeloned lines, combined with the columns of attack of the wings will present great advantages, as much as to guard the flanks as to take a rapid offensive."

But the Austrian regulations of 1863 is the first it seems, to pass from the waiting echeloning to the offensive encheloning, and we find there the disposition of attack by brigade shown by the figure and the following description:



"A regiment deployed, a regiment echeloning its squadrons on a flank; the first echelons are advanced on the exterior wing, the last are supporting the deployed line."

Nevertheless, the echeloning, is still a mechanism; (figure) it supports a line; it has not the independence which will allow it to use the properties of maneuvering from its disposition.

THE PROMOTER OF THE ECHELONED MANEUVER (L'IRREGULIER.

Investigated in 1894. The Echeloning.

1. "The Efficient support of the lines, one by the other;
2. "Solidity" which intimately unites in the struggle.
3. "The possibility of the manetver" forced consequence of the preparatory disposition of the adopted combat and of the movements of the enemy."

General Geslin de Bourgogne not only foresaw the rôle of the echelons, but he organized the action into combat groups.

In his study on eechelons, he gave to the units, brigade or regiments, missions, and these elements to maneuver arranged themselves in echelons. It is, properly speaking, the actual maneuver by "combat groups," but in 1894, the word was not pronounced and the regulation of 1899 adopted purely and simply "echelons."

Unfortunately this arm of maneuver, of life, is soon bent; it is employed wrongly and irregularly and from narrow prescriptions, destined to obtain the correct maneuver on the drill ground, completely misrepresents it. One distinguishes the echelon of evolution from the echelon of attack, etc., * * * and they drill in echelons at fixed distances and intervals * * *. The routine of the exercises brushes it back again to the mechanical.

At the maneuvers, another spectacle, the forces held in leash during the year escape in all directions; the dispositions to which the chiefs had wished to give a rigid brace, broke, by the reaction against unsupportable suppression. And it was the unbridling of the initiative, the untimely actions, the dispersion of efforts, the pulverization of the mass and of the force.

The echeloning replaced the order of maneuver, the disposition took the place of the combat mission. And, finally, with the echelons of brigades, in the division, and half regiments in the squadrons in the brigade, they arrived at a crumbling, at a total dispersion, at a volatilization of the power.

It becomes necessary to reorganize this disorder material and moral—to agglomerate the dust, to give a unity to the different actions, a framework to the fractions charged with the attack, some means to make play well tempered but limited in numbers—means placed at the hands of the chief who can with one gesture unbend them, in the sense of the object.

These are the combat groups of our actual regulations.

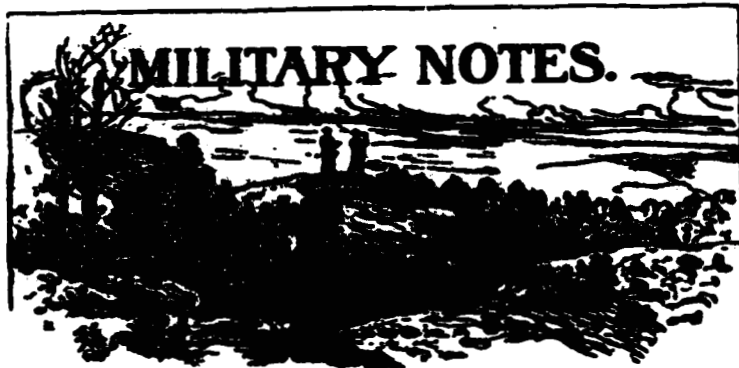
The combat groups of the division will more often be: Brigades (sometimes regiments); Artillery; Bicycle infantry; Reserve; four or five elements, six at the most, to which the chief will have to give missions, from which he must coördinate his actions and who will carry out his orders directly, rapidly and with precision.

The echelon does not become any the less the element of maneuver of the groups.

But the points of attack of the groups have become the poles of attraction of echelons of obligatory connection. And the unconnected of the actions forms a place in the execution of each combat mission, by a coördination of efforts.

"Every tactics," says Colonel de Gondrecourt, "must be able to depend as much upon the precision of the mechanism as upon the life of the organism."

This double condition is realized by the combat group, which has a true life and which having, thanks to the echeloning, a framework solid and supple, constitutes in some way, an organized mechanism.



THE FORCED MARCH.*

1. Occasions: Pursuit of the enemy's detachments; Necessity for quick concentration; Raiding in the enemy's country; Escort duty; Officers' test rides.

2. Favorable conditions: Cool, dry weather; good dirt roads; level country; frequent watering places; bright moonlight (in night marching).

