THE DECLINE OF CAVALRY
1900-1918

A Study of the Debate over Changing the Armament and Tactics of Cavalry

by

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Tremendous changes have occurred in warfare since the turn of the century. Completely new branches of the military have been created and old established branches have been abolished or drastically altered. In 1900 few, if any, military men would have believed such a revolution could occur. The demise of the cavalry caused a great debate in most armies of the world. Cavalrymen could not bring themselves to admit that the new weapons and machines being introduced were far superior to the horse cavalry. This fear of change was one of the greatest obstacles to the cavalry, even in the years when the horse still played a vital role in the army.

The cavalry in 1900 had reached a critical stage in its development. The introduction of new weapons made the traditional tactics and armament of the service of less and less value. A large proportion of cavalrymen rigidly adhered to the established methods of the armes blanches. Shock tactics and steel weapons had served the cavalry effectively for centuries, and these officers believed that they would continue to be effective. Others, more conscious of the demands made by modern war, saw that the cavalry, to survive, had to change both its tactics and armament.

The purpose of this thesis is to analyze the arguments over tactics and armament put forth in the debate during the decade and a half before World War I. These were the critical
years for the cavalry, years which decided its fate. This investigation is restricted primarily to the military argument and is not concerned with ideas of civilian and government leaders. My sources are confined principally to those dealing with tactics and weapons. No attempt has been made to touch on arguments about appropriations for cavalry, the size of the cavalry in various armies, the remount supply, or other issues concerning the cavalry. To do this would expand the work far too much.

The thesis is arranged in four chapters, a conclusion, and an appendix with definitions to aid the reader. The first chapter gives a brief survey of nineteenth century cavalry to provide a background for the period discussed in the following chapters. Chapter II is a summary of the tactics and weapons of the service about 1900, at the time when the debate was gaining prominence. The great debate over the role of the cavalry in modern war and its requirements to fulfill this role are covered in Chapter III. The last chapter gives a brief account of the failure of cavalry in World War I. This final chapter is included to show how poorly the mounted service was prepared to match machine guns, aircraft, tanks, barbed wire, trenches, and numerous other inventions of modern war. In the conclusion I have tried to bring together the reasons the cavalry failed in modern war and to show what new weapons took its place.
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CHAPTER I

NINETEENTH CENTURY CAVALRY

During the forty years after 1815 the cavalry of Europe suffered an almost complete stagnation in tactics and armament. In the United States the mounted service did make some advance but this was largely the outgrowth of conditions peculiar to that country. Not until the outbreak of the Crimean War did even a suspicion arise that alterations were necessary for the cavalry to maintain its role in the army. The last period of revolutionary change had occurred during the years when Frederick the Great and Napoleon I ruled their respective countries.\(^1\) Frederick laid great stress upon the training of his troopers and he forbade the use of firearms by the cavalry.\(^2\) To compensate for this the Prussian king created an auxiliary force of highly mobile artillery which could follow all the movements of the cavalry, and by camping and fighting with the horsemen, would be able to keep the enemy's batteries and infantry at a distance.\(^3\) The attachment of the horse artillery permitted the cavalry to be a

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1It was the Swedish king, Gustavus Adolphus, who reintroduced the principles of cavalry tactics made famous by Alexander and Hannibal. He made his cavalry depend upon the keen edge of the sword, and the shock of charging men and horses. Colonel George T. Denison, A History of Cavalry from the Earliest Times (2nd ed., London, 1913), 210-11.


3Denison, History of Cavalry, 261.
purely offensive arm using only the saber or lance for weapons. 4

The Napoleonic wars marked the first step in the gradual decline of the cavalry. The power of cavalry was all in its offensive action—as Napoleon said, "in its momentum." 5 As organized by Frederick the horsemen had defensive power only when accompanied by horse artillery. 6 To overcome this deficiency Napoleon used dragoons with the advance and rear guards, on the flanks, and in reserve so that some defensive power was available. 7 Napoleon used his cavalry well and saw its need in battle. The cavalry followed up a victory and prevented a defeated army from rallying. 8 Most important was its use as a strategic force for observation and protection of the main force. 9 Napoleon also recognized that coordination of the three arms was expedient, since without cooperation the individual units were correspondingly weakened. 10

Napoleon seldom used the massed charge against unshaken infantry as had been done in earlier times. A charge was to be made only against the enemy's flank, if possible while the front was still engaged. 11 The military writers of the years

4Maguire, Development of Tactics, 28-29.
5Conrad H. Lanza, Napoleon and Modern War (Harrisburg, Pennsylvania, 1943), 115.
6Ibid., 68. 7Ibid., 114. 8Ibid., 67.
9"Cavalry," Encyclopaedia Britannica (15th ed., 1957), V, 70; This edition will be used hereafter.
10Lanza, Napoleon, 61. 11Ibid., 65.
after 1815 were dimly aware that a new factor was coming to
govern the rules of war--fire power. Carl von Clausewitz
wrote that "military history and a glance at the nature of
our arms show that absolutely to despise the use of fire in
the attack is an absurdity." The cavalry was not to be
wasted by reckless riding into heavy musket and artillery
fire. Again Clausewitz urged that the cavalry should not be
employed until the enemy had "suffered considerably by the
action of infantry and artillery." In the interim it was to
be placed in reserve behind the infantry.

Another outstanding writer of this era was Antoine
Henri Jomini, the interpreter of the methods of Napoleon.
Jomini was not convinced that the cavalry had great potential.
He explained that "the principal value of cavalry is derived
from its rapidity and mobility" and its principal objective
is "to open the way for gaining a victory or to render it
complete." Like Napoleon, he acknowledged that a general
attack of cavalry against a line in good order had little
hope of success. If such an attack were supported by infantry
and artillery, the chances were vastly improved. These

12 General Carl von Clausewitz, On War, tr. by Colonel

13 Ibid., III, 195. This location for the cavalry was
not the rule in warfare after 1860.

14 Antoine Henri Jomini, Jomini and His Summary of the
Art of War, ed. by J. D. Hittle (Harrisburg, Pennsylvania,
1947), 19.

15 Ibid., 151.
views were being put forth in an era when mobility was still highly favored in warfare.

At the same time that Jomini and Clausewitz were writing, new advances in firearms were being introduced which would have a profound effect. The two most important for the cavalry were the cylindro-conoidal bullet which greatly increased effective range as well as the speed of loading and the percussion cap which lessened the effect of weather on weapons. Used in conjunction with rifling these doomed the massed cavalry charge, while at the same time increasing the offensive power of the infantry. The Crimean War brought some awareness of the potential of these changes, but, on the whole, few lessons were learned.

By 1860 the secret of tactics with the improved weapons consisted of the interchange of fire-fighting and shock.16 A majority of military leaders were unaware of this fact which resulted in many exceedingly costly blunders and lost opportunities during the American Civil War. As J. F. C. Fuller has pointed out: "The rifle bullet utterly changed tactics, and unless this is understood all knowledge is a blank, worse—a danger."17 The American Civil War proved the dangers of misunderstanding, as the disastrous results of the frontal assaults at Fredericksburg, Gettysburg, and Cold Harbor vividly told.

16 Maguire, Development of Tactics, 54.

The cavalry underwent a more complete transition than either the artillery or the infantry during the conflict. A new mode of fighting for cavalry dominated the scene: dismounted fire action. The use of dismounted fire tactics by the American forces caused considerable comment throughout the world, and had much to do with beginning the controversy about the proper tactics and weapons for the mounted service.

The United States Cavalry was never organized along Continental lines. This was largely the result of the Indian Wars on the plains where shock action was practically impossible because of the irregular nature of the fighting. Traditionally American cavalrymen were either dragoons or mounted riflemen armed with carbines and, after 1850, Colt revolvers. There even seemed to be an utter contempt for the sword. This preference for firearms over steel weapons was clearly evident during the Civil War, especially in the South. The only force placing implicit confidence in the sword was a small force of regular United States Army Cavalry. One Southern general told of the contempt of the Confederate infantry for the sword.

When these Union regulars would charge with their sabers in hand, the infantrymen would cry, "Here, boys, are those fools coming with their sabers; give it to them!" Many instances can be found of cavalrymen who would rather themselves rely upon their firearms than on their swords, but there is no war in history in which the arme blanche did not have a significant

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18 Denison, History of Cavalry, 360-61. No doubt the actual language used was considerably stronger than this.
moral effect until the American Civil War.\(^\text{19}\)

In the first months of the war, both sides neglected to make the best use of their cavalry. They failed to combine coordinated cavalry action with infantry operations as Napoleon had done. The Civil War generals did not understand that the principal duty of the cavalry was to reconnoitre and not to fight. During the first two years of the conflict both sides often sent their cavalry on raiding operations when battle was imminent. If these raids had been directed against the immediate rear of the enemy's forces, their tactical value might have been very great, but instead they were usually too distant to affect the outcome of the battle.\(^\text{20}\)

Before long many cavalry leaders, especially in the South, were becoming aware of how useful dismounted tactics could be. General John H. Morgan, C. S. A., who had no professional training as a soldier, was one of the first to see the value of a force of mounted riflemen, and to use them so as to reap the benefits of modern firearms.\(^\text{21}\) Two other excellent Confederate cavalry generals were J. E. B. Stuart and Nathan Bedford Forrest. Their work is a good example of the coordination of swords and firearms in a cavalry fight.

\(^{19}\)Ibid., 366. Erskine Childers believed that terror of cold steel faded by 1866. Erskine Childers, War and the Arme Blanche (London, 1910), 163.

\(^{20}\)Fuller, Generalship of Grant, 59-60.

\(^{21}\)Denison, History of Cavalry, 360.
Forrest and Stuart knew how to combine the effect of fire and shock, as well as when to dismount and when to strike on horseback.\textsuperscript{22} The raid was brought to a high degree of perfection under Stuart's leadership, as shown in his raid of June, 1862, through Virginia. Two things made this raid successful: he got the desired information and captured huge quantities of stores. The cost: only one man.\textsuperscript{23}

At the same time that men like Stuart and Morgan were making the Confederate cavalry such an effective arm, the Union was slowly beginning to improve and rearm its mounted soldiers. In August, 1861, the dragoons and mounted rifles were merged into the cavalry.\textsuperscript{24} The North, instead of training their troopers always to meet the foe mounted, placed much emphasis on developing dragoon tactics. Armed with the Spencer repeating carbine and using revolvers for close-quarter combat, the Union cavalry by 1863 was indeed a formidable opponent. It was Buford's cavalry, using these tactics, that delayed A. P. Hill near Gettysburg, giving the Army of the Potomac time to come up.

The Southern cavalry did not neglect these new methods either. By late 1863 Stuart was employing sharpshooters. These men were selected because of their courage and good

\textsuperscript{22}General Frederick von Bernhardi, \textit{Cavalry in War and Peace}, tr. by Major G. T. M. Bridges (London, 1910), 110.

\textsuperscript{23}Captain P. T. Hayne, \textit{Lectures on Cavalry} (Fort Leavenworth, Kansas, 1915), 99.

marksmanchip. They learned how to advance as skirmishers, how to cope with the enemy either mounted or dismounted, and how to operate as a separate unit. 25

One of the most interesting phenomena of the war was the fact that a majority of the European observers seemed to dismiss these new cavalry tactics as aberrations arising out of the peculiarities of the American soldier and the type of terrain. 26 Here, as in the Crimean conflict, the "experts" failed to understand that the true cause for these new tactics and new armament went much deeper than obvious differences such as the American temperament and the American terrain. The basic factor was the tremendous increase in fire power, necessitating changes if the cavalry was to survive.

A few Europeans did perceive what caused the change. Sir Henry Havelock, a British observer, noted that in 1861 the American cavalry had simply been a poor model of its European counterpart. The devastating effect of the new weapons in the early battles made it evident that increased firepower had made the old tactical methods obsolete. A new order for cavalry would have to be based on fire power. 27 The Comte de Paris preferred a combination of fire and shock tactics to the exclusive use of steel weapons. 28


27 Ibid., 109, 111.

28 Ibid., 84-85.
The new type of cavalry could act more independently than that relying only upon the *arme blanche*. The strategic raid was an outgrowth of this independence. Otto Heusinger, one of the German observers, considered the Union cavalry an "excellent service." He believed it was a great advantage to be equipped so lightly and to possess a repeating rifle. Such a force had the added advantage, he continued,

of being able to be sent quickly to a fixed point without tiring a man through great exertion, and the usefulness of this arm was proved first-rate, especially in the case of Sheridan's march toward Richmond, where he destroyed railroads, bridges, and canals in the enemy's rear and threw the inhabitants of the city into considerable consternation.

General Morgan was one of the first to utilize dismounted tactics. His tactics were described as follows:

If the reader will only imagine a regiment drawn up in single rank, the flank companies skirmishing, sometimes on horseback, and then thrown out as skirmishers on foot, and so deployed as to cover the whole front of the regiment, the rest of the men dismounted (one out of each set of four and the corporals remaining to hold the horses), and deployed as circumstances required, and the command indicated to the front of, on either flank, or to the rear of the line of horses, the files two yards apart, and then imagine this line moved forward at a double quick, or oftener at a half run...

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29 Denison said that Morgan had been credited with being the innovator of the far-reaching raid. Although it probably was an original idea with Morgan, Denison continued, the same thing was used by Russian generals Tchernicheff and Tettenborn against the French army in 1813. Morgan's raids were on the same principle as those of Tchernicheff except that Morgan used no infantry and did have a couple of pieces of artillery. Denison, *History of Cavalry*, 364.


During the last two years of the conflict the Union cavalry was generally more effective than the Confederate cavalry, in part because of better weapons and better mounts. In May, 1864, just before his death, Stuart commented that Sheridan's cavalry fought better dismounted than the Union infantry.\(^{32}\)

One English officer, Colonel Patrick MacDougall, had a bit more insight into the future of the cavalry than he knew. He felt that the great battles of the future would be decided principally by artillery. Cavalry would play only a secondary role "for its only power lies in the offensive, and it cannot act at all unless in motion."\(^{33}\) Although cavalry now had defensive power in its rifles and carbines, allowing it to act when not in motion, MacDougall's belief in artillery proved well-founded in the years 1914-1918, when the cavalry was of little value.

The new weapons and cartridges gave the first blow to saber cavalry. These new weapons even gave the men renewed confidence in their own capabilities to fight. General James H. Wilson, a Union cavalryman, took note of this fact.

Not until the closing days of the war did we wake up to what our experience . . . ought to have taught us. My division was the first . . . in the Army of the Potomac that had first-class repeating arms. Green regiments, that you couldn't have driven into a fight with old arms, became invincible the very moment that good arms were placed in their hands . . . . There are only two arms that cavalry should use in modern warfare,—the repeating magazine gun, either rifle or carbine, and the revolver.\(^{34}\)

\(^{32}\)Freeman, Lee's Lieutenants, III, 421.

\(^{33}\)Luvaas, Military Legacy, 107.  

\(^{34}\)Ibid., 5.
A survey made in 1867 on the merits of the repeating weapons came to a similar conclusion. It noted that a magazine of several rounds (in this case seven) gave "great steadiness to troops" and prevented the "demoralization which often follows a volley when men have to reload" under battle conditions. These were the opinions of men who had seen the value of firepower under battle conditions.

