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

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THE ARAB HORSE.

BY CAPTAIN A. M. GRAHAM, Q. M. CORPS, (CAVALRY).

AS a preliminary I wish to state that this is not intended as an educational article, nor is it claimed that all statements there are not opened to argument. It is merely an expression of my own opinion regarding the most desirable, to my mind, class of horses in existence, the Arab.

When Colonel Frank Tompkins, then Major Thirteenth Cavalry, went into Mexico, he rode Kingfisher, a seven-eighths Arab, one-eighth pure bred, stallion. His striker rode Colonel Tompkin's second horse which was about three-quarters bred American horse. Kingfisher stands about fourteen and one-half hands, weighs about 925 pounds. These figures are estimated. Colonel Tompkins weighs about 165 pounds.

The trip taken by Colonel Tompkins in Mexico was one of the two very long continuous trips made by the American cavalry under General Pershing, and was made on very short rations for both man and beast.

Most of the officers on the expedition had two horses, and favored the best one in every possible way consistent with the nature of the trip; walking and leading whenever possible, resting him and riding the second mount, *rustling* a little extra feed, etc.

Colonel Tompkins was making a real test of Kingfisher and did not favor him in any way. He rode him every day of the trip, all day.

When the rest of us saw with apprehension that our favorite mount was daily getting a little thinner, a little duller, and a little weaker, there was practically no change in Kingfisher. He possibly lost fifty pounds in weight on the trip, but otherwise, he was the same old Kingfisher. He looked just as thrifty and healthy as when he started out from Columbus, New Mexico.

Our prize mounts without exception, showed strong signs of the wear and tear of the expedition, but not Kingfisher. When I speak of our *prize mounts* I mean exactly what I say, for several of the animals on this expedition were magnificent animals, and when cared for as they are accustomed to be cared for, and used for the purposes for which they are fitted, would be very hard ones to beat. Nearly without exception, they were fine specimens of the pure bred horse or at least seven-eights pure bred.

When the Howze column joined the commands of Colonel W. C. Brown, Colonel H. C. Allen, and Major Frank Tompkins at Santa Cruz de Villegas, Mexico, I think it was April 13, 1916, I had an opportunity to look over the horses of all of these commands. I did not see an animal in any of the outfits, although half of them had not gone through nearly as much hardships and hard *hikes* as Kingfisher, that had nearly the normal appearance that he had, or that really looked perfectly *fit* as he certainly did. I repeat, that with the possible difference of fifty pounds in weight, he looked and acted exactly the same as he did before and after the expedition. While every other horse that I saw there looked rough and *gaunt*, I could see no difference in Kingfisher.

I made inquires as to how much of the time Kingfisher had been led on the trip, and also as to whether he had been favored with extra feed when forage was short, and found as follows:

Kingfisher had *been ridden* the entire trip, and not only that, but had repeatedly been given extra riding here and there away

from the column. Kingfisher had received just the same amount of feed as the other horses.

I asked the scouts with Colonel Tompkins, the Surgeon, and also his striker, many questions regarding Kingfisher, and all were absolutely and unreservedly enthusiastic over him. They said he ate less and drank less than an ordinary horse, and kept in far better condition than other horses that were doing the same work. When a Western cowboy will acknowledge that there is any horse living that can beat the Western pony at his own game, it is indeed a very great concession, but this is exactly what our scouts did.

On several occasions I talked to different ones of the scouts that we had in Mexico about the Arab horse. These scouts were mostly fine types of well educated, scientific stock raisers, and without exception they gave the Arab horse the credit for the wonderful qualities that the better type of Mexican pony has. They told me that all of the big ranches in Mexico used their pure bred or part bred Arab stallions, if they could get them, to improve the strain of horses. I doubt if better native ponies were to be found anywhere than the Mexican pony before the revolution started about 1910.

For years our officers have conceded that the Western cow-horse was a marvel for his kind of work, and that his endurance was unbelievable. I think that it has been generally conceded that these same cow-ponies are direct descendants of the Arab horse, brought from Europe by the Spaniards many years ago. If these Western *Cayuses* that are Arabs *gone to seed* show such wonderful qualities why should we entirely overlook the possiblities of the Arab cross to obtain some of the wonderful qualities that we all acknowledge the Arab has?