3. Horses on forced marches will be favored by limited watering on the road; by thorough rest at night; thorough rubbing down and grooming; good shelter; also by light loads.

4. Unfavorable conditions: Rough or heavy roads or trails; poor condition of horses; heavy loads; hot humid weather.

5. The gaits of a rapid forced march should be the walk and trot. The gallop is too exhausting and should never be used.

*Extract from General Orders, No. 8, Headquarters First Cavalry Brigade, Fort Sam Houston, Texas, March 10, 1914, Brigadier General James Parker Commanding.

6. Long closed-up columns are unfavorable for the maintenance of a uniform rapid gait on the road. Inequalities in the road and the necessity for closing up will cause the horses in rear to move irregularly.

7. To secure uniformity in the walk and trot each troop of cavalry should be divided into detachments, each having a depth in column of not more than twelve troopers, and led by an officer or non-commissioned officer whose duty it is to maintain a uniform gait, keeping at a distance of not more than ten yards from the rear of the detachment in front. The leader should regulate the gait as far as practicable by that of the leader of the detachment which precedes him.

8. For freedom of movement the troopers should ride ordinarily in column of twos. When the road is hard in the center and soft on the sides it is often desirable that the column of twos should open up, thus moving in two columns of files, each riding on one side of the road. The columns should move alternately five minutes at the trot and five minutes at the walk, dismounting and leading during the last five minutes of the half hour, and dismounting and resting during the last five minutes of the hour.

9. During this halt the saddles should be adjusted and the horses feet looked after.

10. It is sometimes of advantage to halt for half an hour when the day's march is half completed, allowing the horses to drink sparingly and feeding them a few pounds of oats. During this period the saddles should be taken off and the backs and legs rubbed.

11. Moving in the above manner the march is made at an average rate of 5.7 miles per hour, and a distance of fifty miles may be completed in nine hours. It is thus possible to complete 100 miles in 24 hours, with an interval for resting the horses of six hours.

12. Since the horses obtain better rest and sleep during the night, the most favorable conditions for a forced march of twenty-four hours, are to start in the afternoon, making fifty miles, rest six hours, start at daybreak and make the remaining fifty miles.

13. It is not desirable to start before daybreak, as the best rest of the horse is obtained just before dawn.

14. Thus the following schedule is suggested:

To ride 100 miles in twenty-four hours: Ride from 2:00 P. M. to 11:00 P. M.; rest six hours; ride from 5:00 A. M. till 2:00 P. M.

To ride 150 miles in forty-eight-hours: Ride from 2:00 P. M. to 11:00 P. M.; rest eight hours; ride from 7:00 A. M. till 4:00 P. M.; rest thirteen hours; ride from 5:00 A. M. till 2:00 P. M.

To ride 200 miles in seventy-two hours: Ride from 2:00 to 11:00 P. M.; rest eight hours; ride from 7:00 A. M. to 4:00 P. M.; rest fifteen hours; Ride from 7:00 A. M. till 4:00 P. M.; rest eleven hours; Ride from 5:00 A. M. till 2:00 P. M.

15. When, as often occurs in a campaign, horses are heavily loaded, and roads and trail are poor, the troopers should be required to dismount and lead at more frequent intervals. By alternating the walk and trot, the troopers leading while at the walk, a gait of four or five miles an hour can be maintained without unduly exhausting the horses.

16. To dismount and lead is often a relief to the men, and at the same time rests the horses. The men should be required to walk when leading at least three and one-half miles per hour.

17. By experience it has been found that at the end of five minutes trot, the horse is beginning to blow; at the end of five minutes leading at a fast walk the trooper finds it a relief to mount and the horse has become rested.

18. In rapid forced marches of squadrons over rolling country, the length of the column is such that if the whole column should trot at the same time, part would be trotting on level and therefore favorable ground, while other parts might be trotting on slopes, or unfavorable ground. To enable each portion of the command to trot when the ground is favorable, and walk when the ground is unfavorable, the troops should follow each other at a varying distance, the maximum being about 100 yards. The Major having notified each troop commander of his intention to move at a forced march gait, each troop then regulates its own gait, taking advantage of the most