In Europe, however, the idea of arming the cavalry exclusively with rifles or pistols gained little support. The European military on the whole ignored the lessons of the Civil War for many years. Ardent du Picq, a French colonel, wrote a work on tactics which illustrates the European reaction to the Civil War. Du Picq recognized that cavalry could not successfully attack unbroken infantry, but at the same time he claimed that rifled cannon and accurate rifles did not change cavalry tactics at all. The Europeans seemed to be seized by the delusion that any alteration would injure the cavalry. One of du Picq's statements is an example of this attitude: "The cavalry has a rifle for exceptional use. Look out that this exception does not become the rule. Such a tendency has been seen."37

37 Ibid., 195.
Thus the war between France and the German states saw the cavalry used in largely the traditional manner. Both armies attempted to use their new high-velocity breech-loading weapons in conjunction with the tactics of Napoleon. General Sheridan, an observer on the German side, noted that the cavalry could not gain outstanding success and more often was repulsed with heavy losses. At Mars-la-Tour the charge of the Germans was an exquisite stroke and a brilliant feat on the part of the troopers. They sacrificed a third of some regiments to stop the French infantry. "But," as T. Miller Maguire points out, "here lies the difference between this charge and the great Cavalry charges of former days, that the latter decided the victory." Yet the very success of the Prussians in 1870 blinded many to the faults of the campaign, and greatly aided those who favored the arme blanche.

After the Franco-Prussian War most European nations gave little thought to bringing their cavalry up to date in order to meet better the conditions of modern warfare. Only

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38 R. Ernest Dupuy and Trevor N. Dupuy, Military Heritage of America (New York, 1956), 332.
40 Maguire, Development of Tactics, 75.
41 Haig noted this effect of the German victory. Major General Douglas Haig, Cavalry Studies (London, 1907), 102. Edwards thought that the result of the war was to cause an undue emphasis on the offensive. All military teaching by 1900 was on the side of the initiative, whereas, Edwards pointed out, Wellington's great weapon had been the defense. Major F. H. Edwards, The Defence and Defensive Positions (London, 1902), 7-8.
the cavalry of the Russian army seemed to have a large group of officers who favored a greater emphasis on dismounted tactics than was being given. This group of the officer corps constantly advocated the need for a change in the equipment and training of cavalry as it existed in the 1870's. These men took the American cavalry as the model for future wars. These Russians visualized the cavalry as a combination of all three arms, capable of any kind of action, and equipped for the greatest possible mobility.

Yet when the Russo-Turkish War broke out in 1877, the Russian cavalry did not show that it had received any benefits from these officers. The war provided no real lessons in cavalry operations, largely because the war was conducted so poorly on both sides. When the Russians did rely on dismounted action it had negligible results.

With the conclusion of the Russo-Turkish War there ended a rather curious period in the history of the cavalry. G. F. R. Henderson described it as follows:

The climax of incompetency may be said to have been reached during the cycle of European warfare, which began with the Crimean and ended with the Russo-Turkish conflict of 1877-1878. The old spirit of dash and daring under fire was still conspicuous, discipline and mobility were never higher. The regiments manoeuvred with admirable precision at the highest speed, and never had great masses of horsemen been more easily controlled. And yet,

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42 Luvaas, Military Legacy, 113.
43 Maguire, Development of Tactics, 90.
in the whole history of war, it may be doubted whether
the record of the Cavalry was never more meagre.44

By the late 1880's and after there was a gradual
awakening to the necessity of making some concessions to
modern warfare. Even the most reluctant cavalrymen acknowledged that dismounted tactics might be of some value. There were some, like Colonel Denison, who held that these were the only tactics that should be used. He cited the action at Five Forks, Virginia, and the pursuit of Lee's army in April, 1865, as excellent examples of effective dismounted action. General Wilson had used his cavalry in the firing line at the battle of Nashville. Thomas Van Horne thought that Wilson's use of cavalry might be the beginning of new fields of action for the mounted service.45 Wilson, himself, was a strong supporter of the new type of cavalry. He would have used this cavalry in the following manner:

To make a proper use of cavalry, you must get it into such a position that it can assail the flank or rear of an enemy, or operate upon his communications with effect. If I were called upon to command a force of 60,000 men, with authority to organize it as I pleased, I would have at least 20,000 on horseback. By using the mounted force to assail the flank and rear of the enemy, I should expect to conduct a more successful campaign than could be done by any other possible means in these days. The scattering of cavalry promiscuously along the front of an army is no longer necessary. Of course you must use cavalry to find


out where the enemy is, and to gain early information of his movements, but a few squadrons can do it as well as a whole division. 46

The men upholding this position claimed that the cavalry had derived greater benefit from the new weapons than had any other arm. 47

Between the two extremes were those who accepted the use of dismounted tactics when necessary, but still believed that shock action remained the raison d'être of the cavalry. Finally, there were the intransigents who looked with disdain upon the mere thought of dismounted fighting. The German service, for example, was more sympathetic with this group than any other. It used dismounted action only as an expedient and was incapable of being completely independent in battle. 48 As one German author wrote, "dismounted fighting will and must be an unwelcome expedient and more or less opposed to the nature of the arm." 49

In the last five years of the nineteenth century discussion of the proper role for the cavalry became increasingly prevalent. Almost all had now admitted that under some battle conditions dismounted fire action would be advisable. Many armies had equipped their mounted soldiers with carbines.

46 Fuller, Generalship of Grant, 369.
47 Denison, History of Cavalry, 432; Luaas, Military Legacy, 90.
48 Nagyire, Development of Tactics, 90.
49 Ibid., 89-90.
Even the training manuals included brief sections devoted to
dismounted tactics. Some had organized separate regiments of
mounted infantry to supplement the deficiencies of the arme
blanche. But still, the cavalry of every great European
army relied principally upon shock action.

The cavalry of 1900 was thus trying to follow two
paths simultaneously at a period in its history when agreement
on change was more necessary than ever before.
By 1900 cavalry was confronted with a serious problem, one which constantly faces all military services. Because tactical principles depend upon the effectiveness of the latest weapons, the military has continually to modify its plans to keep abreast of new developments in ordnance. The magazine rifle, smokeless powder, the machine gun, rapid-firing artillery, and other new inventions had been or were about to be adopted by all the major armies of the world. Could the cavalry continue following the established pattern in tactics and armament? Or must it attempt to alter its methods to adapt more effectively to these new inventions for war? Upon these basic questions depended the future of the arm. The concessions that had been made were of small consequence. The principal weapon of the service was still the saber or lance, except in the United States where firearms took precedence.

To comprehend the arguments put forth in the debate over the proper role of the cavalry, a portrait of the service in 1900 is essential. High mobility still remained the cavalry's paramount asset. Many argued that the horse was the first weapon of the service, beside which all else was only a means to an end. The horse was the basis of cavalry tactics, making possible bafflingly swift attack.¹ According

¹Major C. E. Callwell, The Tactics of Today (Edinburgh,
to this school the infantry derived its strength from fire power whereas the cavalry's strength came from the size and speed of its horses.  

Another quality vital to the mounted service in mounted action was the need for initiative on the part of its leaders. This initiative had to be retained under all circumstances if victory were to be achieved. Once initiative passed to the enemy, all was lost. This spirit had to be present in all cavalry leaders because little was done without the leaders taking at least some part in an action. In some mysterious way, a large proportion of the military felt that the cavalry spirit was bound fast to the armes blanches. Here would be a major issue in the coming decade and a half.

To all economy-minded citizens, the cavalry, because of the additional expenses of horses and other equipment, was subject to considerable criticism. Improvisation in the cavalry was useless and could be dangerous. It took a long time to train properly the soldier and his horse to work together. The infantry soldier had only himself to master, but the horse soldier had to master his horse as well. This necessitated keeping the cavalry at nearly full strength

1909), 89; Asiaticus, Reconnaissance in the Russo-Japanese War, tr. by J. Montgomery (London, 1908), 147.


3Balck, Tactics, II, 139; Lieutenant General Frederick von Bernhardi, Cavalry in Future Wars, tr. by Charles Sydney Goldman (London, 1909), 115; Du Picq, Battle Studies, 184.
during peace-time, while a conscript infantry with an inactive reserve was sufficient for that branch of the army.

Since the cavalry could not be replaced as quickly as the infantry, it caused general staffs to be careful in the employment of horsemen. Only under emergency conditions were officers--staff or field—to undertake actions in which the probable losses bore no reasonable proportion to the possible results. Only a general who had an overwhelming preponderance of cavalry could allow it to be wasted in a premature or sacrificial commitment.

Two guiding principles for the employment of cavalry in war were that it must give the commander of the army both strategical and tactical liberty of action. This placed reconnaissance first in the order of the duties the cavalry was to perform. The cavalry was, in a worn phrase, the eyes of the army. The purpose of reconnaissance was defined in cavalry manuals as

to discover the enemy's plans and position . . . .
The best conducted reconnaissance is that which collects the maximum of reliable information in the minimum of time, and transmits it to the person by whom it will be utilized in the speediest manner.

There were two principal types of reconnaissance:

4 Bernhardi, Cavalry in Future Wars, 87.
5 Ibid., 19-24.
6 Keig, Cavalry Studies, 174; Bernhardi, Cavalry in War and Peace, 19; Captain Alonzo Gray, Cavalry Tactics as Illustrated by the War of the Rebellion (Fort Leavenworth, Kansas, 1910), 121.
7 A Cavalry Officer, Cavalry Tactics (London, 1897), 34.
1. Strategical reconnaissance. It was the reconnaissance of the enemy's main body while it was still far from one's own forces. This was carried out by the Independent Cavalry under its own general.

2. Tactical Reconnaissance. This was carried out by the divisional cavalry and was to protect from surprise by means of advanced and rear guards, outposts, etc.

The usual method of conducting reconnaissance was through the use of patrols—small troops which were to observe without being observed. As a general rule these patrols were not to engage the enemy unless forced. Their duty was to reconnoiter, not to fight. If forced into combat, the leader was to see that at least some of his men escaped capture.

To obtain information about the enemy, the patrols were to keep constantly in touch with the hostile army. This was accomplished by sending out several patrols far ahead of the main force to watch the enemy and to protect the main army against surprise. Behind the most distant patrols was the so-called screen. This formation was composed of several successive lines, increasing in strength and concentration from front to rear, with the intervals between the most advanced patrols allowing them to keep in contact with one another. Those favoring the use of screen tactics claimed

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9Cavalry Officer, Cavalry Tactics, 48; Wingfield, Lectures to Cavalry Subalterns, 26-29; Captain P. T. Hayne, Lectures on Cavalry (Fort Leavenworth, Kansas, 1915), 6. Officers' patrols were also used for reconnaissance. Their small size permitted them to move secretly and expeditiously and the officers were better trained to gain important intelligence.
that a screen had this effect on the enemy forces: "It paralyses all movement, renders impossible concentration, and is the negation of all activity."\textsuperscript{10} Opponents regarded such tactics as defensive, passive types of action, contrary to the spirit of the service.\textsuperscript{11}

The critics of the screen believed that the only way to prevent the enemy's cavalry from observing was to drive it from the field, thereby depriving the hostile cavalry of the power of breaking through the outposts to the main body of troops. Thus a second fundamental duty of the cavalry was to seek out the hostile cavalry, fight it, defeat it.\textsuperscript{12} This task, successfully executed, would allow the patrols to carry out their duties unhindered, and at the same time permit the cavalry to retain its offensive spirit. With his cavalry driven from the field, the enemy was exceedingly vulnerable because his horsemen could not prevent observation and his own knowledge was severely curtailed. He would be in Lee's situation on the way to Gettysburg—blind and confused.

Behind the screen came the advanced guard of the army,

\textsuperscript{10}Cavalry Officer, \textit{Cavalry Tactics}, 35. The idea of the screen first appeared in Germany in the Field Service Manual of 1908. Bernhardi, \textit{Cavalry in War and Peace}, 65. Hayne believed that the "offensive screen is based on the theory that if you can decisively defeat and drive back the main body of the enemy's cavalry and keep it back his patrols can be kept from getting information." Hayne, \textit{Lectures on Cavalry}, 33.


\textsuperscript{12}Bernhardi, \textit{Cavalry In Future Wars}, 30-31.
which usually had a large proportion of cavalry. This combined force was primarily intended to cover the march of the main body, and to prevent unnecessary delays by driving back small detachments of the enemy and by clearing any obstacles that might have been placed in the way of the advance. It was also to provide warning of the approach of the main force of the enemy in time to deploy for battle.  

Whenever an army was bivouacked or entrenched to meet the enemy in battle, an outpost system was established to prevent surprise. It consisted of a continuous line of either vedette or cossack posts within sight of each other to keep alert for the approach of the enemy. These posts were formed from a picket placed in the rear to support them. The cavalry, by virtue of mobility, usually performed this service.

During battle the cavalry generally retired to the flanks to make way for the infantry and artillery. On the flanks the troopers were to guard against surprise, to keep back the enemy cavalry, and to be prepared to exploit any advantages or plug any gaps in the line.

When the battle was over the cavalry again went to work. If the army were victorious the cavalry was to launch

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13 Cavalry Officer, Cavalry Tactics, 16; See also Captain Maurice Loir, Cavalry, tr. by British General Staff (London, 1916), 48.

14 For definitions of cavalry terms and strength of cavalry units see Appendix.

15 Bernhardi went even further. He believed that the horsemen should be on that flank on which the offensive action would be sought and which in defense would be attacked by the enemy. Bernhardi, Cavalry in War and Peace, 194.
a fast and furious pursuit, hitting the enemy everywhere, and especially where he was weakest. A pursuit successfully executed often brought a greater victory. In a pursuit prisoners and impedimenta were always secondary. If the combat ended in defeat, the horse soldiers set about at once to prevent the enemy from exploiting his success. The cavalry, having been posted outside of the main action, was usually relatively fresh and might even be able to catch some advancing infantry unawares. Often the only thing which prevented defeat from degenerating into disaster was the rearguard of cavalry.

The use of the cavalry for strategic raids brought considerable disagreement. Raids had been used very successfully during the American Civil War, but many cavalrymen still maintained that the cost of raids outweighed their effects.

The independent cavalry, under separate command, was the force which did the reconnaissance and established the screen. Its function was to clear the field of the enemy and to operate against his flanks and rear. In battle, the independent cavalry was to assist in bringing about a decision

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16 Bernhardi, Cavalry in Future Wars, 88. Hayne pictured the ideal pursuit as one in which the infantry and artillery were directly in the rear of the enemy, while all available cavalry and horse artillery traveled on parallel roads to harass the enemy's flank and, if possible, get in front of him. Hayne, Lectures on Cavalry, 40.

17 Cavalry Officer, Cavalry Tactics, 32-33.

18 Ibid., 37.
on the field. The independent cavalry was most effective when concentrated in a large body, rather than scattered indiscriminately along the line of battle. In the Russo-Japanese War the breaking up of large detachments into small ineffective units was a common fault of the Russian command. The divisional cavalry was primarily concerned with protecting the infantry divisions to which it was attached.

During this period there was still some distinction among the types of cavalry soldiers like the cuirassiers, dragoons, hussars, and others. But this tradition, while maintained in name, gradually passed. The cuirassiers had discarded their highly polished breastplates by 1914 and most units carried either rifles or carbines. Troops designated primarily for scouting were more lightly equipped than other cavalry. These scouting troopers had light armament and equipment, similar to that of hussars, and were mounted on small swift horses. Cuirassiers, uhlans, and lancers were large men mounted on heavy horses for shock action.

To accomplish the missions assigned, the cavalry had a rather varied armament. The two oldest weapons were the lance and the saber which comprised the arme blanche. They also embodied the cavalry spirit, which required that all combat be personal. By the beginning of the twentieth century a controversy had begun over the merits of the lance and the sword as the proper arm for the service. This was in

19Balck, Tactics, II, 12.

20Cavalry Officer, Cavalry Tactics, 124.
addition to the more basic question of the merits of dismounted fire tactics versus mounted shock tactics. The supporters of the lance maintained that it was far superior to the saber both in shock action and during a pursuit, although somewhat less useful in a mêlée. These men believed that this problem could be avoided by bringing about the decision by the force and cohesion of the shock at the moment of impact. This, they said, would not allow the action to result in a mêlée. 21 Many armies had discarded the lance during the nineteenth century. The Austrians did so as early as 1863, the French in 1871; the Russian regular cavalry (not the Cossacks) followed in 1884. But the proponents of the lance were able to get it readopted in Germany after it had been discarded, and some French units also were armed with the lance in 1914. 22 Those favoring the lance believed that its disadvantages in woods, while dismounted and while jumping, could not outweigh its advantages. 23 A British critic urged retaining the lance and carbine and discarding the sword except possibly for hussars. 24

Nevertheless, the cavalry of most nations retained the saber, but not all adopted the lance. The American cavalry had seldom used the lance. The sword and lance were carried into World War I where the argument was finally settled.