The pure bred horse is undoubtedly a wonderful animal for the purpose for which it is bred, *i. e.*, speed. To be a real race horse, he must have dauntless courage and great power. In the old days of three and four mile races, these horses were entirely a different type of animal from the present day type of weedy animal that is good for nothing except one sprint, seldom more than one and one-eighth miles. His days work is then finished, and he is carefully rubbed down, cooled out and otherwise pampered until he has degenerated into a delicate speed machine

that knows nothing of rustling for himself, and standing hardships day after day. The old "four miler" was a horse with plenty of substance and bone, plump, full well muscled quarters, big chest, and well muscled forearm. He had endurance as well as speed. Even granting that he had the qualities outlined above, he had not been required to shift for himself, and had been born and raised to a life of care and comfort. The result of this is that when it comes to a "show down" on a long continued trip with very little to eat, bad weather, and very little care and attention he *isn't there.*

A large horse, as most pure breds are, is not fitted by nature for rough and mountainous traveling. He is generally rather high strung, and instead of picking his way through difficulties, tries to *bull* his way through, expending twice the amount of energy necessary. We are all on the lookout for a good *pony built thoroughbred* with substance, breeding and speed, but *there ain't no such animal.* On the very rare occasions that you *do* find one, and *price* him, the subject is changed very soon afterwards, as the price is absolutely prohibitive. Even at that he cannot go out on the desert and compete with the Western descendant of the Arab. He may go further in a day, but he will not in a month, because he makes twice the work of the same job as the small horse does, needs twice the feed, and does not know how to *rustle* for it.

The Arab horse is a distinct *type* and seldom departs from that type. I believe that the Arab breeds far *truer to type* than any other breed of horses in the world. If the average pure bred horse bred *true to type* it would be a misfortune for the Army, as very few are in any way the type desired. If one could get an average composite picture of twenty *thoroughbred* horses chosen at randum, would it show a good type of cavalry horse? I do not believe it would. On the other hand, I believe such a picture of Arab horses would show an ideal type for cavalry, and I doubt if any of the twenty would depart very far from the composite picture.

I am not posing as an authority on horses, I am merely stating a few of my own opinions, which are not copyrighted, but I have never yet heard an argument borne out by facts that convinced me that the Arab *type* was not the ideal type for

army use. Nor have I ever heard of an Arab that *fell down* when put to a test.

Since I was a boy my ideal horsedom has been the Arab. I have never owned one merely because the breed has been so neglected in the United States that they are very scarce and valuable, and pay day only comes around once a month, but that has not prevented me from wanting them. I believe that they have to a far greater extent than any other breed, all the qualifications that are required for cavalry horses. We copy many things from Europe that seems rather unimportant. Why not copy and profit by their experience with the Arab horse? The European governments are yearly spending millions of dollars raising Arab horses, and crossing them on other breeds, and I do not believe they would stick to it unless they liked the results.

Some of you that waste your time reading this article, probably do not agree with any part of it. That is as it should be. We are all entitled to our own opinions, and I am not trying to override yours, neither do I expect to have you convince me that I don't like an Arab horse above all others.

WHAT HORSE FOR THE CAVALRY?

By VARIOUS OFFICERS.

Colonel Clyde E. Hawkins, National Army:

FROM a practical point of view the type of horse for the cavalry depends upon what the country has to afford. In theory we might want a certain breed and a certain size of horse, but it is a well known fact, especially at the present time, in an emergency, we must use the horses produced in our own country.

Before the advent of the motor car, horses for saddle purposes were used in large numbers and bred for saddle purposes throughout the counry. Naturally they produced in many different sections of the United States a cons derable number of animals suitable for cavalry purposes. However, at the present time, on account of the wide use of the motor car and buggy, very few people ride for necessity. As a natural result horses are bred for the purposes demanded by the market. This means, first, heavy draft horses; second, medium draft horses; and third, driving horses. Saddle horses are still used in isolated places, especially in mountainous regions and by a few who ride for pleasure or are interested in polo or racing.

Thoroughbred Horses.—The tight made, big boned, well developed thoroughbred, such as was demanded by long hard flat races, steeple-chases and cross country riding, is undoubtedly the grandest horse extant today. On account of the gambling game, short races, and light weight carried the great majority of thoroughbreds throughout the country has greatly deteriorated into a horse totally unfitted for cavalry service. Consequently very few thoroughbreds of the first mentioned type can be obtained and therefore their use in the cavalry service in large numbers at the present time is out of the question. However, the best type of thoroughbred horse always makes a

high class officer's charger and cross country horse. They are hard to obtain and few in number. In my opinion the thoroughbred is too hot headed for use of the enlisted man and therefore should not be considered, even if obtainable, for the average enlisted man.

Standard Bred Horses.—This horse, when selected with proper type, tight made, good bone and well muscled throughout is a grand horse. He makes a first class cavalry mount. He usually develops good gaits at the walk, trot and gallop an invariably gives a good account of himself in every way demanded by the cavalry service.