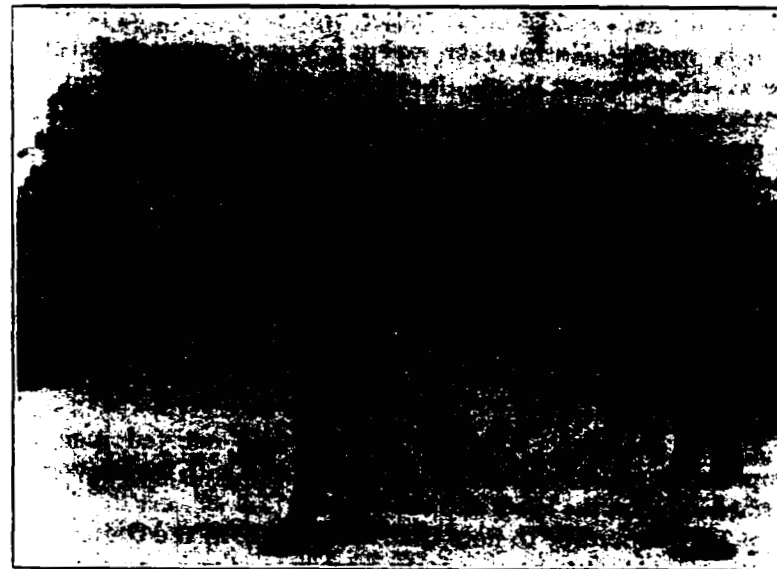
favorable ground, maintaining a distance from the troop in front of not more than 100 yards. No signals for the change of gait should be sounded.

19. Similarly, when a regiment is making a forced march, each squadron should maintain a distance from the preceding squadron of not more than 300 yards. To keep in touch, connecting files should be used.

20. Forced marches for long distances will be made only in emergencies.

21. The methods of the forced march, however, should be constantly practiced.

AN OFFICER'S CHARGER.



MINDORO.

Owned by Colonel JOSEPH A. GASTON, Sixth Cavalry.

Foaled 1907 in Virginia. Dam a three quarter thoroughbred. Sire a Franch Coach. Height 15-2; girth 72 inches; circumference of canon bone eight inches; weight 1,100 pounds.

CAVALRY MANEUVERS IN FRANCE.*

September 2-10, 1913.

(a) *Mounts*: Excellent, light, active horses, Anglo-Arab race, extensively raised and utilized in France for cavalry purposes; a general type that United States should seek to obtain for its cavalry horses. Anglo-Norman race generally heavier than required for American cavalry, but excellent for artillery. Practically all military horses possess at least fifty per cent. thoroughbred blood.

(b) *Equipment*: Officers', excellent, except revolver which is too small; saddle as nearly perfect as possible it seems. Enlisted men's saddle poor; halter bridle excellent, as good as can be made. No revolver, except few non-commissioned officers'. Carbine too short. Saddle blanket folded in about six folds, excellent. Fighting equipment, of which saber and lance form the important parts, considered far inferior in destroying an enemy to large caliber pistol and good carbine of the United States.

(c) *Organisation*: Double rank formation of cavalry considered inferior to single rank formation employed in the United States.

(d) *Tactics*: Fighting on foot and fire action virtually discouraged; greatest dependence placed in charging and use of lance and saber.

(e) *Training*: Excellent; officers and enlisted men in superb physical condition, and highly efficient with their favorite arms; namely, the lance and the saber.

It is important to note that the French, in the training of both men and horses earnestly pursue a fixed, progressive system. The subject of changes in equipment, organization or tactics was never heard discussed. Efficiency in existing or-

*Extracts from notes made by Captain Albert McClure, Eleventh Cavalry.

ganization, and efficiency in the use of the equipments furnished appear to be the motto of the French soldier. Change is looked upon as a step backward. Is there any wonder that a high state of efficiency is obtained? Can a high state of efficiency be obtained by constant changes? Certainly not.

SPORT IN THE ARMY.

HEREWITH is the first number (double number 1 and 2) of a new periodical to be known as "*Sport in the Army*." This is published monthly as a supplement to the "*Militär Wochenblatt*."

The fundamental object is to encourage sport in the Army and particularly to spread in the Army information concerning the Olympic Games to be held in Berlin in 1916. "*Sport in the Army*" is also the official organ of the War Ministry for the circulation of regulations governing military participants in the Games, and will publish from time to time the orders of the War Minister,—all information concerning the prizes offered by the War Ministry, the notices of the Olympic Games Committee, and reports of Officers' Gymnastic and Sport Clubs, reprints from the various sport journals and reviews of sport literature.

The paper costs two Marks per year.