21Dolck, Tactics, II, 163.
22Ibid., 6-8. 23Ibid.
Other personal weapons of the cavalry raised eyebrows and caused veterans to shake their heads. Many nations were either equipping their horsemen with carbines or were considering doing so. In 1900 most cavalrymen in Europe still looked upon the carbine primarily as a defensive weapon.25 Others were not so sure about this restriction:

The cavalry trooper attaches an altogether exaggerated importance to the charge and the clash of steel . . . . The progress in armament which has taken place of recent years has rendered a lancer or hussar, who regards his carbine as little better than an encumbrance, an anachronism.26

The supporters of fire tactics argued that long-range volleys were as effective as, if not more effective than, steel when pursuing a defeated foe, although cavalry should still be trained in skilful wielding of lance and sword. The difference was that now the recruits were to be taught that the use of firearms on foot was the principal means of offense and defense for cavalry.27 The opposition answered with this argument:

"To the cavalry speed is what fire is to infantry, and to its power of rapidly striking is due its moral effect on the other arms."28

25 Bernhardi, Cavalry in Future Wars, 49.
26 Callwell, Tactics of Today, 88.
27 Ibid., 88, 129. A British writer of 1900 believed that the cavalry had to be armed either with a rifle or a more effective carbine, a view taken by many in the next decade. "Concerning Our Cavalry," Blackwood's Edinburgh Magazine, CLXVII (June, 1900), 779.
28 Cavalry Officer, Cavalry Tactics, 80.
Some nations also armed all their horsemen with revolvers—notably the United States. This weapon, however, gained little favor in Europe, where mounted formations for the charge made the use of the pistol dangerous. In Europe only the officers and non-commissioned officers carried side arms.

Before the introduction of small arms into the cavalry service the only fire power came from the horse artillery. The advent of firearms for cavalry did not decrease the value of the horse artillery. Mobility allowed the guns to push ahead with the column and to aid in seizing advanced positions. In reconnaissance and with advance guards it could also be exceedingly useful. Artillery gave the cavalry confidence, and a few rounds of shrapnel thrown into a village or wood usually disclosed whether it was occupied or not. Mobility was the most vital characteristic of the horse artillery; to be of maximum value it had to keep up with the cavalry without slowing the march.

The guns were relatively short-range pieces whose weight allowed the teams to pull them fast enough to keep pace. Their role always was to support the actions of the cavalry, especially when the troopers were dismounted. The

29 Callwell, Tactics of Today, 116-17.
30 Cavalry Officer, Cavalry Tactics, 38.
31 Major E. S. Hay, Guns and Cavalry (Boston, 1896), 3.
32 Ibid., 5-6.
correct target for the guns was the hostile cavalry, not the enemy horse artillery. Shell fire landing in the hostile ranks generally resulted in considerable confusion, thereby facilitating the defeat of the enemy. The only time that the enemy guns were the proper target for the artillery was when the two bodies of cavalry made contact. The hostile guns remained secondary because if the enemy cavalry were defeated his artillery had either to retire or be captured. It was also advisable for all the guns to be held together in one mass and placed on a flank. This allowed more to be accomplished by their fire, and they were less likely to cause interference with the movements of the cavalry.

The cavalry was never to permit itself to be influenced in its movements by the position of its own artillery. The guns were to adapt themselves unconditionally to the movements of the horsemen. Because he would be far out of touch with the cavalry commander during combat, the artillery leader should always be prepared to act upon his own initiative and responsibility.

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34 May, Guns and Cavalry, 52; United States Field Artillery Manual, II, 45.

35 Bernhardi, Cavalry in Future Wars, 101.

A relatively new weapon, the machine gun, was being assigned to the cavalry units in these years. Its value in modern war was still unknown. A compact take-down model, like those developed by John Browning and Hiram Maxim, had not yet appeared for general service. This was a typical comment on the value of the guns: "... in the case of machine guns we have to discount the confident assertions of enthusiasts or inventors." As occurred when repeating rifles were introduced, the conservative military mind worried about the potential waste of ammunition with the use of these automatic weapons. Here again, the military neglected the secret of success—superior fire power.

Horse artillery and machine guns were especially valuable in rear guard actions. They could open fire at long range from successive positions, thereby covering retirements of cavalry without becoming engaged in an artillery duel. On the march with a large force in open country, the batteries would often march behind the reserve troopers. In more difficult terrain the guns traveled immediately in back of the leading regiment.

37 Machine guns were sometimes classified as artillery in this period because they were mounted on artillery-type carriages. This policy was discontinued with the development of smaller and lighter weapons.

38 May, Guns and Cavalry, 195. 39 Ibid., 189.

40 Cavalry Officer, Cavalry Tactics, 27.

41 Ibid., 24.
In 1900, as the preceding paragraphs illustrate, the armament of the European cavalry did not equip it adequately for use in extensive dismounted action. Cavalry training as a rule (except in the United States) did not place much stress on marksmanship or on proper dismounted tactics. In Britain, especially, these deficiencies in training were glaringly revealed in the Boer War. A British officer writing in 1896 exemplified this spirit perfectly even though he was describing the reforms of Frederick the Great:

Fire worship was still the religion of cavalry soldiers, and he [Frederick] found his squadrons still following the fashion of the previous century, and waiting to receive an attack in position, and then, having poured in a volley, charging to take advantage of its effect. All the dash and enterprise which should distinguish the most mobile arm were therefore gone, and the dragoon, or even the cuirassier, had become a bad trooper and even a worse musqueteer. The genius of the Soldier King saw that such tactics took away all the characteristics that made cavalry valuable, and he set himself to work energetically to destroy the hideous error that was sapping the efficiency of his regiments.

It was a cardinal sin for the cavalry to act on the defensive. The regulations concurred with this opinion. They stated that the power of the cavalry lay in the impetus derived from its speed, and that if a unit voluntarily awaited an attack it courted "disaster."

The unique aspect of the mounted cavalry combat was

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42 Luwaas, Military Legacy, 159.
43 Kay, Guns and Cavalry, 29.
44 Cavalry Officer, Cavalry Tactics, 78.
the comparatively short time in which a decision was reached. Because of the speed at which the charging horsemen moved, one side was generally broken in the charge. Another peculiarity was that the side which brought its reserve into the fight last was most likely to be successful. This fact was in line with the offensive nature of the arm. Thus it was considered essential for cavalry always to keep reserves at hand, for cavalry immediately after a success was most easily overcome because of its temporary fatigue and confusion.

Many experts also held that cavalry should never surrender, at least not in open country. This was one of the best established maxims of the force. Cavalry was always to attempt to cut through, or, if that were impossible, to scatter to elude pursuit. 45

The essential elements necessary for mounted action were maneuverability and speed. In revisions of the drill regulations, the object in view was generally to increase maneuverability by the adoption of less complicated and more sensible formations. The charge at a gallop was the method employed in mounted combat. The charge had the best chance for success if executed in proper formation, the trot maintained as long as possible, then full gallop to shock and ride down the enemy. 46 Delivering the charge with closed


46 Balck, Tactics, II, 147. General J. E. B. Stuart advanced to the attack at a walk, at 200 paces from the enemy began a trot, and at 50 paces started a gallop which progressively increased in speed. Ibid.
ranks, so that the effect of the shock would be more intense, also promised greater results. As Colonel William Balck phrased it, "mass and velocity are the factors upon which success depends." Applied on a flank this mass and velocity usually produced the best results. Much credence was given to the idea that cavalry conquered "merely by its appearance" especially against troops greatly fatigued or already broken.

The formation most widely used for the charge was the line, because it was the only one in which the cavalry could charge in close order without danger to the rear ranks such as might occur in column. The regimental column (often called "mass" in regulations) was employed principally as an assembly formation. It was to be avoided on the battlefield because of its vulnerability to artillery, because its width could not be concealed, and because of the dust it raised. The American cavalry was one of the few which still used the single-rank

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47 Balck, Tactics, II, 138. Some believed very strongly in the moral effect produced by steel weapons, as shown by this passage: "Swords were to be drawn before the formation of line. The inspiring effect of drawing swords before a meditated attack should not be overlooked." Cavalry Officer, Cavalry Tactics, 80-82.

48 Du Picq, Battle Studies, 198-99.

49 Balck, Tactics, II, 56; Cavalry Officer, Cavalry Tactics, 88-89. In the Civil War numerous formations were used in the charge: column of fours; column of squadrons; close column of squadrons; line of regiments, each in column of fours; brigade in column of regiments, each in line, making three lines of equal strength; division formed in line of regiments, each in column of battalions, also making three lines of equal strength. The formation used depended upon the terrain, battle conditions, strength of the unit, and other local factors. Gray, Cavalry Tactics, 44-45.
formation for the charge. Most European countries employed the line formation with reserve lines ready to join the combat if needed. These other lines when in reserve were not to join in the combat unless absolutely necessary. The British regulations of the period stipulated that 600 yards should be the normal distance between the lines. A common formation for a regiment in the American service was a line consisting of four troops. Of the remaining six troops of the cavalry regiment, four troops in column formation constituted the reserve 300 paces in the rear while the other two troops were placed on each flank in column of platoons.

The mounted attack against infantry was becoming the subject of considerable debate. The question was whether the cavalry should ever attack infantry by using shock tactics, except under emergency conditions. Most experts concurred in the view that long-range weapons ruled out frontal assaults, but on flank attacks and frontal assaults against broken or

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50 In the western theater of the Civil War, the Confederate cavalry began to use the single-rank formation early in the war. General Morgan used it from the outset, Forrest soon followed suit, and General Wheeler found it necessary for the conditions under which his troops operated. The U. S. Cavalry officially adopted the single-rank in November, 1861, but the single line was not used until 1864 and then only in the west. Gray, Cavalry Tactics, 10, 12. The use of this formation was a major factor in permitting the use of the revolver in the charge.

51 Some questioned whether 600 yards was sufficient in light of the power of long range artillery or even machine guns. Cavalry Officer, Cavalry Tactics, 21. Hayne believed that since all foreign nations used the double rank formation for charges, the United States Cavalry should also adopt it. Hayne, Lectures on Cavalry, 57.

52 Gray, Cavalry Tactics, 10.
demoralized infantry there was little agreement. Against artillery the mounted attack was to be delivered on the flank whenever possible, to avoid the destructive power of rapid-fire guns and shrapnel shells.

Now that the cavalry possessed firearms, troopers could also fight dismounted. Many high officers were being persuaded—although reluctantly—that there was value in being able to fight in this manner. A few manuals stated that: "The dismounted training of the cavalry soldier should be considered of equal importance with the mounted training." But these same manuals placed definite limitations as to its use:

There is no doubt that the dismounted combat of cavalry is in future war likely to play a far greater part than hitherto, not, be it understood, in superseding the natural role of the arm, but in supplementing it, and as an exception.

The last three words should be carefully noted. Few Continental officers agreed with Colonel George T. Denison, who favored converting all cavalry to mounted riflemen, although he did find much support for his ideas in Britain. Most Continental officers still adhered to the arme blanche, as illustrated by the comment of an Austrian officer on the new Russian regulations of 1896. He was very pleased to note "that true cavalry action is again raised to the first rank,

53Cavalry Officer, Cavalry Tactics, 115.
54Ibid., 114.
55Luvaas, Military Legacy, 125.
while dismounted action no longer has that exaggerated importance previously attached to it. The British added one battalion of mounted infantry to each division, but no one seemed to be quite certain what to do with them. Yet at the same time all the nations were training their cavalry in at least the fundamentals of dismounted tactics.

In the field of dismounted action the United States again was taken as the best example by the advocates of fire action. They pointed to the cavalry of the Civil War and claimed that it conclusively proved the need for more emphasis on dismounted tactics. The one drawback to their argument was the element of time. The American war had been fought with relatively short-range weapons of large caliber using black-powder cartridges. The artillery was of short range, and machine guns had not yet been put into regular service. The Franco-Prussian War and the Russo-Turkish War also were fought with weapons which were obsolete by 1900. The only way the controversy could be settled was in a war between well-trained and well-equipped armies. Such a war was not to occur until 1914, but two smaller conflicts did offer a partial test. The Boer War and the Russo-Japanese War were to be proving grounds for cavalry described in the preceding pages.

The situation in 1900 was reviewed by a contemporary:


We do not, however, deprecate that high moral courage which animates those troops who throw themselves honourably into a hand-to-hand fight, but without proper preparation by fire there is no chance of success.  

The wars occurring between 1900 and 1918 were to show whether the cavalry could survive using the personal form of combat, or whether it would have to ride to the scene of battle and dismount to fight effectively.

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58. Naguire, Development of Tactics, 55.
CHAPTER III

THE GREAT DEBATE

1900-1914

First of the twentieth century wars which all cavalrymen eagerly watched was the Boer War (1899-1902) in South Africa. The Dutch farmers used large numbers of mounted riflemen who moved rapidly from place to place, with mobility greatly exceeding that of the British forces. The British army met these soldiers principally with infantry, and with cavalry equipped with the traditional steel weapons—the lance and the saber. The Boers, on the other hand, relied on their rifles, using their horses only to increase mobility. These tactics at first caught the British forces completely unprepared, and they were not sure just how to counter them. In the end the British had 300,000 troops in South Africa to deal with the 60,000 to 75,000 Boers.\(^1\) The necessity of employing such overwhelming numbers testifies to the effectiveness of Boer tactics.

The Boers seldom charged the enemy; if they had, their small horses would not have stood the test. Erskine Childers, an ardent supporter of dismounted fire tactics, wrote that the Boers "... were, in Cavalry parlance, 'defenceless,' in other words steelless riflemen."\(^2\) But these "defenceless"

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\(^1\) William L. Langer (ed.), *An Encyclopedia of World History* (Boston, 1952), 857.

\(^2\) Erskine Childers, *German Influence on British Cavalry* (London, 1911), 162.
soldiers raised havoc with the British; they put the Imperial Army in a bad light, and also caused demands for reform and improvements. These riflemen besieged Ladysmith and Kimberly for four months, defeated several relief expeditions, and held the offensive for the first six months of the struggle. Then, although forced on the defensive, they held the troops of the world's largest empire at bay for two more years. Most of this was accomplished with horses and magazine rifles along with some Krupp and Creusot guns.\(^3\)

When the British reorganized their forces to include a large proportion of mounted soldiers armed and trained to fight as did the Boers, the tide began to turn. The mounted elements using swords and lances were practically useless against the Boer tactics. The Boers attacked and retired almost at will, giving the *arme blanche* little if anything to charge. Only dragoon tactics could succeed, and not until the British used their mounted elements in this fashion were they able to conquer "a people immeasurably their inferior in numbers and resources."\(^4\)

Lord Earl Roberts, the commander-in-chief of the British forces in South Africa, concurred in these observations. He felt that the British cavalry failed because it did not know and had not been required to know how to use the most useful weapons with which it was armed—the rifle or carbine.\(^5\)

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5Childers, *Arme Blanche*, x.
Roberto's experiences in South Africa no doubt had much to do with influencing him in favor of cavalry trained more in the use of firearms than in the use of swords and lances.

Many tacticians, especially those who favored the use of shock action, claimed that the Boer War was only a colonial struggle which had little bearing on the type of conflict to be expected among the major powers. But less than two years after the cessation of hostilities in South Africa, a war broke out in Manchuria between two nations of considerable strength; it utilized the latest inventions in military science. The Russo-Japanese War brought home a few more lessons on how not to use and train cavalry for modern war.