The Saddle Bred Horse.—The saddle bred horse, in my opinion, is not adapted to the cavalry service for the following reasons:

First.—He is a gaited horse, which is undesirable for the cavalry mount.

Second.—He is usually high-headed and low in the back and does not gallop well and especially is a poor horse across country and over jumps.

It has been my experience that the gaited horse is the first to give out on long hard marches.

The Arab Horse.—This horse is small but when compact, tight made and well muscled, and if large enough to carry the weight, undoubtedly will make a very good cavalry mount. Of course it is well known that in this country there are not sufficient numbers of them to consider for any purpose in the present emergency. As a rule this horse is too small, but undoubtedly by proper crossing larger types would result and the horse improved for cavalry purposes.

Morgan Horses.—The so-called Morgan horse is almost extinct in the United States, but undoubtedly was a high class small horse, and if they could be obtained in sufficient numbers would make good cavalry mounts. However, they have never done anything which could not be equalled or excelled by the standard bred horse.

Cleveland Bays, The German Coach Horse, French Coach Horse and Various Other Types of Medium Draft.—Among this class many excellent horses may be found of proper type for a

large cavalry horse, but as a rule they will be found more suitable for field artillery.

Draft Type.—This type need not be considered except for use in field and heavy artillery. However, even in this type a few high class cavalry horses are sometimes found. Sometimes a Percheron mare is crossed with a thoroughbred stallion and a fine horse of large hunter type is produced.

In my opinion the whole subject can be summed up in a few words; a good horse is a good horse and a poor horse is a poor one. Both of these classes can be found in any breed and therefore to say that any one breed of horse is the only one, to my mind is ridiculous. In selecting horses suitable for cavalry mounts type, conformation, disposition and soundness are the principal things to be considered.

Proper Type of Cavalry Horse.—The cavalry horse should be well bred, tight made, well muscled, large barrelled, strong loins, well developed hips and thighs, fairly broad chested, medium withers, sloping shoulders, large bones, good feet of medium size, straight normal legs, well set and properly directed, sound in wind, limb and body, fine as opposed to draft or logy type, but far from delicate and weedy, of prompt action, gentle but with spirit and vigor as denoted by his mien. Large wide strong knees and hocks, lean in appearance, rather short wide cannon bones, with ligaments and tendons well outlined and well attached, are very important. The Median line of the front leg, as viewed from the side, should pass through the middle of the fore-arm, knee, cannon bone and fall at or near the heel. The Median line of the fore leg as viewed from the front, should bisect the leg and the hoof. The Pastern should be neither very long nor very short, but medium in length and have the same angle as the hoof of the foot in normal condition. The fore-arm and gaskin should be well muscled and well developed. The cannon bone of the hind leg in the normal horse with the best conformation is nearly straight or slightly inclined to the front. The legs, their condition as to soundness, and their direction, is of prime importance for a saddle and weight bearing animal because an animal with one defective foot or leg is not worth considering, even though he may be perfect in every other respect.

Size.—This is a difficult matter to definitely prescribe. The best in general is the medium, neither very small nor the very large, the same as in man. However, there are many exceptions to the rule. First class horses for cavalry service in every particular are found both below and above the medium, depending entirely upon the individual. If we were to say just what size of horse was best adapted for the cavalry service we would have to say about fifteen hands two inches, this being a medium of all considered. There is no doubt whatever in my mind but what many horses ranging in size from fourteen-three to sixteen-two are first class cavalry mounts in every respect and will do all the work required of them. In each case it depends absolutely upon the individual—his type, conformation, etc.

I am in favor of cavalry horses from fifteen hands to sixteen hands in heighth. The inspector to have authority to accept horses of excellent type, conformation and qualifications as low as fourteen-three and up to sixteen-one, depending entirely upon the individual animal presented. After much observation I believe the best horse for type, conformation, gait, disposition, etc., in the cavalry service, is the Grade Thoroughbred, that is a horse bred by a thoroughbred sire and a good mare (probably standard bred) thus giving what is usually known as a "Half Thoroughbred."

Personally I have had very little experience with the Arab type, but since he is the progenitor of the thoroughbred horse I believe the blood is correct, but that the size should be increased somewhat by cross breeding. The thoroughbred horse under arduous field conditions is satisfactory only when he conforms to the tight made, big boned, compact kind and of proper disposition. The average thoroughbred as produced in this country today is useless for the hard conditions of campaign.