The following is a translation of the table of contents:

	PAGE.
Competitive tests for the Army in Berlin (June 5-8, 1914).....	3
Official information of the Committee for the Military Preparation for the Olympic Games.....	6
List of participants to take part in the 1st, preparatory contest..	8
Notices of the Headquarters and Officers' Sport and Gymnastic Clubs: Berlin, I, X, XIV, XVII, XVIII, XX, A. C. Bavaria.....	9
Prizes for the 10th Berliner Army Pack March.....	20
Officers' Sport Clubs.....	21
The Modern Contest.....	22
The Army and the German Stadion 1913.....	25
Our Navy and Sport.....	26

Attention is invited to the fact that the editors would be pleased if this periodical could be circulated in our Army and would also be glad to publish any announcements concerning the participation of the U. S. Army in the Olympic Games.

This publication is but another instance of the careful, thoughtful and timely attention given by the German War Department in furthering the best interests of the German Army and people.

Regarding this publication the Editor writes:

"In view of the approaching VI Olympic Games to be held in Berlin 1916, the undersigned firm, at the instigation of the Prussian War Office, has decided to publish a periodical in the interests of military sport. The paper is called "*Sport in the Army*." (Sport in Her.)

"We take pleasure in forwarding a copy of the first number. The editors would be specially pleased if the periodical could be circulated in your army, and the editors would be very pleased to publish any announcements concerning the participation of the United States Army in the Olympic Games.

"As far as possible it is requested that all notices be in either German, French or English."

It is published by the well known firm of W. S. Mittler & Sohn, of Berlin.

AN OFFICER ABROAD.

WARNING TO USERS OF TURPENTINE FOR MEDICINAL OR VETERINARY PURPOSES.

USERS OF THIS SUBSTANCE CAUTIONED TO MAKE CERTAIN THAT IT IS NOT ADULTERATED.

AS the result of an investigation by the U. S. Department of Agriculture, it has been found that the adulteration of turpentine with mineral oils is so widespread that druggists and manufacturers of pharmaceutical products and grocers' sundries used for medicinal and veterinary purposes should exercise special caution in purchasing turpentine. Those who use

turpentine for this purpose, unless they are careful, run the risk of obtaining an adulterated article and unnecessarily laying themselves open to prosecution under the Food and Drugs Act.

It has been found, moreover, that the turpentine sold to the country store especially, as usually put out by dealers and manufacturers of grocers' sundries, is often short in volume by as much as five or ten per cent. Dealers, therefore, should also protect themselves through guarantee from the wholesaler that the bottle contains the full declared volume.

The Department has found that turpentine may be adulterated in the South where it is made and that the further it gets from the South the more extensively and heavily it is adulterated.

In all cases, druggists, manufacturers and wholesale grocers should satisfy themselves that the turpentine is free from adulteration and is true to marked volume.

BICYCLE TROOPS ATTACHED TO CAVALRY DIVISIONS.

IN accordance with the law of March 31, 1913, reorganizing the French cavalry, all the regiments, seventy-nine in number, serving in France proper, were on October 1st, last organized into ten cavalry divisions, of which eight have three brigades each, and the remaining two (the 4th and 10th), four brigades each. Fifteen of the brigades contain three regiments each, while the other seventeen brigades consist of only two regiments each. In time of war one regiment of cavalry (or in exceptional cases two or three) is to be assigned to each army corps; these regiments will be designated in special orders, but in time of peace will remain attached to the cavalry divisions.

To each such division is assigned a battalion of horse artillery, and a "groupe" of bicycle troops. This "groupe" is formed of a company or a half company of light infantry (Chasseurs).

It is divided into three platoons and mounted on portable bicycles. It is intended to accompany and keep up with the cavalry at whatever pace and over no matter how rough ground the latter moves, and is to afford it instant infantry support at any desired moment. The tactical result of this, it is claimed, will be to increase sensibly the offensive value of the cavalry divisions, since without having to sacrifice any of their rapidity of movement, they can count upon the support of the infantry fire of the bicycle troops in any emergency. It is estimated that the bicycle groups can maintain over all sorts of country an average speed of from seven to eight miles an hour for a long period.

I enclose a small book of instructions for the bicycle troops, issued by the Minister of War on Aug. 7, 1913.

I also enclose a descriptive circular of a new portable folding military bicycle which, I am informed, is now being given a trial by the French army. One of the chief claims made for it is that it is lighter than any of the military bicycles now in use, which weigh from thirty to forty-five pounds each, while this weighs only twenty-three pounds complete with brake, mud guard, pumps and other accessories. It is also claimed that it is strongly built, readily repaired, and easily carried on the soldier's back when necessary. Further details can be obtained if desired.

AN OFFICER ABROAD.

GLANDERS VACCINE NOT SATISFACTORY.

Department of Agriculture Advises Killing of Infected Horses and Safeguarding the Well Horses from Infection as the Better Method.