The strange thing about this war was that no really large cavalry actions were fought; those that did occur were almost wholly fought with rifles. Neither side demonstrated any desire to rely on the arme blanche in battle.\(^6\) The Russians had 225 squadrons and sotnias of cavalry in Manchuria which gave them an overwhelming preponderance of horsemen. For the most part these units were formed into independent cavalry for the protection of the flanks of the army, and for reconnaissance and raids.\(^7\) But in spite of their numerical advantage, the Russian commanders violated one of the maxims of the service by failing to keep the cavalry concentrated in large groups. In the Battle of Yenka-Shah in October, 1904,

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\(^7\) Asiaticus, *Reconnaissance in the Russo-Japanese War*, 129. See Appendix for definition of sotnia and other units.
no more than 24 squadrons of a total of 149 were ever concentrated for combined action. Repeated failures because of this error had no visible effect. One factor must be remembered: the battlefields were much larger in size than those of most previous wars, making it more difficult for General Alexei Kuropatkin to keep his cavalry masses as compact as he might have liked.

The Japanese cavalry at full strength consisted of only 97 squadrons totaling about 13,000 troopers. The restricted size of the Japanese cavalry was largely due to the shortage of horses in Japan. What mounts the service did have were small and wiry. The Japanese were not expert horsemen as were a large percentage of the Russians, especially the Cossacks. Yet in spite of the obstacles, the Japanese performed remarkably well in the face of an enemy possessing superior numbers and a long-standing reputation for excellent cavalry.

The small size of the Japanese service forced some mixing of cavalry with infantry—a practice avoided in most armies at this time. Some observers believed that this use...
of mixed detachments to screen their forces prevented the Russian cavalry from using shock tactics. To compensate for the small number of squadrons, the Japanese assigned to each one some machine guns so that each squadron had fire power equivalent to that of two companies of infantry. This supplement allowed the cavalry to be independent of the infantry when necessary, while at the same time not impairing the mobility of the troopers.  

Perhaps the greatest disillusionment to the outside world was the failure of the Cossacks to do more effective work. They had been generally considered the ideal type of light cavalry, armed with carbines, accompanied by mounted artillery, and with sufficient mobility to undertake almost any type of independent action. Theoretically this gave them every facility for severing lines of communication, capturing convoys, reconnoitering, harassing columns on the march, and fighting. A French observer gave two reasons for the failure of the Cossacks: first, defective training in marksmanship; second, artillery which lacked the necessary power to be effective against villages and field entrenchments. Other observers added a third: the lack of a firm offensive spirit.


12 Asiatique, Reconnaissance in the Russo-Japanese War, 97-98.

and the resolve to sacrifice themselves in combat. 14

The Japanese used their cavalry much more effectively. From the outset they employed officer-scouts, accompanied by small numbers of men, as search patrols. Infantry was usually close at hand to lend support. The cavalry was made a mobile force relying principally upon rifle fire, and capable of being rapidly moved to any special point where support was most required. 15

On both sides raids were carried out, but with limited success. A Russian raid attempted in January, 1905, failed in its purpose, largely because the troopers were unable to break through the Japanese infantry detachments sent to halt the raiders. The most successful raid was one made by the Japanese behind the Russian lines at Mukden. The Japanese sent a weak force of two squadrons which remained undetected until very near the railroad bridge it was to blow up. Even when detected the Japanese succeeded in demolishing the bridge. The raid produced virtual panic at Russian headquarters. Russian generals became so worried that they detached 8,000 of the best Russian cavalry from the impending battle of Mukden. 16

14Wrangel, Cavalry in Russo-Japanese War, 18; Edwards, Notes on Cavalry, 64. It must also be remembered that the Tsar's best troops were in European Russia. These were kept there because the Russian military feared a war would break out in Europe. The outbreak of the abortive revolution of 1905 made futile any hope that they would be sent to Manchuria.

15De Négrier, Lessons, 39-40.

16Wrangel, Cavalry in Russo-Japanese War, 43-44.
Thus by 1906 there were concrete examples of how cavalry could be used under modern conditions. The examples were far from encouraging to those who supported shock tactics, but they were not to be easily dissuaded. It was still maintained by cavalrymen that the value of the service had not been injured as a result of the wars, only that the training and employment of the arm had become more difficult. But agreement on the lessons to be learned from the two wars went no further than this. Some critics argued that the cavalry had to be equally proficient in both mounted and dismounted tactics, while others claimed that it was impossible for cavalry to be equally effective in both.

One of the first to argue strongly for a complete change in the make-up of cavalry was Colonel George F. R. Henderson of the British Army. He spent considerable time studying the American Civil War and about 1902 concluded that "the Americans struck the true balance between shock and dismounted tactics." Henderson recognized that by 1861 fire had become the predominant factor in battle, and that the American cavalry, by adopting alterations made necessary by this, achieved more than would have been possible using the arme blanche alone. He was not in favor of having mounted riflemen attached to the cavalry to furnish fire power, but thought troopers should be trained in marksmanship. Henderson

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17 Edwards, Notes on Cavalry, 64; Asiaticus, Reconnaissance in the Russo Japanese War, 146.
18 Henderson, The Science of War, 55. 19 Ibid., 57.
believed that even against hostile cavalry there had to be a combination of fire and shock. 20

About two years later another British author, T. Miller Maguire, also advocated an increased use of fire by cavalry:

Artillery altogether, Infantry almost wholly, and Cavalry to a very great extent, make use of fire to bring about the enemy's overthrow. All movements on the battlefield have but one end in view, the development of fire in greater volume and more effectively than that of the opposing force; and although the bayonet still plays an important part, it is superiority of fire that decided the conflict. 21

He also believed that there was a necessity for adding to the offensive power of cavalry. 22

The British Army at first took the experiences of the Boer War to heart; in 1903 the drill regulations stated that henceforth the rifle or carbine would be considered the "principal weapon" for cavalry. The 1904 Cavalry Manual, issued under Lord Roberts, continued this policy of stressing the importance of firearms as well as mounted infantry. But after Lord Roberts retired two years later and others gained control, the interest in these changes waned. By 1907 two of the three existing schools for mounted infantry were abolished. Even the lessons of the Russo-Japanese War apparently had little effect. The British commanders feared that reliance

20 Ibid., 61-62, 64.
21 Maguire, Development of Tactics, 99-100.
22 Ibid., 102-03.
on the rifle would injure the so-called cavalry spirit.\footnote{Luvaas, *Military Legacy*, 196-97.}

The *Cavalry Manual* for 1907 declared:

> The essence of the cavalry spirit lies in holding the balance correctly between fire power and shock action... It must be accepted as a principle that the rifle, effective as it is, cannot replace the effect produced by the speed of the horse, the magnetism of the charge, and the terror of cold steel.\footnote{Ibid.}

This was nothing but regression to the ideas of 1900.

General Douglas Haig, writing in 1907, also argued that the cavalry had to know how to use the rifle, as well as how to charge. But he made it clear that a great success could be gained only by horsemen who had shock training.\footnote{Haig, *Cavalry Studies*, 17-18.} With this preference for the *arme blanche*, it is possible that he may have been one of those who had much to do with the return to the more traditional type of cavalry. This possibility is manifest in his statement concerning the ever-increasing role he foresaw for cavalry in future wars. Haig listed four reasons for this increased role:

1. The extended nature of the modern battlefield would give the cavalry a greater choice of cover to favor its approach.
2. The increased range and effectiveness of modern weapons and the greater length of battles would lead to moral exhaustion, which in turn will render cavalry attacks more likely to succeed.
3. Rapidity of movement for cavalry will become more necessary because of better weapons used by the infantry.
4. The small-bore rifle bullet had less stopping power against a horse than the older large bore bullets did.\footnote{Ibid., 8-9.}
Haig apparently was trying to keep the cavalry as unchanged as possible, in spite of the experiences in South Africa and Manchuria. He and others like him seem to have been in the majority in the British service.

Across the Channel, a French observer of the Russo-Japanese War, General François de Négrier, believed that the lessons of the war in Manchuria had clearly demonstrated the need for a change in the methods of cavalry if it were to play the important role in future conflicts which he envisioned. He was convinced that the most difficult part of this change would be getting the cavalry to give up its inveterate faith in traditional evolutions and outmoded shock tactics of the old warfare, and at the same time retain the spirit in dismounted fighting that existed in shock action. De Négrier favored abolishing the traditional distinctions among lancers, dragoons, hussars, and the like and then creating one single cavalry with one uniform. He felt that the cavalry would be willing to change its ways of glory, because continued adherence to the arme blanche could only lead to useless and wanton sacrifice of life. But he failed to reckon with the intransigent attitude of the military mind, the French being the most reluctant of all.

In Germany one of the leading military writers of the pro-1914 period, General Frederick von Bernhardi, had much to

27 De Négrier, Lessons, 77.

28 Ibid., 73-74. The United States merged its different types in 1861.
say about the cavalry in war. Although he had strong faith in the value of dismounted action, he maintained that combat with cold steel remained the chief raison d'être of the cavalry.²⁹ The role of cavalry in battle was to originate from a combination of the several methods of fighting and "not from its attitude towards the various arms considered separately."³⁰ But Bernhardi, like de Négrrier, seemed to be a voice in the wilderness in his own land. Other nations paid more attention to him than did his own.³¹

The most revolutionary of all the writers, however, was the British author, Erskine Childers. He was not only revolutionary, but uncompromising. In his book War and the Arme Blanche he gave the following reason for writing it: "I shall argue that the steel weapon ought to be discarded or denied all influence on tactics, and a pure type of mounted rifleman substituted for the existing hybrid type."³² The "Cavalry spirit," he believed, tended to stereotype both cavalry weapons and cavalry tactics in relation to the advances in the other arms. He concluded that the other branches of the army never had a "spirit" and that in the cavalry this term had come to be "the symbol of resistance to change."³³ He went further than most by maintaining that mixing the two

²⁹ Bernhardi, Cavalry in Future Wars, 62.
³⁰ Bernhardi, Cavalry in War and Peace, 109.
³¹ Luvaas, Military Legacy, 140.
³² Childers, Arme Blanche, 1.
³³ Ibid., 36-37.
sets of tactics was "antagonistic and incompatible." Lord Roberts agreed with Childers and the former commander-in-chief wrote the introduction to Childers' book. In this introduction Roberts said that "knee to knee, close order charging is practically a thing of the past."

Childers in some ways might be labeled an extreme nationalist, for he felt the British cavalry had nothing to learn from men like Bernhardi. Instead of depending upon foreign models the British ought to turn to their own experiences in the Boer War. The war in South Africa, Childers, continued, had proved men like Bernhardi wrong, but it had strengthened the views of de Régrier and the Americans on the proper fighting methods for cavalry.

All admitted that the wars proved that change was necessary for the survival of the cavalry. But the extent of the change was to be the pivot of the great debate. The advocates of dismounted tactics could point to the Boer War as an example of the devastating effect of fire on regular cavalry. The war in Manchuria was to them another example of how cavalry, without adequate dismounted training was rendered useless. The opposition, however, claimed that the South African conflict was a colonial struggle having little similarity to the type of fighting likely to occur between major

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34 Ibid., 305.  
35 Ibid., xii.  
36 Childers, German Influence, iv.  
37 Childers, Arme Blanche, 316.
European powers, and the Russo-Japanese War hardly qualified as a true test of cavalry. The Japanese service was small and poorly mounted, while the Russians kept their best troops in Europe. In addition, Russian troopers seemed to lack the spirit and initiative necessary to good cavalry. Unfortunately the debate created more discussion in officers' clubs than it did improvements in the cavalry.

Between 1905 and 1912, however, the mounted services did undergo some changes, as results of these arguments plus new inventions. The machine gun had been greatly improved, aircraft and balloons were receiving close attention by the ordnance and staff officers, and the automobile for military use was also gaining acceptance. Yet while these and other innovations were being tested, the cavalry on the whole seemed more concerned with its own internal struggles. At times the cavalry seemed oblivious to the use of machine guns and repeating rifles.

In spite of the tremendous advances in weapons, few cavalrymen were willing to acknowledge that the charge was no longer feasible. Already it had been accepted that attacks against unshaken infantry were a thing of the past, but at this point agreement ceased. Even the early battles of World War I could not alter this attitude. In 1915 an American officer wrote:

"... when an officer takes it upon himself to discard the mounted charge entirely, or even to pay little attention to it, on the theory that it is a thing of the past,"
he is going squarely against the plainly expressed opinion of the War Departments of all nations, including our own.  

Such conservatism made it difficult for the reformers.

After 1905 the general method of making the charge was to combine fire and shock by utilizing horse artillery, machine guns, and rifles before, during and after. Since large commands were rapidly gaining favor, it was much easier to combine fire and shock because there were too many troopers for all to be able to participate in the charge. The supporters of shock tactics claimed advantages over the dismounted fire-fight because a decision was gained more quickly and usually with a much smaller loss by the successful side.

The use of the charge also seemed to go hand in hand with the increased emphasis on the offensive spirit which became so strong by 1914. Count Gustav Wrangel wrote, "The duel between the two cavalries [in a European conflict] will, without doubt, be in favor of that one who is imbued with the greater offensive spirit." In the German regulations issued in 1909 this offensive spirit was one of the main principles.

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38 Hayne, *Lectures on Cavalry*, 52.
41 Ibid., 53; Balck, *Tactics*, II, 108-110.
42 Wrangel, *Cavalry in Russo-Japanese War*, 56.
43 Major Marie Félix de Fardieu, *A Critical Study of German Tactics and of the New German Regulations*, tr. by Charles F. Martin (Fort Leavenworth, Kansas, 1912), 64. The French and Germans were the only ones emphasizing the offensive so heavily. Ibid.
At the same time that the advocates of shock action in the traditional manner were praising the merits of the charge, other Europeans urged that firing from the saddle be adopted for cavalry. Childers, naturally, was one of these. He believed that rifle fire from horseback could be very effective. Colonel William Balok was opposed to fire in a charge because of the danger to the officers and men in multi-rank formations. Although in the United States the troopers did not generally use the rifle when mounted, the single-rank formation did permit the pistol to be used under these conditions:

1. When weak enemy forces created a short delay.
2. In pursuit, when a mounted charge could not be made because of terrain or other obstacles.
3. In covering a retreat, when it was risky to dismount and impracticable to advance to the charge.
4. In warding off a hostile charge that was moving over difficult ground.

Most of the opinions stated above were made either by cavalrymen or by others upholding their viewpoint. The men who wrote the infantry manuals had a different outlook on the threat of a cavalry charge. The infantry manuals frankly stated that an infantry advance was not to be checked by the appearance of cavalry, and that any attacks, no matter where they occurred, were to be repulsed by fire. Above all, it was

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44 Childers, Arme Blanche, 32.
45 Balak Tactics, II, 166-67.
46 Infantry Drill Regulations, United States Army, 1904 (New York, 1904), 123. The regulations for 1911 suggested the following methods for meeting a cavalry charge:

"A frontal charge is easily checked by a well-directed
essential for the infantry to remain calm.

A cavalry charge can accomplish little against infantry, even in inferior numbers, unless the latter are surprised, become panic-stricken, run away, or can not use their rifles.

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The formations for the charge were generally similar to those of 1900. Most drill regulations called for the line formation for mounted attacks. The principal modification had been made in charges against infantry. To compensate for the effects of increased fire power, it was specified that charges must be made on a broad front so that hostile fire could not have a concentric effect. But to make the shock produced by the first line effective, distribution in depth was also essential.

and sustained fire.

"If the charge is directed against the flank of the firing line, the supports, the reserves, or machine guns should stop it. If this disposition is impracticable, part of the line must meet the charge by a timely change of front.

"Men standing are in the best position to meet a charge, but other considerations may compel them to meet it lying prone." *Infantry Drill Regulations, United States Army, 1911. Corrected to April 15, 1917* (Washington, 1917), 155. See also Falck, *Tactics*, I, 501.