Weight.—The weight of the cavalry horse depends to a certain extent upon the burden which he must carry. In general a horse should not be expected to carry more than one-fourth his own weight. The average cavalryman, saddle, arms and equipment complete for field service will weigh about 250 pounds. Therefore, a cavalry horse ought to weigh from 1,000 to 1,100 pounds. It is true, however, that there are small

horses having very good legs, conformation, strength and vigor of 900 pounds in weight that will carry the cavalry load, but an animal of this weight must be peculiarly fitted for the task. In my opinion the minimum weight for cavalry horses should be 950 pounds and the maximum about 1,150. Cavalry horses should average from 1,000 to 1,050 pounds in weight.

Bone.—The cavalry horse should be rugged and vigorous and have good bone. Among cross country and jumping horses that have stood this hard test for many years without breaking down the measurement of the cannon bone below the knee has invariably found to be eight inches or more in circumference and the girth measurement at least seventy inches, generally more; indicating a large barrel and great lung power. The minimum cannon bone for a weight carrying horse is seven and five-eighths inches. The minimum girth sixty-eight inches.

Small Horse.—Among small horses a few of excellent types, and conformation are found but the great majority are not worth considering for cavalry horses. The few of excellent type and conformation are very good and can do the work.

Large Horse.—A large loose jointed, more or less awkward long backed, heavy gaited driving type of horse is no good for any purpose.

Driving Type.—This is a horse very commonly found and frequently presented to inspectors for cavalry purposes. He is a narrow, long legged, long backed horse, generally thin necked, with high withers, cut up behind, lacking in barrel and type and muscular conformation that would even indicate weight carrying capacity. As a rule he has sufficient breeding, usually of the standard bred type, but is not compact nor tight made and is of a delicate appearance. It is only the compact tight made muscular horse that can carry weight and live on short rations.

Cow Pony.—The small cow pony, when he conforms to proper type and conformations, is undoubtedly an excellent cavalry horse. Like other small horses there is one good one to about three that are of no use.

As is well known the cow-boy, if he has any particular amount of riding to do, has a string of five or six; he rides one generally beyond its endurance, which appears to be a remarkable ride, casting him aside and mounting another. It is in this way, with the number of horses he uses, he can make a great showing at long distance riding. The principal asset of the cow pony, in his own country, especially in the South and Southwest, is the fact that he is thoroughly acclimated and accustomed to forage on anything he can pick up. The cavalry horse of the Middle West properly fed and nurtured to maturity and then acclimated will, in the same country, kill the cow pony. The whole point made here is that horses brought from the North and Central part of the United States to the South and Southwest where the climate, forage and conditions are entirely different must be acclimated before they can be expected to do proper work. To say that the little horse of the cow pony type is better than the larger horse, to my mind, is entirely erroneous.

During the recent expedition from Columbus, New Mexico, into Old Mexico many remounts from the Middle West were used. It has been reported that many of these animals were shipped to the Border and sent into Mexico while yet suffering from shipping fever and diseases resulting therefrom without ever having been quarantined or acclimatized in any way, shape or form.

Brigadier General Guy Carleton, National Army:

To begin, I am very sure that no officer who has had an opportunity to see and ride the thoroughbreds at Fort Riley will ever think of the thoroughbred as a "weedy, small-boned, contracted barrelled racer." It is unfortunate that the latter type of horse is in evidence in the army and has given the thoroughbred a bad name; it is still more unfortunate that Front Royal has produced a good sized crop of them.

As to the best type of horse for the cavalry to be obtained by scientific breeding I am convinced that we can get courage and endurance only from the thoroughbred. These two qualities are essential in the ideal cavalry horse as well as size and weight. I am one of those who have steadfastly maintained that in modern war the rifle and not the horse is the cavalry-

man's most important weapon, and that, therefore, it was wrong to train cavalry principally for the mounted charge, but I am just as convinced that good cavalry that is looking for it will find its opportunity on the field of battle not only for the charge against cavalry but, occasionally, where daring has won its greatest successes in the past, against infantry.

For the charge, and in a less degree perhaps for other work, we need in the horse courage, endurance, size and weight. I don't know where we can hope to get them except from thoroughbred blood.

Colonel T. Q. Donaldson, Inspector General:

I favor a horse from fifteen hands to fifteen hands two inches in height, with proportionate conformation, and, in exceptional cases, slightly under fifteen hands, my reason for this being, from my observation and experience, that a horse of this size of good conformation has more endurance, costs less to feed, and, in general, gives less trouble in the field than horses which are, on an average, taller than this.

I have had no practical experience with the Arab type, either as owner or observer, and all I know about a horse of this type has been gained from what I have read on the subject. From this reading, however, I formed the impression that some Arabs blood in our cavalry horses would be very desirable, for it appears that the Arab transmits to his descendants two qualities that are important in a cavalry horse, namely, endurance and courage.