THAT glanders vaccine is not effective in rendering horses immune from this dangerous disease is the conclusion reached by specialists of the Bureau of Animal Industry, U. S. Department of Agriculture, as a result of extensive experiments with horses and other animals. The experiments show that while

mallein is highly effective as a means to discover the presence of glanders in a horse, neither mallein nor glanders vaccine has shown any positive value in curing animals sick with glanders.

In the experiments seventeen horses were used. These were stabled under such conditions that vaccinated and unvaccinated horses could be brought into contact with a good discharging case of glanders. Mallein and eye test were used carefully to determine the results. The investigators report the following conclusions which appear in a professional paper published by the Department entitled "Immunization Tests with Glanders Vaccine."

The results obtained by these investigations appear to be sufficient to demonstrate the unsatisfactory results of this method of immunization. Of the thirteen immunized animals nine contracted the disease from natural exposure, which is a large proportion when it is considered that all animals were aged and kept most of the time during the exposure out of doors. Of the four remaining immunized horses, one died of impaction after the second vaccination, while the other three animals, were killed August 20, 1913, in order to ascertain by post mortem examination the possibility of glanders existing in these animals which had given positive serum reaction, but which had returned to normal. In artificial infections of the vaccinated animals they showed no resistance whatsoever, as both vaccinated horses promptly developed an acute form of the disease from touching the Schneiderian membrane with a platinum loop which had been touched to a growth of glanders bacilli. For the present, therefore, it seems advisable to abstain from immunizing horses by this method, as a practice of this kind may do more harm than good. Owners having horses which are supposedly immunized would naturally become careless thinking their animals were resistant to the disease, and thus even a better opportunity would be offered for the propagation of the disease than if the horses were not vaccinated. Furthermore, the fact that the blood of vaccinated animals can not be utilized for serum tests for two or three months after the injections is also a great disadvantage in the eradication of the disease.

As a result of this preliminary work it appears that the control and eradication of glanders must still be dependent upon the concentration of our efforts in eliminating infected horses and the adoption of proper precautions against the introduction of infected animals into stables free from the disease. The results achieved in Germany, Austria and Canada by these methods have proved very encouraging, and no doubt if executed in the same spirit in this country a marked reduction in the cases of glanders would result.

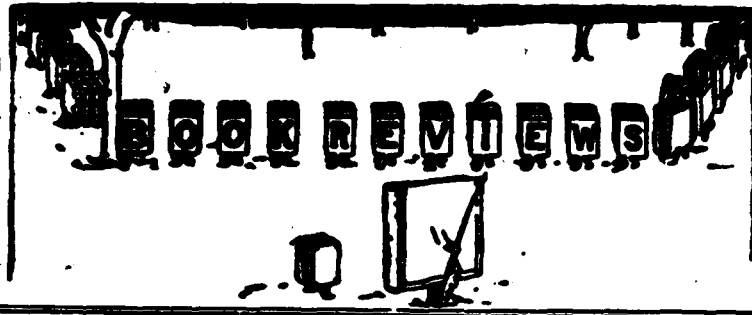
MILITARY CRITICS.

Lucius AEmilius Paulus, a Roman Consul, who had been selected to conduct the war with the Macedonians, B. C. 168, went out from the Senate-house into the assembly of the people and addressed them as follows:

“IN every circle, and truly, at every table, there are people who lead armies into Macedonia; who know where the camp ought to be placed; what posts ought to be occupied by troops; when and through what pass Macedonia should be entered; where magazines should be formed; how provisions should be conveyed by land and sea; and when it is proper to engage the enemy, when to lie quiet. And they not only determine what is best to be done, but if anything is done in any other manner than what they have pointed out, they arraign the consul, as if he were on trial. These are great impediments to those who have the management of affairs; for everyone cannot encounter injurious reports with the same constancy and firmness of mind as Fabius did, who chose to let his own authority be diminished through the folly of the people, rather than to mismanage the public business with a high reputation. I am not one of those who think that commanders ought never to receive advice; on the contrary, I deem that man more proud than wise, who did everything of his own single judgment. What then is my opinion? That commanders should be counselled, chiefly, by persons of known talent; by those, especially, who are skilled in the art of war, and who have been taught by experience;

and next, by those who are present at the scene of action, who see the country, who see the enemy; who see the advantages that occasions offer, and who, embarked, as it were, in the same ship, are sharers of the danger. If, therefore, anyone thinks himself qualified to give advice respecting the war which I am to conduct, which may prove advantageous to the public, let him not refuse his assistance to the State, but let him come with me into Macedonia. He will be furnished by me with a ship, a horse, a tent; and even with his traveling charges. But if he thinks this too much trouble and prefers the repose of a city life to the toils of war, let him not, on land assume the office of a pilot. The city, in itself, furnishes abundance of topics for conversation; let it confine its passion for talking to these topics and rest assured, that we shall confine ourselves to our military councils.”