Since the charge had a prominent place in the annual German maneuvers, it is small wonder that it was held in such high esteem by cavalrymen. William II always had the German war games end with a climactic charge by cuirassiers in white tunics, gleaming breastplates, and all the other traditional trappings. It was a magnificent spectacle, but hardly war. Yet some considered the German Emperor's plan of breaking through at one point with heavy cavalry masses not merely a parade-ground maneuver calculated solely to raise the spirits of the cavalry. A French general labeled it a "well-thought-out and practicable plan of action."

The core of the problem for the reformers was to erase the stigma of dismounted action. Even Bernhardi thought that when the trooper dismounted he surrendered his "real character" as a cavalry soldier. For some mysterious reason every time the cavalry soldier dismounted he apparently parted with something more than just his horse. Balck believed that this idea was used to cover the "aversion felt against using the carbine." This aversion often appeared in training too, where, in spite of the specification in the manuals of equal time, mounted

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50. Walter Goerlitz, History of the German General Staff, 1657-1945, tr. by Brian Battershaw (New York, 1957), 122. The younger Moltke did away with these charges before the war in 1914. Ibid., 144. Wrangel also believed that these massed charges against the infantry were undertaken mostly for show. Wrangel, Cavalry in Russo-Japanese War, 80.

51. Maguire, Development of Tactics, 121-22.

52. Bernhardi, Cavalry in War and Peace, 19.

53. Balck, Tactics, II, 111.
training occupied four-fifths of the time available.\textsuperscript{54}

Those in favor of dismounted action again pointed to the results obtained in the American Civil War and the Boer War. They were beginning to urge that cavalry had to be able to attack on foot exactly like infantry when the situation demanded it.\textsuperscript{55} Fire surprise, they argued, was the combat method most in keeping with the mobility of cavalry armed with long-range weapons and supported by artillery and machine guns.\textsuperscript{56} The troopers could very easily follow this advice in the infantry manual:

Fire superiority beats down the enemy’s fire, destroys his resistance and morale, and enables the attacking troops to close on him, but an actual or threatened occupation of his position is needed to drive him out and defeat him.\textsuperscript{57}

This was what the cavalry soldiers had to be taught to do well if they were to be successful when dismounted. If it was not possible for the cavalry to place more rifles in the line than the enemy had, the cavalry was to use its mobility "to compensate for its lack of numbers."\textsuperscript{58} The troopers also had to be under some fire discipline in dismounted action so that the

\begin{itemize}
\item \textsuperscript{54} Edwards, Notes on Cavalry, 64-65.
\item \textsuperscript{55} Bernhardi, Cavalry in Future Wars, 60; Wrangel, Cavalry in Russo-Japanese War, 68.
\item \textsuperscript{56} Balck, Tactica, II, 125; Le Capitaine Breveté Bouillaire, La Cavalerie Russe (Paris, 1911), 52.
\item \textsuperscript{57} United States Infantry Regulations, 1911, 116.
\item \textsuperscript{58} United States Cavalry Regulations, 1916, 277.
\end{itemize}
fire would be effective and the waste of ammunition kept at a minimum.\(^59\)

The most vulnerable part of the cavalry in dismounted action was the horses. Their safety often created considerable anxiety, and the troopers detailed to guard the horses had to be subtracted from the fighting force. The number of men staying with the animals depended upon the local conditions. Their number usually went from a maximum of every fourth trooper to only two or three out of a whole troop.\(^60\)

The occasions for dismounted action varied according to the manuals or author being consulted. But, on the whole, it was to be employed under these circumstances:

1. In réconnaissance when defiles had to be forced.
2. In screening when defiles or other obstacles had to be held.
3. In delaying actions.
4. In pursuits to disperse supply trains, etc.
5. In actions when the enemy had numerical superiority in cavalry.
6. In deceiving and molesting the enemy in action and in camps.\(^61\)

There was also much discussion over assigning mounted or regular infantry to a cavalry unit. Cavalrymen maintained, probably rightly, that mounted infantry if confronted unexpectedly by cavalry were of little value because they could

\(^{59}\)Maguire, Development of Tactics, 19; Haig, Cavalry Studies, 164; Edwards, Notes on Cavalry, 61-62.

\(^{60}\)See the following for more complete details: United States Cavalry Regulations, 1916, 244-45; Hayne, Lectures on Cavalry, 55-56; Allen, Cavalry Notes, 14.

\(^{61}\)Childers, Arme Blanche, 318; Balck, Tactics, II, 111-13; Bernhardi, Cavalry in War and Peace, 165.
not fight on horseback. It would be much better to give the cavalry proper training than to use mounted infantry. As to the value of assigning regular infantry to the cavalry, one major problem arose. Regular infantry slowed down the speed and impaired the mobility of the cavalry. Yet in difficult terrain such as mountainous areas, and where there was danger of ambush, the accompaniment of infantry could be of value. The Japanese had proved that infantry could work rather well with cavalry.

These attempts to combine fire and shock through dismounted action, although steps in the right direction, were only a beginning. Fire tactics still bore a sort of stigma. It was unfortunate that more cavalrmen did not see the problem as did one German officer:

To conclude my opinions concerning the fire fight, I can assure the reader from my personal experiences that the fire fight will become more and more interesting the more we occupy ourselves with it and that dislike and prejudice will disappear the deeper we go into the subject.

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63 This fact was noted in *Cavalry Tactics* also: "Marching with infantry is very fatiguing to cavalry, owing to the slow pace and frequent halts. The writer has a very vivid recollection of the appalling condition of his troop, after a few days' marching with infantry some years ago." Cavalry Officer, *Cavalry Tactics*, 8-9.


65 Colonel Ludwich Koch, "Cavalry Training in Summer," tr. by Harry Bell, *Journal of the United States Cavalry*
Another aspect of the great debate concerned the feasibility of strategic and tactical raids. The issue of firearms to the troopers made a raiding force much less dependent upon supporting fire power. But many questioned the advisability of such undertakings in light of the possible losses to the cavalry. Gray pointed out that if raiders had to cut their way through enemy lines, the losses suffered might easily outweigh the value of the raid. 66 General Joseph Hooker of the Army of the Potomac learned this the hard way after Stoneman's raid. 67 Captain Hayne thought that raids could be made only under very favorable conditions:

Enterprises of long duration by large bodies of cavalry against the enemy's lines of communication separate them from their principal duties. Such raids are to be undertaken only when cavalry is redundant. 68

But as he pointed out, the effects of faster communications and the as yet untried potential of aircraft would make it far more difficult to conceal the position of a raiding force. 69 Bernhardi was one of the few who looked on raids as being of "extraordinary significance" in a future war. He claimed that the importance of raids had increased in the same proportion as the value of cavalry on the main battlefield had diminished. 70

Association, XX (July, 1909), 147. An editorial note at the end of the article asserted that this article might cause considerable disagreement among the readers.

66 Gray, Cavalry Tactics, 136. 67 Ibid., 137.
68 Hayne, Lectures on Cavalry, 46. 69 Ibid., 48.
70 Bernhardi, Cavalry in War and Peace, 93, 96.
If a raid could have been made with a definite purpose in view, which was not beyond the potential of the raiding force, and that purpose accomplished without an excess waste of manpower and horseflesh, then it might be feasible. At the same time there had to be sufficient cavalry left behind with the army to meet any emergencies and to carry on normal cavalry duties. If these conditions could be met, then a raid might be worth the risk and the effort.

With more emphasis on dismounted tactics there arose the problem of what were the proper weapons for a cavalryman to carry. Not many critics wished completely to discard steel weapons. Most favored retaining only the sword or only the lance. G. F. R. Henderson was one of the few who favored carrying a lance and a sword as well as a rifle. The events of the Boer War caused the British cavalry to discontinue the lance in 1901 and the sword soon afterward. In parliamentary comments on the war, many members seemed heartily in agreement with this decision. Winston Churchill was one of those who supported the government. He said that he "could not understand how anyone who looked at the matter from an impartial point of view could possibly prefer the lance to the rifle."

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71 Only if the country was not suitable did Henderson believe that the lance should not be carried. Henderson, *Science of War*, 67-68.


Churchill added that he earnestly hoped the Government would adhere to their decision to discard the lance and that they would boldly face the problem of the creation of a great rifle-armed cavalry combining skill in the management of horses with the highest development of firing tactics. 74

But the British Government ended its revolutionary role in 1907 with the readoption of the lance and new regulations. 75 Lord Roberts believed that the reissue of the lance was a retrograde movement, being a positive impediment to dismounted action because it was impossible to use dismounted. 76 The German, French, and Russian cavalry still had the lance in at least some of their units. Bernhardi believed that "the lance is the cavalryman's most important weapon." 77 But the debate over the lance continued and the cavalry rode into World War I still carrying it.

There was not quite as much dissension in regard to the sword. As long as even a slim chance existed for mounted combat, the sword would probably be retained. As the United States manual said: "The saber is intended for mounted combat." 78 The War Department had considered abandoning the sword in 1905,

75Childers, Arme Blanche, v; Luvaas, Military Legacy, 196-97.
76Childers, Arme Blanche, v.
77Bernhardi, Cavalry in War and Peace, 267.
78United States Cavalry Regulations, 1916, 60.
but the Cavalry Board reported in favor of retaining it. This move in America to discard the saber was the result of the discussion over the merits of the revolver and the saber. It was generally agreed, however, that both had their uses and that such discussion was a waste of time.

Some writers and soldiers of the day were admitting that perhaps the saber was no longer the principal weapon of the service, but had been forced to a secondary position by the rifle. The French were most reluctant to accept this, as is shown by their regulations and their writers. The following was typical of French sentiment: "Le sabre reste la véritable arme de la cavalerie, principalement contre la cavalerie adverse, et l'ultima ratio . . . ."

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79The report read: "The board is of the opinion that much of the prejudice against the saber is due to the fact that the saber generally in the hands of our troops is so dull as to be little more than a steel club. The saber, if sharpened and kept keen as a razor, becomes at once a formidable arm, a blow from which is sufficient to place an enemy out of action. In the opinion of the board, the sharp saber as a cavalry weapon is valuable and should not be abandoned." The Chief of Staff also agreed. "Revolver versus Saber--Report of the Cavalry Board," Journal of the United States Cavalry Association, XVII (July, 1908), 47.

80Gray, Cavalry Tactics, 25.

81Balek, Tactics, II, 87-88; Childers, Arme Blanche, 357.

82Lhuilier, Military Legacy, 164. Maurice Loir did not believe that the French cavalry was armed in such a way that it could capture an infantry post impeding the advance. Loir, Cavalry, 43. Loir also felt that for cavalry to attack or even to await an attack dismounted was "an outrageous piece of folly." Ibid., 124-25.

83Bouillault, La Cavalerie Russe, 54. The United States General Orders for 1913 expressed similar sentiments: "No cavalry is fit for war unless it has thorough confidence in
By 1910 all cavalry had some sort of shoulder weapon, and most critics were urging the adoption of a rifle in place of the less powerful carbine. The British had armed their cavalry with rifles in South Africa, but had not continued the practice after the war. This desire for a better weapon became an issue in the British press and in Parliament. In 1905 the Earl of Wemyss held that the carbine was an "absolutely useless" weapon for the cavalry and that the service should be rearmed with a long rifle. 84 Lord Roberts, Arthur Conan Doyle, Colonel F. M. Edwards, Erskine Childers, and others favored the adoption of a weapon equal to or surpassing the infantry rifle. 85

The Americans had again taken the lead in a cavalry advancement. In 1903 the Model 1903 Springfield rifle had been adopted as a weapon that fulfilled the requirements for a rifle that could be used by both mounted and foot troops. 86 This not only made the cavalry weapon equal to the one used by the infantry, but also reduced the costs of production. A

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86 The barrel length was 24 inches and the weapon could be fitted with a bayonet. Major James E. Hicks, Notes on United States Ordnance (2 vols., Mount Vernon, New York, 1946), 10.
contemporary British observer considered the Springfield unequalled by any other service rifle. 87

Bernhardi also urged the adoption of a suitable rifle for the German service, because the existing carbine was in no way equal to the infantry weapon. 88 Thus in this area too there was some progressive thought; it was beginning to appear that the cavalry might make some adjustments to meet modern conditions.

The one other weapon carried by cavalry was the pistol or revolver. The only country where side arms seemed to be an issue was the United States. America was the sole nation which used the pistol extensively in mounted attacks. The pistol attack was often used when cavalry attacked as foragers or in other extended order formations. 89 Even in America, however, some consideration was given to discarding the pistol. But in 1913 the army decided to retain it because most of the officers favored a hand gun. 90 The European services seemed


88 Bernhardi, Cavalry in Future Wars, 58. C. von Hutier, a German officer, went further than most. "In my opinion the cavalry should have a weapon superior both to the infantry rifle and the machine gun. Otherwise it will only become mounted infantry; and modern cavalry must be something more," C. von Hutier, "The Fighting Value of Modern Cavalry," The Journal of the Royal United Service Institution, LV (March, 1911), 355-58. The tank would fulfill von Hutier's wish.


90 United States War Department Annual Report, 1913 (3 vols., Washington, 1913), I, 158. The type of revolver or pistol needed was one of large caliber or great stopping power, quick firing, and accurate up to fifty yards. Gray, Cavalry Tactics, 25.
generally to favor the sword in place of a pistol. The most extreme viewpoint was expressed by Colonel Denison, who maintained that the only weapons for true cavalry were the saber and revolver.91

The Russo-Japanese War had shown one glaring deficiency in the armament of cavalry. There was a need for horse artillery and machine guns to be attached to cavalry units. Without them a detachment could easily be stopped by a small force in an entrenched or fortified position. But here also there was a definite attempt to remedy the situation. Thorough training in the employment of machine guns and the attachment of horse artillery might easily make it unnecessary to assign infantry to the cavalry to provide extra fire power.92 De Négrier believed that the experiences in Manchuria had clearly demonstrated that cavalry had to be provided with a number of howitzers or light mortars capable of firing large bursting shells containing heavy charges of high explosives. Such weapons would enable a detachment to capture villages and shatter obstacles in its path.93 The general purpose of artillery was the same as in 1900, except that now it was deemed more essential to the mounted service.

Unfortunately, as events after 1914 proved, there was a lack of appreciation in these years of the value of the

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91Denison, History of Cavalry, 426.
92Bulck, Tactics, II, 18; Wrangel, Cavalry in Russo-Japanese War, 30.
93De Négrier, Lessons, 26-27.
machine gun, not only in the cavalry, but also in the infantry. The United States regulations of 1911 illustrate this fact:

Machine guns must be considered as weapons of emergency. Their effectiveness combined with their mobility renders them of great value at critical, though infrequent, periods of an engagement. 94

New and much-improved machine guns had been developed, smaller and lighter than those of 1900, which were more readily adaptable for use by cavalry. The Germans recognized this in the 1909 regulations in which much more importance was attached to machine guns than in the earlier manual. 95 Count Wrangel in 1907 had urged that the Austrian cavalry have a machine gun detachment of four pieces to each division. 96 De Negrier was more perceptive; he advised the adoption of two machine guns for every squadron. 97 As late as 1912 the United States Congress appropriated only enough funds to equip each regiment with four machine guns. 98 From the above recommendations it is obvious that few were aware of the real potential of automatic weapons. The American Secretary of War, Newton D. Baker, commented in 1916:

94 United States Infantry Regulations, 1911, 127.
95 De Fardieu, Study of German Regulations, 155.
96 Wrangel, Cavalry in Russo-Japanese War, 77.
97 De Negrier, Lessons, 76.
Perhaps no invention has more profoundly modified the art of war than the machine gun. In the European war this arm has been brought into very great prominence. It had, however, been developed to a serviceable state at the time of the Spanish American War, although its use on a large scale had not been developed in any army until the outbreak of the European War.