I do not favor the cold-blooded horse, but I *do* favor the part thoroughbred, and I believe that the half-bred, or three-quarter-bred would give the best results, this, for the reason that the cold-blooded horse is sluggish, often vicious, lacks endurance and breaks down easily in the field, and the part thoroughbred, or half-bred, would not be subject to these defects.

I have never ridden a thoroughbred horse under field conditions, but I have been on long marches and in the field with officers who have ridden them, and my impression formed from observation of these animals was unfavorable. I believe them

to be unduly sensitive, that they require more care than can be given them, and that they are too nervous for officers' chargers. I noted, while reading the accounts of officer in "Battles and Leaders in the Civil War," that the majority of the Southern Officers who spoke of thoroughbreds, stated that they were not well suited as cavalry mounts for the reason that they were too high-strung, and could not be controlled in action.

Colonel Alonzo Gray, Sixth Cavalry:

Regarding the matter of the best type of cavalry mount, I think very few will disagree with Major Tompkins. While my personal experience is limited, I had a very excellent opportunity to observe both types of horses while on duty in the Inspectors Department. The thoroughbreds which I saw were mostly race horses bought off of the Juarez race track. They all ran up light in the barrel and were unsuitable for carrying weight.

In the early part of my service I encountered many horses in cavalry troops which were raised in the mountains of New Mexico and Arizona which gave splendid satisfaction as weight carriers and for endurance. My old horse "Stub" was of this type. He recently died at thirty-one years of age after I had owned him twenty-eight years.

This type of a horse was in size about the same as the Arab which Major Tompkins is devoted to, but not so finely turned. His ancestors were unknown and the type itself was collected from the thousands of horses running in the western country. The difference is that the Arab will breed the type while the others will not.

The proposition of the circular letter seems to present the question as to whether we will breed up from the Arab or down from the thoroughbred to get the desired type. It is more to the point to inquire as to who will do the breeding. The answer is that if it is done at all, it will be done by the army as a part of the preparedness scheme. Civilian breeders will certainly not touch the question.

I favor horses between fifteen hands and fifteen hands two inches in height, but I recognize the fact that there are many desirable horses both larger and smaller than this. The question is one of proportion accompanied by the necessary activity and endurance. Probably ninety per cent. of the desirable horses are between these limits. Above fifteen hands two inches such horses are very rare. Below fifteen hands are found many good horses, but few are capable of carrying a load of 250 pounds on a protracted campaign. Unless the Government undertakes the breeding of horses, I consider the question a purely academic one because, at the present time, we are forced to take what we can get.

Colonel E. W. Evans, Cavalry:

I favor a horse fifteen hands two inches or under. I had both these and the larger horses in my command in Mexico, and I think that the smaller horse was the more adapted to hard work on short feed.

I have observed the Arab horse owned by Major Tompkins both in the Post and in Mexico. He was for a time, kept on one of my picket lines immediately after his return from the South, and was then in fine condition.

I prefer not more than half-breed for the reason that while the breeding gives courage and nerve, the finer the breeding, the greater amount of care and feed is necessary to keep him in condition.

I rode a registered Kentucky Saddler for the first six weeks in Mexico. He was not sensitive, prone to disease nor injury, nor otherwise unsatisfactory, except in that by the end of that time, he was done for. I rode him every day and like everything else, with breeding, he stood up as long as he could. He worked for all there was in him and as long as he could, and then I had to stop using him. He will never be fit for field work again.

Lieutenant Colonel J. S. Fair, National Army:

The minimum height of the service horse for cavalry should be fifteen hands. There are more good horses between the heights of fifteen hands and fifteen hands three inches than any other size. There are a few good horses of the blocky type under fifteen hands. I have had an opportunity during the past year of observing more than 30,000 horses, many of them under fifteen hands in height. Not more than ten per cent. of the animals under fifteen hands had a suitable conformation to withstand field service. It is my opinion that we should permit buying of cavalry horses under fifteen hands; we could buy very few of the blocky type which alone are suitable for cavalry purposes.

I have had no experience with the Arab type, but my impression is that we are likely to overestimate the value of this type, because we have observed the work of a very few of them and these have been stallions.

I favor for the cavalry any animal that has the proper conformation, whether he has thoroughbred blood or not. One of the best horses I have ever seen is the half-thoroughbred, half-Morgan.

I have never ridden a thoroughbred horse under arduous field conditions, but I have observed many of these horses under such conditions, and believe that they require extraordinary care and attention to keep them in as serviceable shape as the ordinary horse.