Livy, Book XLIV, Chapter 22.



Military Hygiene.*

This most excellent work has been completely revised and brought up to date which work should be performed frequently with books relating to a subject that is so steadily advancing, particularly in the application of knowledge gained by experience.

The book is somewhat larger than the first edition the author having added 283 pages. This is not always good policy for it tends to take it out of the class of manuals and make it more of a reference book. It is to be hoped that in future editions the present size of the volume will be retained.

The chapters treating of infectious diseases are very thorough from the standpoint of the sanitarian and the line officer can also read them with great benefit. With probable service in Mexico a general knowledge of these diseases would assist the company officer materially in conserving the health of his command.

***MANUAL OF MILITARY HYGIENE FOR THE MILITARY SERVICE OF THE UNITED STATES.** By Colonel Valery Harvard, Medical Corps U. S. Army, Retired, former President of the Army Medical School. Published under the authority and with the approval of the Surgeon General U. S. Army. Second Edition. Thoroughly revised and greatly enlarged. Seven plates and 251 engravings. William Wood & Co., New York. 1914. Price \$5.00, net.

In the chapter on the purification of water the author has brought his material up to date. Among other methods he discusses at length the Darnall apparatus for the chlorination of water supplies.

In the chapter on cooking attention is called to the excellent methods used in foreign armies to provide hot food for the soldier at all times. The general efficiency of our field cooking apparatus is commended but a more thorough investigation of wheeled kitchens is recommended.

The new field equipment of the enlisted man is well described and the text illustrated by numerous cuts showing its proper arrangement.

The author gives full weight to the recent experiments of Hill and others regarding the theory that the bad effects of poor ventilation are not due so much to the presence of poisonous substances in the air as to its lack of movement and high temperature. Unfortunately he does not consider the theory in discussing ventilation methods.

The section devoted to field sanitation is most excellent and practical and would I think be very useful to officers in actual campaign.

Taking the book as a whole it can easily be seen that this edition is well up to date and shows that its revision was not made by printing second edition on the title page.

Turco-Balkan Campaign.*

For a military man conversant with the Spanish language, this book gives a clear understanding of the Campaigns of the Allies, as details of tactics, strategy and organization are critically treated.

The first chapter deals, in a general way, with the causes leading up to the declaration of war; the second with a description of the topography of the theater of war.

***SKETCH OF THE TURCO-BALKAN CAMPAIGN.** Compiled under the direction of the Chief Military Information Division by the Committee of Observers from the General Staff, attached to the armies. In the original Spanish.

In the third chapter, the general plan of campaign of the Bulgarians and the special plan for the invasion of Thrace; the organization, mobilization and concentration, the preliminary operations and movements of the three corps and of the cavalry division are discussed at length. The capture of Kirk-Kilissee, the battle of Bunar-Hissar, Lula-Bourgass, the attacks on the Tchataldcha lines and the investment and capture of Adrianapolis are covered as well as could be expected in the absence of official reports from the belligerents.

The organizations, plans of campaign, theaters of operations and the operations of the Armies of Servia, Greece and Montenegro are discussed in Chapter IV, V and VI respectively.

As stated in the sketch, it is somewhat premature to formulate definite conclusion regarding the campaign. Since the General Staffs concerned have not yet published their accounts of the war, giving in detail the orders issued, and the manner of execution it is nevertheless of interest to note them.

The following remarks are by the Compilers: "No changes should be made in the existing regulations, as the methods of attack employed by the Allies are not to be considered as types, in view of the fact that they were opposed by a demoralized enemy." In studying the report one is impressed with the truth of that military maxim, "Rapidity is one of the greatest of military virtues."

The book is rendered extremely interesting by numerous photographs taken in the theaters of operation, and by numerous maps; but it is to be regretted that the scale of the latter makes rather tedious the following up of the movements of the different armies.

A. MORENO,

First Lieutenant, Twenty-eighth Infantry.