The cavalry leaders came to several conclusions as a result of the discussions of these years. Probably first and foremost was their conviction that cavalry to be successful had to be used in large concentrations. As Haig had said, "the war of masses necessitates mass tactics;" and the military believed that the next great war would be one of mass armies. If mass conscript armies were to be used, they would require large contingents of cavalry.

The most conservative cavalrymen were reluctantly acknowledging the fact that all future conflicts would involve both fire and shock action. The amount of each type varied according to the nation or the individual being considered. The Chief of Staff of the American Army summed up the situation in 1913:

European armies, living always in the shadow of war, are devoting every energy to building up good cavalry. They are falling in now rather rapidly with our ideas concerning dismounted work, but they are not in any way diminishing their thorough preparation for mounted action. It

99 Ibid.
100 Haig, Cavalry Studies, 19.
101 Ibid., 4; United States War Department Annual Report, 1909, I, 200; De Pardiou, Study of German Regulations, 68; Bernhardi, Cavalry in Future Wars, 295; Allen, Cavalry Notes, 22.
is quite probable that the majority of action will be
dismounted, but there will be occasions when mounted
action will be required; when it will be fatal to the
success of our Cavalry if it is not well prepared to
meet this less frequent but very important requirement
of war service against well-trained cavalry. 102

It was quite evident that the veneration of the arme blanche
had lessened considerably since 1900, but shock action still
held a strong place in the service. 103 Even in the United
States the War Department was careful to make certain of the
status of the two types of action:

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 [fails?] to provide for the
effective use of the cavalry dismounted will enable it to
perform its functions in war. 104

Most significant of all was the increased frequency of

102 United States War Department Annual Report, 1913, I,
158. Others concurred in this view. Allen, Cavalry Notes, 6;
Captain H. E. Braine, "Sword and Lance versus Rifle," The
Nineteenth Century and After, LXXI (May, 1912), 975. There
was in America at this time a belief that more emphasis should
be given to mounted training. See United States War Depart¬
ment Annual Report, 1911, I, 144.

103 Edwards could see no need to keep more than a few
heavy regiments, because of the fact that the occasions for
shock action would be less numerous. Edwards, Notes on
Cavalry, 97.

104 "Cavalry Instruction," Journal of the United States
Cavalry Association, XXIV (May, 1914), 877. The Germans and
French had this in their regulations also. The French manual
said: "The charge in close order is the principal mode of
action for cavalry." Loir, Cavalry, 89. The German regula¬
tions read: "Mounted action is the principal method of fighting
for cavalry." De Pardieu, Study of German Regulations, 57-58.
statements expressing doubts about the value of cavalry. In the United States Congress consideration was given to reducing by one third the formerly authorized strength of the cavalry. During this debate in 1912 Representative James Hay of Virginia said that we had more cavalry than we needed, while Representative Joseph Taggart of Kansas went further in his condemnation: "Modern small arms and artillery have rendered it [cavalry] utterly impracticable at this date..."105

Naturally, the cavalry had strong supporters also, but it is significant that these statements were being made. The Secretary of War defended the cavalry, pointing out that it was carrying out the greatest part of the work of guarding the Mexican border.106

In the overall view the service had not undergone any revolutionary change during this decade. To be sure, dismounted tactics had been accepted as of vital importance, but shock action was still theoretically supreme. In comparison with the other arms, the stature of cavalry had declined since 1900. It had not done well in the wars in South Africa and Manchuria. Warfare was changing more rapidly than ever before. General Bernhardi summarized the dilemma of the cavalry very well.

Thus, the Cavalry stands face to face with new conditions, and sees itself everywhere confronted—on the

105 Congressional Record, XLVII, 62nd Congress, 2nd Session, 1904–05, 1908 (February 9, 1912).

battlefield and in the wider field of strategical operations— with new problems, towards the solution of which the history of the past furnishes only very general indications.

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Unfortunately most military men were guilty of looking back to the good old days, instead of ruthlessly scrapping tradition when necessary. The World War should show how the cavalry had adapted itself to these new conditions and whether the old guard or the new was right.

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107 Bernhardi, *Cavalry in Future Wars*, 8.
CHAPTER IV

CAVALRY IN THE WORLD WAR

As the summer of 1914 approached, it almost seemed that the tensions which had held Europe on edge since the second Moroccan Crisis might be easing. Germany and Great Britain were nearing a compromise on the naval race, the Balkan Wars had ended, and the problem of the Berlin to Bagdad Railway appeared less critical. But underlying the surface calm was seething unrest which had been building up for many years. The basic problems had really not been solved and any sudden jarring would easily upset the delicate balance. All it took was a pistol shot to touch off the series of events which resulted in war in August.

During the last years before 1914 the cavalry was still going through a sort of schizophrenic agony over its proper role in warfare. The great debate had been just that—a debate and little else. The cavalry of all armies was still trying to keep mounted action dominant over dismounted action. The only real concession made was that fire and shock were to be combined whenever possible.

Many generals, especially in France, were convinced that an offensive spirit was essential for a good soldier.

Captain Loir, along with many others, still believed that the only way for the cavalry to be victorious was to be "more dashing and enterprising" than the enemy. This was not the only delusions of the pre-1914 military. Another was the notion that a single, purely military victory in the next war would effect a permanent political settlement. But the elder Moltke recognized as early as 1890 that a future European war could not be won in one battle or campaign. Nations had become too strong. Moltke thought that a general war might last seven, even twenty, years.

The French had more faith in the offensive and a one-campaign war than had any other nation. Some of the experts even repudiated the precedents set by earlier conflicts, as is illustrated by this statement: "Battles in entrenched camps as occurred at Plevna or Mukden will never take place in a war with the French army." Cavalrymen in the French service were especially prone to be deluded by such statements, because if they were correct, the armé blanche would still retain a prominent role in war. In fact, the French cavalry was taught that the great battle would take place early in the war and that large masses of horsemen would be used mounted. They were to seek the charge with lance or saber. There remained a definite dislike for dismounted action in the whole French service, and

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2Loir, Cavalry, 18.
3Goerlitz, German General Staff, 135.
4Ibid., 102.
5De Fardieu, Study of German Regulations, 117.
the armament of French horsemen was not really suited to dismounted action. All cavalry divisions carried the lance except the cuirassiers. Even the equipment of the cuirassiers was not suited to dismounted action, and the uniform made an excellent target.6

The German cavalry had a somewhat more realistic attitude toward modern war. Each cavalryman was normally armed with a rifle or a carbine and a lance or a saber. Certain ranks also carried pistols. The Germans still maintained the old classifications of cuirassier, dragoon, lanceer, and uhlan. The most important factor was that much more emphasis was placed on fire than in the French service.7 All Russian cavalrymen were armed with rifles and sabers, and some still carried the lance. In addition many had bayonets for their rifles.8 In Britain the cavalry now carried a short rifle as well as steel weapons.9 The American cavalryman carried the same rifle used by the infantry, a saber, and a pistol. Both Great Britain and the United States had horse soldiers suited to either mode of combat.

The relative strength of the cavalry in the principal armies of the world in the years just before 1914 ranged from

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6 United States Cavalry School, History of Cavalry During the World War (Fort Riley, Kansas, 1922-1923), 192-94; hereafter cited as History of Cavalry During the World War; Hayne, Lectures on Cavalry, 52.

7 History of Cavalry During the World War, 233.

8 Ibid., 249.

a high of 16.64 percent of the American army to 8.10 percent of the British army. The overall average of cavalry strength was 8.60 percent of the total force. The largest force numerically was that of Russia, with a peace-time strength of 115,000 horsemen. Most armies could expand their cavalry corps under war conditions by the calling up of reservists.

Following the assassination of Archduke Franz Ferdinand and the rejection at Vienna of Serbia's reply to the ultimatum of July 23, war broke out between these two nations on July 28. All attempts to localize the conflict proved futile and by August 4, most of Europe was embroiled in war.

The French cavalry was ready to enter the war with 79 regiments totaling about 65,900 officers and men. Each regiment had a machine gun sector assigned to it. The Germans had 110 regiments numbering 85,000 officers and men. Most of these were organized into eleven cavalry divisions, and the rest were assigned as corps and divisional cavalry. Each division had three horse-artillery batteries and a machine gun detachment. Russia mobilized 36 cavalry divisions totaling about 180,000, as well as some squadrons of divisional cavalry. Ten of these thirty-six were Cossack divisions.

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11. Ibid.
12. Ibid., 18. History of Cavalry During the World War, 192. These 79 regiments included 12 of cuirassiers, 32 of dragoons, 14 of hussars, and 21 of chasseurs. Ibid.
13. Ibid., 233.
14. The squadron was the basis of cavalry organization in
Each division had two six-gun batteries of horse artillery armed with 3-inch guns. The British Expeditionary Force, which sailed from Southampton on the night of August 12-13, consisted of about 50,000 infantry and five brigades of cavalry—approximately 9,000 horsemen. It is at once apparent that there was a sufficient force of cavalry on each side to achieve the results predicted by the tacticians before the war, if their ideas had been correct.

It is not the intention here to describe in detail the cavalry operations of the war, but only to show how the cavalry was used and how effective it was. Most of the emphasis will be on the causes of the ineffectiveness of the cavalry.

The days of glory for the cavalry in World War I were few, and most of these were confined to the periods of August to October, 1914, and July to November, 1918. In the opening phase of the war Germany planned a great offensive against France. This offensive against France was based on the so-called Schlieffen plan, and it involved a huge sweep by the German army through Belgium and into France. The objective was to catch and destroy the whole French army in this vast

Europe. On a war footing it numbered between 120 and 150 sabers, which was about half the strength of an American squadron at this time. Foreign regiments contained from three to six squadrons. 

Strength and Organization of Armies, 5.

15Ibid., 32; History of Cavalry During the World War, 248-49.

16History of Cavalry During the World War, 5, 7; Wingfield, Lectures to Cavalry Subalterns, 116, 118; Strength and Organization of Armies, 42. It might be noted that the United States Cavalry in 1914 consisted of 15 regiments numbering 14,691 officers and men. Annual Report of the Secretary of War, 1914, 1, 143; Huidakoper, Military Unpreparedness, 471-72.
enveloping movement. But it did not work as expected. In a sense its failure was unavoidable. The speed of the march placed too great a strain on horseflesh, and supply lines could not keep up. There should have been more cyclists, lorries, and armored cars. The horses of the French and German cavalry were often exhausted before reaching a battlefield. 17

Almost from the outset it became apparent that boot-to-boot cavalry charges were over, as an action at Haelen in Belgium demonstrated. On August 12, 1914, German lancers met the enemy, and ten times made charges with squadrons or larger units, in an area where surprise was impossible; ten times they were driven back by a hail of bullets and shells. Yet when they turned to dismounted tactics as skirmishers, they were able to force the passage at Haelen. 18 This action at Haelen was not an isolated incident; in account after account of the battles there is little or no mention of the cavalry winning great victories by the old-style mounted charges. 19

17 Goerlitz, German General Staff, 158.
18 History of Cavalry During the World War, 162-63.
19 See, for example, the New York Times, 1914-1918. Only in Palestine did this pattern vary as will be seen. A London correspondent claimed to have a copy of the German Minister for War's letter of advice on the training of the new German armies. Dated September 26, 1914, it said of the cavalry charge: "The dismounted cavalryman should be able to fight exactly as an infantryman. Cavalry charges no longer play any part in warfare." "New German Training; No more Cavalry Charges," Infantry Journal, XI (March-April, 1915), 669-70. A few diehards still were not convinced; one correspondent observed that in the first months of the war there were a "surprising number of cavalry charges" but that the
But it is equally evident that when the horse soldiers dismounted to use their rifles and machine guns they were formidable indeed. On the 8th of September, 1914, four British infantry and two cavalry divisions were held up on the Petit Morin River in France for the better part of the day by a couple of German battalions and a handful of cavalry with ten machine guns. In East Prussia the Germans used a single cavalry division to detain Rennenkampf's whole army north of the Masurian Lakes, while they destroyed Samsonov at Tannenberg. In October, 1914, during the "race to the sea" to capture the Channel ports, the British cavalry fought in the trenches because of the shortage of troops in the Expeditionary Force. Here too it was by fire tactics, not horse tactics, that the Germans were stopped. These actions were an ominous sign that the pre-1914 theories about cavalry were not in accord with the demands of modern war.

That it did no better in World War I was not wholly the cavalry's fault. Much of its deficiency in these early months was due to improper utilisation of known capacities by the cavalry commanders. In reconnaissance this was especially


22 History of Cavalry During the World War, 15-16.

23 "The Present Value of Cavalry," The Living Age,
evident. During the German drive through Belgium, the French cavalry did not discover the strong German center between the Meuse and the Moselle, which Joffre supposed to be weak. Thus the French armies were everywhere surprised, and suffered a fresh defeat. At the same time the German cavalry did not exploit the opportunities resulting from their success.24

On other occasions horsemen failed to make the utmost of mobility. On September 9, shortly after crossing the Marne, British General John French ordered Haig to stop his cavalry for the day although a mass of German transport and supply trains lay ahead inviting capture. This order came in mid-afternoon, when French's aircraft had reported that all was clear. On the following days the opportunity grew rather than diminished, because the gap between the two German armies increased. The Allied armies had by this time penetrated right between the two German armies. Allied leaders were aware of the gap, and also that with the fall of Maubeuge fresh German troops might shortly arrive to fill it. On the 12th, with full knowledge of the situation, French again halted his troopers. Yet the force had advanced only seven miles when it went into billets with the Aisne seven miles ahead.25

Other factors added to the impotence of the cavalry. Although tacticians and strategists had clearly insisted that

CCXCIII (June 23, 1917), 762. This author was pro-cavalry.

24 Liddell Hart, War in Outline, 32-33.

25 Ibid., 46-47.
cavalry had to be employed in masses to be effective, the French, Germans, and Russians all split up their large forces into small detachments scattered along various fronts.26

By November, 1914, except for minor actions, the use of cavalry on the Western Front had practically ceased. Haig noted that, "The style of warfare in which we have been engaged [after November, 1914] offered no scope for cavalry action . . . ."27 Only on the Eastern Front and later in Asia did the cavalry perform at all well. Everywhere the cavalry seemed to be confronted with forces which it could not successfully overcome. But the generals were still not convinced. General Haig recorded in his diary in April, 1915: "We cannot hope to reap the fruits of victory without a large force of mounted troops."28

Probably two things were most responsible for this change— the machine gun and the trench. As already noted, the machine gun was not a new weapon, but before the war few realized its full potentials. Even as late as 1917 machine guns were still considered "weapons of emergency," not for "sustained fire action."29 As an old cavalryman, Haig in 1915

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26"cavalry," Encyclopaedia Britannica, V, 71.


was still an ardent believer in steel and could see little value in increased fire power. He believed that "the machine gun was a much overrated weapon and that two per battalion were more than sufficient." 30 Haig was not alone in his views, for even Kitchener considered four to a battalion more than enough. 31 But these men did not have the final say, and more and more machine guns came to the front to halt not only the cavalry, but the infantry as well.

The trench was the other limiting factor in cavalry operations. Its use gave the cavalry nothing feasible to charge. Used in conjunction with machine guns and barbed wire, the trench virtually paralyzed mounted cavalry action wherever it was used. In northern France during August, 1915, for instance, General Edmund Allenby's cavalry was held up by barbed wire when only five hundred yards from the objective. 32 At Arras in April of 1917 the cavalry was halted by unbroken wire south of Feuchy. Soon afterward, in an attempt to pass the Scarpe, the troopers were again defeated by machine-gun fire. 33

Another problem which plagued the service was the

30 Lynn Montross, War Through the Ages (New York, 1944), 700; Liddell Hart, War in Cutline, 74. By the end of the war each battalion in the British Army had 32 light machine guns and at least half as many heavy machine guns. Liddell Hart, War in Cutline, 75.
31 Ibid., 74.
32 Hayne, Lectures on Cavalry, 59-60.
increasing use of defense in depth. As the war progressed there developed two, three, and sometimes four complete trench systems. Against such systems it became impossible with existing weapons and tactics to achieve a breakthrough, and hence the cavalry had no chance for pursuit. Related to the defense in depth was the fact that in the West there was no flank which could be turned. This precluded the use of raids or attempts to turn or hit a weak flank. Such conditions were new and the old cavalry methods and weapons failed to meet the test.