Colonel J. C. Waterman, Cavalry:

I have had no experience with Arab horses; neither have I ridden a thoroughbred horse under field conditions, but have seen the latter under such conditions on the border, at Hachita, N. M. In my opinion he has not been satisfactory; the officer, for hard work, riding frequently, a troop horse as his was not in condition usually owing to legs or feet. He is sensitive, high strung, and needs more care and attention than can always be given him in the field. I entirely agree as far as my experience goes, with Major Tompkins on this point.

I doubt if the price of an Arab horse could be brought within the limits for a cavalry horse. I would like to see the strain, if practicable, bred into our cavalry mounts.

I prefer a part thoroughbred for cavalry service, a standard bred or half-bred, but not any half-bred, a type only in which the mare is selected for her intelligence, mildness, conformation and her gaits for cavalry. I ride such a one; he is showy, head up and has fine action and conformation; is even tempered, never frets, fearless, and takes a five foot hurdle with ease and comfort. I ride him on all government tests, practice and other marches, and my daily pleasure rides. A horse of this breeding is within the price, and I consider has the bone, the endurance, the barrel required by our distance-covering, weight-bearing cavalry.

I am of the opinion, from my observation of the hard and long distance border patrolling that the horse under, rather than over fifteen hands two inches, is the proper cavalry mount. The price of the larger horse is higher, he usually, in this country, owes his size to draft-blood rather than saddle breeding, he requires more food, he is more apt to be slow stepped and hard gaited, he pounds the road with his feet when it is necessary to take him over them. He is harder for our cavalrymen to groom, saddle and mount; and finally according to my experience, (his service is short-lived, he is rough gaited) he is soon on the inspection report. If bought young, he develops large feet, a large head or disproportionately otherwise. The less expensive, fifteen hands two inches or under, horse, with his light feet and nimble action and perfect conformation, more often found in this size of a horse, will, in my opinion, cover the distance, carry the load, to his own and his rider's comfort, and stand the privations of a forced march, better than his bigger brother.

Colonel F. R. McCoy, Cavalry.

I favor a service horse at least fifteen hands two inches in height, although I do not consider the height of especial importance as compared to the formation, stamina and quality.

I do not believe, however, that the average horse of less height that that is up to the weight carrying requirements of the service.

I have had no practical experience with the Arab type of horse. As an observer I am an admirer of the Arab having seen and ridden with several English cavalry regiments mounted on such horses, but they were extremely light cavalry, not carrying rifles, and there was a very decided difference of opinion among the officers of those regiments with regard to their comparative value as service horses. Their good qualities are well known the world over but no nation has ever been satisfied with them as service mounts. The last time I rode with one of these Arabs was in the Russian Cavalry test at Fort Winchester, Va., with Major Byrum riding an Arab horse which I think belonged to Colonel Tompkins. I rode beside him throughout the test and was interested in the horse's performance, which was good, but his barrel and conformation was such that the saddle blanket came from under the saddle and Major Byrum teetered throughout the course. It seemed to me at the time that the horse did not have the conformation for carrying the service saddle and equipment.

I favor as much thoroughbred blood as possible for cavalry service. I believe with proper breeding the thoroughbred would be the ideal horse for cavalry service, but I am conscious of the difficulties, and believe the Department is on the right lines in encouraging the breeding of half-blooded stock for the purpose. I have ridden a number of the Virginia half-bred horses and consider them first rate for cavalry service in every respect.

I have ridden thoroughbred horses ever since entering the service and for my own use much prefer them. During the past two years on the border I rode a thoroughbred mare in arduous field service, on the march, patrolling, at drill and for polo. She is even fifteen hands two inches, strong, not sensitive nor prone to disease or injury. In fact she has never been sick except for a slight case of influenza caught from remounts. She, in no ways answers any of Colonel Tompkins'

description of the thoroughbred, weighing 1,050 pounds, short coupled, big barrelled and as Lord Roberts said of his famous Arab, "never sick nor sorry."

Lieutenant Colonel Roger S. Fitch, Field Artillery, N. A.:

I am very much in favor of a service horse not more than fifteen hands two inches in height; horses over this height, and especially horses considerably over this height, usually run too much to legs, to lankiness, to being poor keepers and to having more joint and ligament trouble than is usually the case with smaller horses. A short-backed, short-coupled, strongly-muscled horse of fifteen hands two inches and under will usually carry a man infinitely farther on short rations than will the type of thoroughbred which of late years has become more or less of a fad in our service.