American Policy.*

This book of 184 pages—7½ in. by 5 in.—is by the well known writer on military subjects, Major John Bigelow, U. S. Army, retired. Its purport is best shown by the following extract from the preface:

"The subject of Foreign Policy and World Peace have never been so much in the minds of the people of the United States as at the present day. Pan American Congresses, the Panama Canal, the difference with Japan, the Revolution in Mexico, the question of the Philippines, Tariff Reduction, The Hague Conferences, the Centennial of Peace with Great Britain, and other incidents direct our thoughts to foreign countries and lead us to reflect on the relations which we hold with them. The purpose of this little work is to minister with fact and reason to such reflection.

"It deals with American policies in their broadest aspects, with political problems of the United States and all America. It seeks to explain the Monroe Doctrine, distinguishing between the extension and the perversion of it; to show its bearing and that of Washington's Farewell Address upon present national affairs; and to expound the theory of Pan Americanism in its true relation to the Monroe Doctrine."

In this book the author deals with the American policies in their broadest aspects—with political problems of the United States and the other American countries. He gives an able and brilliant discussion of the problems of permanent interest and of vital importance to all our people today.

*AMERICAN POLICY. The Western Hemisphere in its Relation to the Eastern. By Major John Bigelow, U. S. Army, Retired. Author of "Mars-la-Tour and Gravelotte;" "The Principles of Strategy;" "Reminiscences of the Santiago Campaign;" "The Campaign of Chancellorsville." Charles Scribner's Sons, New York.



Editor's Table.

DON'T SHOOT THE EDITOR!

In the old frontier days when dance halls were common in the western garrison towns, a certain proprietor of one of these resorts had the misfortune to lose, in some way, the services of his only musician. A tramp fiddler, hearing of this chance for employment, applied for the position and was hired, although his employer was aware that he was a poor substitute for the place. On the night of his first appearance, the proprietor, knowing full well the proclivities of his patrons, posted the following notice conspicuously about the hall: "Please don't shoot the fiddler, he is doing his best."

Similarly, your Editor is doing his best to keep up the CAVALRY JOURNAL to its former high standard and to bring it out on time but under very adverse circumstances during the last year, or ever since our cavalry has been on the border.

First, to apologize for the late appearance of this number of the JOURNAL, our members and subscribers are informed that this is partly due to the sudden and unexpected closing of the Army Service Schools with which your Editor is officially connected, partly to the fact that, when the time came to send copy to the printer, there was a shortage of available material for publication, and when ready to furnish the copy, the printer was tied up with other work.

Ever since our cavalry has been on the border and have been so strenuously engaged in patrol duty, there has been very little written by those who have been our mainstay in the past and it has been a struggle to obtain suitable original articles for publication. As a fact, the matter on hand for use for each of the

last three numbers of this JOURNAL at the usual time for making up the program for the forthcoming number consisted of a single original article and those the three articles from the pen of Major General Davis, which were on typical cavalry topics and greatly interesting. It is to be regretted that others of our retired cavalry officers who have had long and varied service, do not help us out in this emergency.

There are many of them, to whom appeals have been made, who could, in their leisure moments, furnish original articles based on their experience or study.

Five years ago, at the time the change of the publication of the CAVALRY JOURNAL was made from a quarterly to a bi-monthly, the present President of the Cavalry Association, then in command of the Division of the Philippines, wrote and advised most emphatically against the proposed change. He claimed that, from his former experience as Editor of the CAVALRY JOURNAL, it would be found difficult to keep our Journal up to the proper standard with the comparatively few cavalry officers who were writers and that it would be found necessary to pad with school essays, reprints, etc. Unfortunately, this protest was received after the change had gone into effect, by a vote of the Executive Council, and since that time it has continued as a bi-monthly. Many times since has your Editor been reminded of this prediction made by General Carter and wished that the JOURNAL was a quarterly instead of a bi-monthly.

Recently, at the last meeting of the Executive Council and just before these officers and all others at the Army Service Schools were ordered to join their respective commands, it was ordered by the Council that, commencing with the July, 1914, number which would be the beginning of a new volume, the CAVALRY JOURNAL should thereafter be published quarterly. Notwithstanding the fact that it may be looked upon as a step backward, your Editor feels that this is the only thing to do, at least in the present emergency and that, even as a quarterly, it will be difficult to keep the JOURNAL going and up to a proper standard without greater help than has been forthcoming during the last few months.

MILITARY HISTORICAL ESSAY.

The American Historical Association has offered a prize of two hundred dollars to be awarded for the best unpublished monograph on military history to be submitted to a Committee selected by the Association before September 1, 1915.

Captain A. L. Conger, U. S. Infantry, Instructor at the Army Service Schools, has been selected as chairman of the "Military History Prize Committee," and he writes regarding this competition as follows:

"This prize represents an attempt by the Historical Association to give a stimulus to the writing of scientific military history and to bring into closer communication the professional military man and the historian. If it is to be successful and to be continued as a feature of the Historical Association's activities, the interest of army officers must of course be aroused and it is to this end that you are asked to assist in bringing this notice to the attention of your subscribers."