The use of aircraft had a profound effect on cavalry. Before 1914 the military was not sure just how valuable planes would be. It was widely believed that they would be valuable in reconnaissance, but the war proved that aircraft were of far greater importance than that. Planes were not effected by screens; in open country they could easily spot large concentrations of troops. Even cavalrymen acknowledged that aircraft would be of help to the mounted service, but at the same time these men emphatically denied that planes could ever replace the horse. All believed that the capabilities of aircraft would always be limited.

34 Leon Wolff, In Flanders Fields (New York, 1958), 168.

35 Major H. Bannerman Phillips, "Air-craft in Co-operation with Cavalry," The Nineteenth Century and After, LXIX (May, 1911), 810; Bernhardi, Cavalry in War and Peace, 3; Bayne, Lectures on Cavalry, 31; Brig. General David Henderson, The Art of Reconnaissance (London, 1915), 174-75; Edwards, Notes on Cavalry, 1, 5.
None of the planes carried guns when the war began, but machine guns were soon mounted and the famous dogfights began. The aircraft in reconnaissance was vastly superior to cavalry, as events soon proved. After the front stabilized in France, cavalry could not conduct reconnaissance missions because of the trench system and machine guns, but planes could fly over the lines and penetrate deep into enemy territory with relative ease. In addition to observation, aerial photography was developed and became very valuable. All these factors were not quite as evident in 1918 as they were in 1939, but it seems clear that the growth of air power was another factor in the demise of the cavalry.

The last of the weapons which revolutionized land warfare was the armored vehicle which first appeared in 1916. Even in its primitive state of 1916, the tank answered the problem of the offensive attack, as shown by its great success at Cambrai. Tanks combined shock and fire power with mobility. With further mechanical improvements they would become a weapon no cavalry could hope to match. Again, as with aircraft, the full possibilities of tanks were not recognized; but cavalry officers maintained that tanks could never replace the horse.

The conditions confronted by the cavalry during the war resulted in several additions to the equipment. Most important were alterations in armament. The extent of these changes can be seen in the report of the Baker Mission which was sent to France in the spring of 1917 by the United States Army to study and report on "such factors abroad as would
influence the organization, training, transportation, operations, supply, and administration of an American expeditionary force operating on foreign soil.\textsuperscript{36} The Board reported that no changes were necessary in the cavalry drill regulations, and that only a few were needed in equipment. The following equipment changes were recommended in armament and related areas:

1. Every cavalryman should have a bayonet.
2. Each enlisted man should carry an entrenchment tool.
3. More ammunition should be carried in a bandolier, with 100 or so rounds, like that used by the British and French.
4. Each troop should be provided with either four Lewis guns or eight automatic rifles, in addition to the weapons in the machine gun troop of the regiment.
5. Six men of each troop should be equipped as rifle grenadiers.
6. Sixteen men of each troop should be trained as specialists in grenade throwing.
7. Each troop should be increased by the number of men necessary to operate four Lewis guns or eight automatic rifles.\textsuperscript{37}

The most striking thing about these changes is that most of them were designed to increase fire power in dismounted action, and, significantly, no mention was made of steel weapons. The Germans were also aware of the value of increasing the fire power of cavalry. In Rumania they assigned machine guns and


\textsuperscript{37} \textit{Ibid.}, I, 79-81.
cannon to each unit charged with a special mission. This permitted the troopers to move ahead in spite of resistance of small enemy groups.\textsuperscript{38} Such supplements to cavalry armament to increase fire power were made by all the warring nations.\textsuperscript{39}

The apparent impotence of the cavalry in World War I attracted notice in many places, including the legislative bodies of Great Britain and the United States. In these chambers there were serious doubts about the value of cavalry in light of the experiences during the war. In September, 1917, the United States Congress unanimously passed a bill which actually disbanded the cavalry when necessary. It authorized:

\begin{quote}
\begin{quote}
\ldots the President to organize provisionally as Field Artillery or Infantry, and to use as Field Artillery or Infantry during the existing emergency, such regiments of Cavalry as he may designate.\textsuperscript{40}
\end{quote}
\end{quote}

True, this was to be temporary, but it had never happened before. Never before had cavalry been of so little value that a legislative body could disband it with no recorded opposition. A month later in London this question was asked of the Under Secretary of War: "Is the hon. Gentleman aware that aeroplanes

\textsuperscript{38} History of Cavalry During the World War, 125.

\textsuperscript{39} Ibid., 246.

\textsuperscript{40} Congressional Record, LV, 65th Congress, 1st Session, 6592 (September 4, 1917).
are taking the place of cavalry?" It had already been suggested in Parliament that artillery and machine-gun fire rendered the cavalry of doubtful utility in France. In Germany, too, the shortage of riflemen in the trenches, as well as the shortage of Horse-Flesh, required the dismounting of a large portion of the German cavalry. Perhaps the fact that the largest body of American horse to engage in active combat during the war was a provisional squadron of only four troops will illustrate that cavalry was not a dominant factor in World War I as it had been in earlier conflicts.

It must be borne in mind, however, that the cavalry did some valuable work on the Eastern Front and in the Balkans during the period from 1915 to 1918. In these areas aircraft, trenches, and machine guns did not control the battlefield as they did in France. The fighting, therefore, retained considerably more mobility and cavalry could be used. The Germans, in 1915, attempted to reach a decision against the Russians. To do this they employed 30,000 horsemen in the greatest cavalry operation of the war. But the dragoon tactics of the Cossacks succeeded in driving the attackers back fifty miles and the Cossacks destroyed most of the German horses. This

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42 Ibid.
43 History of Cavalry During the World War, 240.
This fine defense by the Cossacks saved the Tsar's army. There were other, smaller operations, but no startling successes.

One brief moment of glory, condensed into the last four months of the war, remained for the cavalry. The long-awaited breakthrough in France was finally achieved by the Allies using new tactics, tanks, and fresh American troops. These in conjunction with the gradual moral and material exhaustion of Germany proved decisive. On August 9, 1918, the British cavalry, operating in advance of the infantry, captured numerous prisoners and gained considerable ground. This marked the first time since 1914 that the cavalry had been able to move across open country and reap the fruits of a successful infantry and tank attack. On several occasions during these last days the cavalry was employed in pursuit of the retiring Germans with excellent effect.

But the real theater of glory was in Palestine, where the cavalry under the able leadership of General Edmund Allenby routed the Turks and brought about the defeat of the once mighty Ottoman Empire. Here the cavalry used mounted charges in the grand manner, independent operations, and fire tactics with devastating effect. In short, it was the only theater where the pre-1914 cavalrymen seem to have been vindicated. There were planes and infantry also, but on this field

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45 Montross, War Through the Ages, 706.

46 U.S. Army in the World War, I, 33. Note that even here the cavalry had to depend in part on tanks.
the cavalry held the spotlight. Turkey capitulated on the 30th of October, 1918, a date which marked the virtual end of the horse cavalry. By 1939 tanks and aircraft, not cavalry, were the shock and reconnaissance arms of most modern armies.47

47 The lone exception was Poland, which still relied on horse cavalry and showed little interest in tanks. It was this cavalry which was pitted against the German panzer divisions in World War II. It is perhaps significant that Poland surrendered within a month. The Soviet Army used Cossack horsemen in World War II, but this was in part due to a critical shortage of tanks and armored vehicles.
CONCLUSION

When the victory celebrations of 1918 ended and the world returned more or less to peace-time pursuits, there were many appraisals to be made in the light of the four-year war. Especially was the future of cavalry a matter of critical concern. Its decline raised some public questions, which were discussed in various magazine articles similar to this one.

In the present war, in which infantry has been as important as in previous conflicts and artillery much more so, cavalry seems to have played a relatively small part. This is obviously due not only to the preponderance of trench warfare, but also to the fact that the business of reconnaissance, traditionally a function of cavalry, has been largely taken over by aircraft. Just where does cavalry stand in modern war?

The generals all were in agreement that cavalry was still necessary in spite of its performance in the war. Haig noted that "the decision to preserve the cavalry corps has been completely justified" and whether used for shock effect or as mobile infantry the cavalry still had "an indispensable part to play in modern war." General John Pershing, an old horse soldier, agreed with Haig:

During this period [World War I] all arms had a chance for development and employment except the Cavalry, so that to some unthinking persons the day of the cavalry

1 "The Functions of Cavalry in the Great War," The American Review of Reviews, LVII (November, 1918), 531.

2 Boraston, Haig's Dispatches, 327.
seems to have passed. Nothing could be farther from the truth. 3

Major General Leonard Wood, former American Chief of Staff, also concurred. 4

The apologists had many excuses for the failure of the cavalry. Some claimed that the organization had been poor, 5 others that the weapons of the cavalry had lacked sufficient power for effective action and that too much reliance was placed on the sword, 6 and a few went so far as to assert that the proper employment of large cavalry forces would have made so-called positional warfare impossible. 7

In spite of their pleas it was evident that the failure was more basic. Modern warfare had shown that maximum fire power combined with maximum mobility was required; and better engines had been developed to combine these than could possibly be achieved with horse cavalry. Captain S. R. Cleaves, in Control of the Firing Line, understood the problem, but missed the utensil to solve it. He said that the cavalry had


6Parker, The Mounted Rifleman, 163-64.

to obtain "FIRE SUPERIORITY." But the tank, not the cavalry, was the utensil.

When this armored caterpillar vehicle proved itself on the battlefield, the days of the cavalry were over. In 1920 most cavalrymen believed that maximum mobility and maximum fire power were incompatible. For the cavalry they were; but with the tank they could be combined as soon as mechanical techniques were improved. The vulnerability of horse-flesh was solved by the tank as soon as advancements were made in the state of mechanics and ordnance.

The machine gun, against which cavalry was helpless, was itself helpless against tanks. Impervious to all but the most powerful machine guns, the tank could penetrate defenses difficult for infantry and impossible for cavalry and use its own machine guns to spread destruction. Planes were likewise armed with machine guns and small cannon. Against such fire power the cavalry could not compete on equal terms. It is ironic that the prophets of 1910 predicted that the machine gun and plane would help overcome some of the deficiencies of the cavalry; in the ultimate test they killed it.

One thing the war did end was the debate over mounted versus dismounted action. Only a few men still saw any future

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8 Captain S. R. Gleaves, *The Control of the Firing Line* (Fort Leavenworth, Kansas, 1918), 20.

in mounted tactics. There was not even much discussion about steel weapons. In short, shock for horse cavalry was a dead issue. The great war which the experts wanted to prove their theories had come; and it had proved that the arme blanche was nothing more than a thing to read about in military histories.

Those who may have seen the handwriting on the wall were advocating that the cavalry and the tank work together. Tanks would be of value in raids to carry supplies, in dismounted action to precede the cavalry, and in many other tactical situations. But such cooperation could be only transitional. As early as 1920 some writers believed in the superiority of tanks, and by 1927 tanks were obviously superior.

The failure of the cavalry in modern war was in a sense unavoidable. Men and horses had inherent limitations which machines did not have. Armor on horses had long ago been used; but it reduced mobility, and firearms had rendered it obsolete. Gradually shock action became difficult and finally suicidal.

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10 Haig was one as illustrated in his statement quoted above. See also Major C. E. Dashwood Stretton, "Cavalry in Open Warfare, Illustrated by the Operations Leading Up to the Occupation of Mosul in November, 1918," The Journal of the Royal United Service Institution, LXVI (November, 1921), 617; Lieut. Colonel John S. Barrows, "The Uhls and Other Cavalry in the European War," Journal of the United States Cavalry Association, XXVI (January, 1916), 396-398.

The only answer seemed to be to give the cavalry additional fire power, but the military mind was slow to awaken to the situation. By the time it did, the opportunity was past.

One question remains: Could the cavalry have done more than it did in the three principal wars of the early twentieth century? I believe it could, had military leaders risen to their opportunities. In some ways the most serious enemy of the cavalry was the officer at headquarters who had no imagination. The great debate verified the fact that the only thing more difficult than getting a new idea into the military mind is getting an old one out. Even experience would not awaken the old guard tacticians from their lethargy. As late as 1921 all they could do was describe the glorious deeds of the past. A British writer observed that the cavalry had had "a large share . . . in saving the Empire." But without change this same cavalry could also lose "the Empire" in another war.

Those favoring modification of the cavalry were most frequently civilians or young officers, men less interested in the past and more interested in existing conditions or in the future. Erskine Childers could well have been their spokesman when he wrote:

War is business, not romance, and if the same or better results can be produced by an intelligent and dashing use

12Liddell Hart, War in Outline, 70.

13Strettell, "Cavalry in Open Warfare," 600.
of the firearm, it is waste of breath to lament the decay of the lance and sword. 14

The younger officers believed that it is "only the result that matters." 15

On the other hand, military men could not, of course, be rash and disregard caution, as many of the reformers were eager to do. What was needed was a cautious and perceptive adjustment to modern conditions. The military has to be cautious, for it deals with men, not with inanimate materials alone. But the cavalry generals were too often lethargic or even reactionary, and a wide gap separates caution and lethargy.

The Civil War had begun the trend and the Boer and Russo-Japanese wars confirmed it: fire and movement ruled the modern battlefield. The cavalry had movement but it lacked fire. Its generals would not give it the weapons and training it should have had. Result: cavalry failed in the test of war. When the military did awaken, it was too late to save the cavalry, for other more effective means had made up for its deficiencies.

John U. Neff, in War and Human Progress, summed up the whole issue:

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14 Childers, German Influence, 9.
Progress has purged much warfare of the direct personal encounters which accompanied the struggles of olden times; it has dehumanized national conflicts, and the result has been a revolution which forms a striking part of the industrial revolution itself. While experts on military tactics and strategy are prone to say that the object of making war always remains the same—the annihilation of the enemy—it is certain that the character of the enemy to be annihilated and the means of annihilation have been changed. Whole nations are becoming targets. Material abundance has completely altered the stakes of diplomacy; the stakes now are all or nothing; total war, perhaps total death, is the alternative to peace.16

In total war horse cavalry could not survive. If nothing else, its failure proved that tradition and romance cannot win modern wars.

APPENDIX

DEFINITION OF CAVALRY TERMS

**Arme blanche**— Literally white weapon or cold steel. This term is French referring to the thrusting and cutting weapons used in battle. It is especially used in reference to the lance and saber of the cavalry, as distinguished from firearms.

**Cossack post**— These were the most advanced posts of an army (beyond the pickets), established to warn the main body of any impending danger. There were generally three Cossack posts to each picket. Each Cossack post had three men—usually cavalrymen. All three were dismounted, one serving as lookout and the other two remaining under cover with the horses. The troopers manning the post were always to remain within shouting distance of one another.

**Cuirassier**— Originally a cavalryman wearing a cuirass or breastplate. By 1914 the cuirassier had discarded his breastplate and was generally designated as heavy cavalry. The cuirassiers were mounted on heavy horses and usually employed principally in shock action.

**Detached post**— A post used for the same purpose as a Cossack post, the only difference being that a detached post was larger.

**Dragoon**— A soldier who served on horseback or on foot as occasion required. Dragoons were often the same as mounted infantry. Their purpose was to provide fire power for the cavalry before the advent of repeating weapons. The name dragoon as applied to mounted soldiers arose from the dragon's head which adorned the muzzle of the musket with which they were originally armed.

**Echelon**— A body of troops is in echelon with reference to another when it is more advanced or less advanced and unmasks or uncovers the other body, wholly or in part; units thus placed are called echelons.