I have had no practical experience with the Arab type. While on duty at French maneuvers near Vesoul in 1911, I saw a good deal of the French light cavalry mounted on what they call the demi-sang type of horse whose forebears on one side were descedants of the Barb and therefore related to the pure Arab. These horses seemed pretty light in bone and to have too much daylight under them for such small horses. I believe a horse more on the type of our small Missouri or Kentucky saddle strain with heavier bone, shorter coupled and less daylight would make a better type of horse for our use, especially as our cavalry is not divided into light and heavy cavalry as is the case in France.

For service use where the horse has to subsist in great part by grazing, or by grazing supplemented only by a little corn or grain other than the kind to which he is accustomed, I believe that the thoroughbred will not stand the racket as well as the horse with only a moderate strain of thoroughbred in him. Personally, I have found a half-bred horse suitable for ordinary field service. I would rather have a quarter-bred horse than a thoroughbred horse for arduous service, especially if this

quarter-bred horse were of the general type described in the last sentence in paragraph 2 above.

I have not ridden a thoroughbred horse under arduous field conditions.

Major Frederick J. Herman, Q. M. Corps (Cavalry):

I do favor a service horse fifteen hands two inches in height or a little less, of proportionate conformation as satisfactory to our service. My personal observation has been that the shorter stocky horse is more serviceable and less liable to ailments and breakdown than the tall rangy beast at times found in our ranks.

I have had no practical experience with the Arab type as owner or observer.

I favor the cold blooded horse of proportions mentioned above, because such horses can be obtained in greatest numbers, at reasonable prices, and can most readily be replaced, and suffer less in body and spirit from the handling of the soldiers of mediocre intelligence so plentiful in our ranks.

I have owned a thoroughbred horse, and have ridden him under arduous field condition for two and one-half years in Southern New Mexico and Arizona. I found him hardy and free from disease, but rather prone to injury, and unduly sensitive in the feet, requiring constant molly-coddling with cold bandages and water stalls and light weight shoes. He was generally unsatisfactory as an officers' charger, prone to excessive bursts of speed at the wrong time, and too nervous for steady work. This particular horse was the offspring of a very famous pair of long-distance running horses, bred in Old Kentucky, a pretty good investment for use in the smaller racing circuits west of the Mississippi River, but frequently a nuisance at squadron and regimental drills, where he was supposed to "stay put."

I have observed many thoroughbreds and alleged thoroughbreds in our service, and while some of these horses were fine in the idiotic obstacle ride, and the present hour jumping

affliction of our army, the impression which remains with me is that they are a game not worth the candle. If we properly groom, feed and train the cold-blooded, stocky horse, leaving out the thoroughbred and high school horses, and those trained to useless things, I believe we will have a more uniform looking cavalry, that will take us somewhere. I do not believe in the cavalry horse as a "weapon." I did once, but in these days of machine guns and automatic pistols, I am not so enthusiastic any more. Nor does the officer on a stately thoroughbred charging alone appeal to me. A very dear friend in the cavalry owns a splendid looking thoroughbred, who does the Spanish Walk and other stunts, and is perfectly fine for the "Russian Ride" (for which he is maintained at government expense). On practice marches and quick dashes on the Border patrol he was either left behind in camp or carefully led in the rear of the column without saddle or pack.

Until such time when our government can be impressed with the importance and necessity for stock farms where the military horses for its armies can be scientifically bred under competent supervision—and provides the farms—the cold-blooded horse heretofore described appears to me to be the best for our cavalry, duly considering the portions of the United States and Northern Mexico where it is most likely to be employed.

I fully agree with Major Tompkins in what he says of the thoroughbred horse and of the blocky-built horses in our service. But we should not go to the opposite extreme in horse selection and imagine that American cavalry work can be properly done on ponies.

THE FORTY-SEVEN RONINS.

By Colonel FARRAND SAYRE.

AT Tokyo, I asked first of all to be shown the graves of the forty-seven Ronins. As we approached the graves we met about one hundred Japanese school boys, ten and twelve years of age, marching away under charge of their teachers.

The boys' military caps seemed oddly out of keeping with their wooden clogs and kimonos; they had evidently been brought here for inspiration and instruction.

The path leading to the graves was lined on both sides with booths, selling incense, pictures of the graves, souvenirs and other articles. The presence of the booths and the worn pavement attested the number of visitors. The graves were marked only by rough slabs of dark stone smoothed on one side and bearing a few Japanese characters. Some twenty or more men and boys were standing about, others were coming and going.

Two of the graves were covered with wooden structures, apparently to protect the stones from being chipped by souvenir hunters, and these graves had bundles of fresh cut-flowers and sticks of burning incense about them. I approached one of these two and asked a bystander what it was; he said "Oishi" and inclined his body reverently toward it. Going to the other and asking the same question, a man replied "Chikara" and his eyes shone with exaltation. Two middle aged, well dressed women came up and commenced laying sticks of burning incense on each of the forty-seven graves and making obeisances before each. And this was in May, 1916.