The following are the main features of the conditions of award:

"The monograph must be based upon independent and original investigation into some field of the military history of the United States. While the Committee will receive any scholarly work on any American war, it would suggest that in the selection of topics for investigation preference be given to the Civil War. The monograph may deal with a campaign, a battle, a phase or aspect of a campaign or battle, with the fortunes of a corps or division during a battle, or with such subjects as the mobilization or organization of volunteer forces, the material, transportation of food supply of an army, or strategy and military policy.

"The monograph must be a distinct contribution to knowledge.

"The monograph must be based upon exhaustive research; conform to the canons of historical criticism; be presented in scientific form; contain exact references to sources and secondary work; and be accompanied by a full critical bibliography.

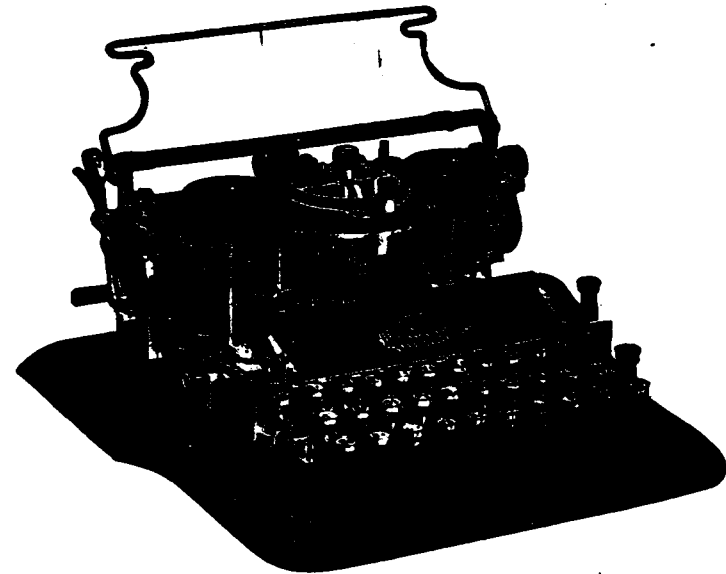
"The monograph should not exceed one hundred thousand words in length. The manuscript should be typewritten, and must be neat, correct, and in form ready for the printer. * *

"In making the award the committee will consider not only research, accuracy, and originality, but, also clearness of expression, logical arrangement, and literary form. The prize will not be awarded unless the work submitted shall be of a high degree of excellence."

For further particulars, address Captain A. L. Conger, now at Texas City, Texas.

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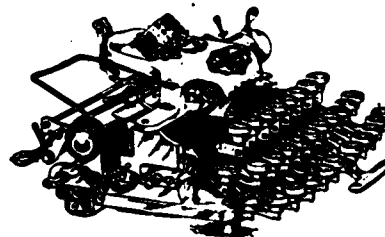
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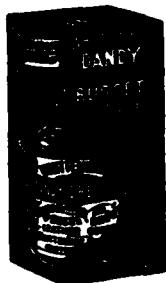
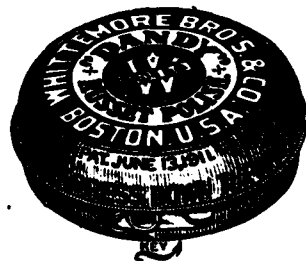
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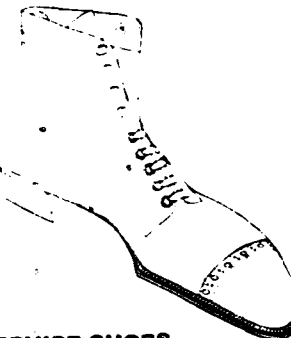
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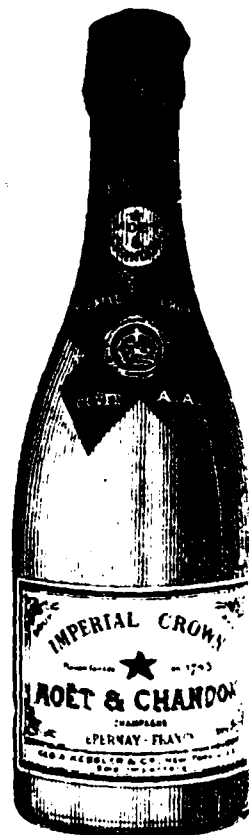
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