**Foragers**— A formation in which mounted troops are distributed in line in extended order. Also troops detached to find forage.

**Heavy cavalry**— This type consisted of heavy men on large horses intended for shock action, such as cuirassiers.

**Hussar**— Originally a light cavalryman of a formidable character who first appeared in Hungary. Later the name was often used for troopers trained for scouting and the term was adopted by several armies.
Light cavalry— It consisted of small men on light and fleet horses, intended primarily for scouting not for fighting. Hussars were a type of light cavalry.

Medium cavalry— This type was to be capable of scouting as well as some fighting.

Mounted infantry— It was just what the name implies: infantry soldiers who had horses so as to be more mobile. Mounted infantry was not trained to fight on horseback, and thus many criticized it as of little value. Dragoons were often mounted infantry.

Patrol— A group detached from a command and operating with specific mission, usually related to security or information. The term is ordinarily applied to groups varying in size from two men to a platoon.

Picket— A guard to warn of the approach of the enemy. The troopers who manned the Cossack posts, detached posts, and vedettes were generally taken from the picket.

Rally— The rapid grouping behind the leader of the elements of a command, without reference to their previous situation or formation.

Steel weapons— This term is used here only in reference to the lance, the saber, and the sword.

Vedette— It was used instead of the Cossack post when there was a shortage of men. It consisted of only two men and had the disadvantage that there was not a spare man to take back messages.

Uhlans— This term was restricted to the German army. A uhlán was a cavalryman and lancer used primarily for shock action. Along with the cuirassiers, the uhlans were the heaviest of the German cavalry.

SIZE OF CAVALRY UNITS

Troop— The smallest administrative unit in the United States cavalry. At full strength it had 100 officers and men. It was equal to an infantry company in numerical strength.

Squadron— This unit was the basis of all foreign cavalry organization. It numbered on a war footing from 120 to 150 sabers. An American squadron consisted of four troops and at full strength totaled 400 men. Thus a foreign squadron was only between one third and on half the strength of an American squadron.
Sotnia—This was a Russian unit which equalled one-half a regiment.

Regiment—An American regiment consisted of three squadrons, which at full strength totaled 1,200 officers and men. Foreign regiments contained from three to six squadrons which put the strength of a regiment less than one-half of an American regiment.

Brigade—A unit which comprised two or three regiments. In the United States two regiments made up a brigade.

Division—A unit which comprised two brigades. All nations did not have their cavalry officially organized on the divisional level.
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ENCYCLOPEDIA ARTICLE


NEWSPAPER

be a cheat. Fowles was convinced of the curative power of his medicine, although he didn't claim to know why it worked. He only said it had cured many pains in cases where physician's remedies had failed. He gave Ryder a list of names and addresses of people he had cured. Ryder commented, "it strangely encouraged me to take this medicine and even raised my spirits with the thought of it to hear him talk of its virtues and the cures it had performed." He got the medicine on July 23, began taking it, and by July 25 was convinced that the pain was less and was encouraged to think the medicine was good. By the next day, however, the arm was worse, and he was beginning to have his doubts. By July 28 he was still taking the medicine, but said, "I don't find this medicine does me any good or in the least removes my pain." Two days later he was willing to try the blue flannel with deep dye. The cycle from regular physician to quack to home remedies had run its course.

He always had the layman's interest in things medical, frequently reporting his conversations with doctors. He went often to Islington Spa to purge his blood, and credulously reported that a doctor there had said that the waters were excellent for leprosy. He recorded the story of
Captain Pierce who said he drank the waters for a pain in the chest and was incidentally cured of deafness. He was acquainted with a Mr. Porter whom he like "extremely well for an apothecary." Ryder felt Mr. Porter was a perfectly honest man who "would in every respect prefer his patient's health before his own gain." The apothecary advised him to study physic for diversion, beginning with the monthly anatomy lectures which were delivered by the best physicians.

This diary seems to hold in microcosm the peculiar elements which made up the relations between public and physician in the eighteenth century. Basically Ryder trusted the regular doctors, having a high, almost credulous regard for their knowledge. A licensed physician was his first choice for consultation for relief for his sore arm. It was only when this failed to produce results that he turned hopefully to the quack. Nevertheless, he did turn to the quack, and here is the trend which was so uniquely accentuated throughout the eighteenth century. Ryder only half believed that the empiric's medicine would do him any good, but when his malady persisted after the original treatment, this was enough to make him consult.
the quack. When the quack also failed to cure his arm, he resorted to the home remedies recommended by his father and cousin. By this time he had no real hope, but would try almost anything that would do him no harm. He seldom mentioned the arm after that, and one must assume that he either learned to accept his trouble and live with it, or that nature in due time effected a cure. His attitude toward the apothecary is interesting as a reflection of the general public opinion. Mr. Porter was nice enough for an apothecary, a rather significant qualification. Both Ryder's and the apothecary's interest in the anatomy lectures are typical of the period when intellectuals were amateur scientists, and apothecaries were genuinely trying to elevate their position by becoming better educated.

In many ways the eighteenth century was disappointing. One was entitled to expect greater progress after that which had been made in the previous century. But out of the trials and errors of the 18th century came genuine progress. By a synthesis of the various rational systems with the experimental approach of the empirics the foundations of scientific thought, methods, and accomplishments were laid. Though empiricists and charlatans were only too numerous, physicians were appearing whose knowledge reposed on a scientific basis. They realized the truth that anatomy, physiology, and pathology were the basis of
all medical study. Fortunately by the end of the century they also realized the greater truth that their work had only begun when they treated physical ills. The breach between the public and the physicians tended more and more to resolve itself as physicians accepted the rules of conduct laid down by Percival, and as they became ever more involved in the humanitarian works of the day. When the political upheavals of the late eighteenth century subsided, humanity discovered that the basic rapport between physician and public had been re-established and that the foundation had been laid on which could be erected the structure of modern medicine.
CONCLUSION

Any outline of the early development of a science or of an art and of the attitude of all interested persons, no matter how fairly presented, is apt to raise in the mind of the reader time and again the question of "how simple can those people be?" Such questioning should be summarily dismissed. No one at the beginning of the seventeenth century knew that blood circulated. How could he have known even the simple physiology of the body? He had no idea of microscopic organisms. How could he possibly have understood epidemics? The list could be extended endlessly. Rather, should not all classes be complimented for such mental dexterity as they did show? The quack in most cases was bound to have experimented with many things before he settled upon his particular cure. The rationalist, not understanding how the body functions or that invisible organisms invade it, could only conclude that in cases of illness some "humour" in the body itself must be at fault, out of balance. The astrology of that day, far from being laughable, was really a compliment to the ingenuity of those who were looking to God's heaven itself for a clue as to how God controlled the health of his people. One should not take sides, or be too critical, or expect too much to be accomplished.
Literally every one is and was interested in health. When a science or an art is young, and interest in it is widespread, almost every one will have some idea or interest. Measurable progress must await the expression of these views and the conflict which follows the clash of adverse opinion. The thinking which will ultimately prevail may go ahead too fast and be momentarily discredited. The views which will fall by the wayside often light the true course. Finally the science and its practice will find their way into the hands of those who know them best, and these persons will administer them as a public trust.

It may safely be said that relations between the medical profession and the public reached a crisis during the Enlightenment. The reasons for this are scarcely tangible. Physical medicine was not responsible for the poor relationship. The public did not complain about the treatment, the medicine, the diagnoses of the physicians; rather, they resented the physicians themselves. Medical science had made great strides in the seventeenth century. If it failed to maintain its pace in the eighteenth century, at least the science and practice of medicine were no worse than they had been for centuries, and for the most part showed a general improvement. When one considers the medicine practiced in the period, it is easy to decide that a sane public must have become horrified at
the ignorance and barbarous practices of the medical profession. Such was not the case. The cause of public resentment lay not with the blood-letting, the purges, the multitudes of drugs, or the inability to make a sound diagnosis. They were accustomed to such practices and did not expect anything better. The source of friction was something less palpable. It was in fact a generalized sentiment on the part of the public that the physicians were interested only in making money, and that the patient with an illness which was very crucial to him was only a dollar sign to an ambitious, money-minded medical profession.

In Boswell's *London Journal*, written in 1762 and 1763, he recorded, "and here let me make a just and true observation, which is that the same man as a friend and as a surgeon exhibits two very opposite characters. Douglas as a friend is most kind, most anxious for my interest, made me live ten days in his house and suggested every plan of economy. But Douglas as a surgeon will be as ready to keep me long under his hands, and as desirous to lay hold of my money as any man. In short, his views alter quite. I have to do not with him, but his profession." Whether this was a just assessment of eighteenth century physicians is beside the point. The important thing is that Boswell, and indeed the general public in his day, believed that
the physician was primarily interested in his own material welfare, rather than that of his patient. The public during the Enlightenment felt cheated by the doctors, not so much in a physical sense, as in a personal sense.

We are back to the basic proposition that medicine is unique in being both a science and an art. When the scientific side is overemphasized, the public will not tolerate it, and rightly so. The medical advances of the seventeenth century caused many a physician to consider himself the enlightened possessor of an almost esoteric bit of knowledge. As one of the few who knew the magic secrets of human anatomy, physiology, and pathology, he could afford to affect considerable dignity. Once science was on the throne, the physician tended too often to forget that he also was not there, but was alongside his patient.

Human misery always has been and always will be a compound of the physical and the mental and the spiritual. When the physician forgets this and tries to treat only a material machine, he will meet resentment. He will be amazed that the patient should complain about his bill when he has received the best medical care available, treatment which his grandfather or even his father could never have had. Mr. Douglas, Boswell's surgeon, no doubt felt that in treating Boswell as scientifically as possible he had
done all that was expected of him as a doctor of physical medicine. Perhaps on the day that Boswell consulted him, he was upset over his brother's recent death or the fact that his money might not last until the end of the month, or perhaps he was more deeply upset and frustrated over the meaning of life and what he felt should be his own life's goal. Had Douglas been less brusque, treated him as a human being, asked him if he had some special trouble weighing on his mind, Boswell might not have left in a critical, unfulfilled frame of mind. But Douglas missed his chance, and when the frustrated Boswell left the office and saw the fancy horse and coach waiting outside for Douglas, all his resentment was released in the unreasonable, but quite natural, feeling that Douglas was getting rich at the expense of his, Boswell's, misery.

The age of Enlightenment in its early enthusiasm for science pushed to the background the concern of the doctor for what his patient was thinking. Medicine can never be a pure science as long as it deals with individual men. By the end of the eighteenth century the medical profession had come slowly to grasp this idea. Throughout the next century relations between the medical profession and the public slowly improved until the family doctor became almost a hallowed individual. When he sat through the night at the bedside of a sick child, he might do little
more than when he sipped coffee at the local coffee house and offered his advice to the apothecary. But what a different effect it had on the public. The doctor was not criticized because people felt that he was sincerely doing the best he could, and this was all that could be hoped for. This is not to say that the doctor should put on some act to fool his patients. Rather that showing his genuine concern for the patient is as integral a part of the treatment as the medicine itself.

Public relations between the medical profession and the public are once more at a crisis. Though the specific conditions are very different from those during the Enlightenment, the general outline of the situation is strangely familiar. Science has made such great strides in the first half of the twentieth century that the physician too often has forgotten again that he must treat the whole man, the mental-spiritual as well as the purely physical ills. The two simply cannot be separated. The public today has fond memories of the old family doctor, mentioned above, who sacrificed himself for the community, riding his horse for hours to reach the bedside of a sick person, accepting a small fee, a chicken, or nothing at all depending on what the patient could give him. We have read of such men dying with $100000 worth of unpaid bills on their books.

Today there is antagonism toward the high doctor bills
and the specialist who will treat only one small portion of the body. The public feels that once again the doctor considers himself a king and is more interested in his own financial gain than in the welfare of the patient. Actually the public can see that with the advance in medical science, the price of treatment would naturally rise correspondingly. The old family doctor could prescribe castor oil for an abdominal pain, and nine times out of ten he would be right. Many persistent abdominal pains are functional, and castor oil would be as good a treatment as any. However, in that tenth case the old general practitioner might miss a fatal malignancy which could have been arrested if caught in time. Today the physician is obliged to run expensive tests lest that one case escape him. A great majority of the time the tests will prove negative, and the patient will complain about paying a doctor who "found nothing." I would suggest that just as the eighteenth century complaints about medical fees had their basis in a deeper resentment over the lack of humanity of the physician, so might ours today. The patient is really too sensible not to realize the reason for expensive tests, and should be pleased when the results are negative. He is rather upset because he had to wait for an hour in the doctor's waiting room to be finally told that there was nothing wrong with him. His anger manifests itself in a feeling that he has
been overcharged.

Likewise the feeling against specialists has a subjective basis. The public will admit that with the vast amount of medical knowledge now available in every field of medicine, it would be humanly impossible for a busy general practitioner to keep up to date in all fields at once. It is difficult enough for the specialist to keep up with the literature in his own field. Actually what the public resents is the same thing it resented two hundred years ago. It is not that a physician treats only one part of the body. It is that regardless of his specialty he forgets that his patient is a person. In considering and treating the physical symptoms, the busy physician feels he has done all that can be expected of him. But history has proved that he is wrong.

There are other points of similarity between the mid-twentieth century and the Enlightenment. Once again there is a scarcity of physicians with no hope that the condition will be improved. There are far too few medical schools, and the training is unbelievably long and expensive. The American Medical Association is acquiring a reputation for being reactionary, much as did the College of Physicians in England. The public feels that this exclusive guild is far more interested in the doctors' economic welfare than in the patients' physical welfare.
Once again the fault is not all with the doctors. The public in generalizing their grievances against the profession as a whole, does a heart-breaking dis-service to the hard-working individual physician who has given unstintingly of his time, not that he might amass money, but that he might cure the sick. The resident physician, who has worked thirty-six out of every forty-eight hours for four years and who will not make a living wage until he has been out of college for twelve years, is not too sympathetic with a dissatisfied public. He feels that medicine is one of the last professions that one would enter if his prime motive were financial gain.

Clearly however there is a crisis, and it must be reconciled as much for the benefit of the conscientious physician as for the public. We are facing a breakdown in communication between doctor and patient. This alienation has occurred because we are at the same time the beneficiaries and the victims of scientific advances. Progress in medicine has posed a threat to the art of medicine as the healer's compassion and intuitive skills have been replaced more and more by scientific analysis. This alienation is especially tragic at this point in human history when our need for guidance and support is greater than ever, inasmuch as the traditional supports of church and family have been weakened. We can only hope that history again may repeat itself and that medicine will enlarge its skill in the field of human relationship. This is fully as important
as finding cures for the diseases still plaguing mankind.
The overriding challenge is to learn the proper proportion between the science and the art of medicine.
CHAPTER II

1 Information on the state of medical science in the seventeenth century is largely from Arturo Castiglioni, A History of Medicine (New York, 1947), pp. 504 ff.


3 Howard W. Haggard, Devils, Drugs, and Doctors (New York, 1929), p. 263.


6 Thorndike, op. cit. p. 447.


8 Descartes, pp. 75-77.

9 Thorndike, History of Magic, VII, p. 244 ff.

10 Examples are from Thorndike, op. cit., VII, p. 539 ff.


22. Sigerist, op. cit., p. 34 ff.

23. Dekker, op. cit., p. 36.


30. The following examples are from Thorndike, op. cit., VII, p. 408 ff.


CHAPTER III


King, op. cit. p. 27.

King, op. cit., p. 235.

King, op. cit., p. 236.


Peck and Wilkinson, op. cit., p. 113.


King, op. cit., p. 39 ff.

King, op. cit., p. 51 ff.

Hill, op. cit., p. 2.

24. King, op. cit., p. 34.
33. Cheyne, op. cit., p. 32.
36. Lalarpe, op. cit., p. 313.
40. Ryder, op. cit., p. 284.

CHAPTER IV

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