The deeds of the forty-seven Ronins and the respect in which their memory is held cast interesting lights upon Japanese characters. About two hundred years ago Asano Takumi no Kami, a Japanese lord, was insulted by another nobleman named Kotsuke. He drew his sword to kill Kotsuke

but succeeded on'y in wounding him. For this Asano was directed to commit suicide his propety was confiscated and his family ruined. His retainers became Ronins, masterless men.

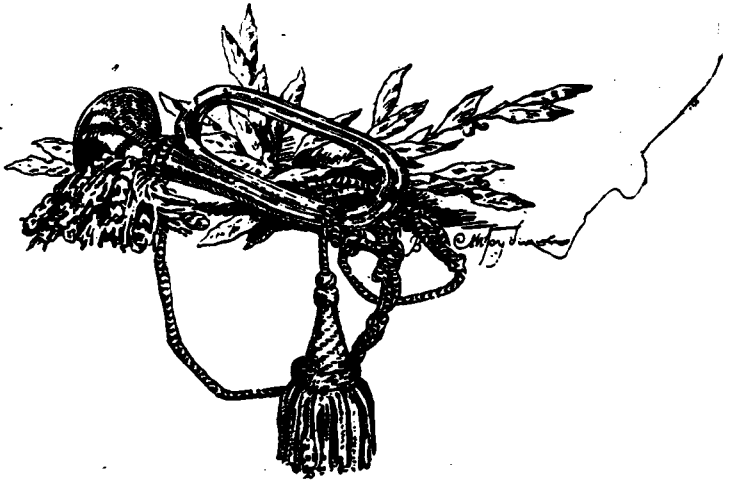
Kotsuke was sufficiently versed in Japanese character and traditions to obtain a strong guard and keep it constantly about his person. The chief of Asano's retainers was Oishi. Learning that Kotsuke kept himself well guarded Oishi decided to bide his time. Accordingly the Ronins scattered and Oishi apparently gave himself up to an idle and dissolute life.

Spies sent by Kotsuke reported that Oishi was a worthless drunkard and had been seen lying drunk in the street at Kyoto.

In the meantime Oishi sent his comrades to Kotsuke's house from time to time disguised as peddlers, mechanics or beggars. After a year Oishi learned that Kotsuke had reduced his guard and relaxed his vigilance. Oishi and his son Chikara, a boy only sixteen years old, and others of Asano's retainers, numbering forty-seven in all, assembled at night in mid-winter during a heavy fall of snow and marched to Kotsukes house. They found only ten armed retainers on guard but these fought bravely and others came to assist them. Chikara attacked and killed one of them. All of Kotsuke's retainers were killed.

Respectfully bowing before Kotsuke, Oishi requested him to commit suicide; he declined to do so and Oishi decapitated him. Bearing Kotsuke's head, the forty-seven again took up the march, this time to Asano's grave. They laid the head upon their master's grave and then reported what they had done to the authorities and awaited their sentence. The sentence was, so they had expected, death; and they executed it by disembowelling themselves with their own swords. The march to Kotsuke's house, the fighting there and the march to Aasno's required two days and the marching was through deep snow. During these two days they obtained rest and food only once. Friends of Asano's family buried them in a group at the foot of Asano's grave. -For two hundred years flowers and burning incense have never been absent from the graves of Oishi and Chickara and seldom absent from the others.

Murderers and suicides say you. Yes, but great heroes to the Japanese and their spirit lives in Japan. Those who fight the Japanese must expect to meet the patience, the fortitude, and the self-sacrificing loyalty of the servants of Asano.



A PLAN FOR PRACTICAL TRAINING OF RESERVE OFFICERS.

By Major CHARLES BURNETT, F. A., N. A. (Cavalry).

IT goes without saying that in any of our plans for preparedness, a bountiful supply of reserve officers is a pre-requisite to any degree of efficiency. This is one of the lessons of the European War, that admits of no question. That our own government realizes this may be seen from the present efforts of the War Department to secure a large number of such officers for use in case an attempt should be made to raise a large army.

A glance at the men now joining, or under training for that corps, however, reveals some disquieting features. It cannot be doubted that in many cases, excellent material is being obtained; but the fact remains that the great majority would be of little value should they be called upon for *immediate* service. Potentially, excellent, no doubt; but actually of litt'e or no account for a sudden need. What do you imagine they could do if they were suddenly called upon to lick into shape men even greener than they themselves? Anyone on duty with National Guard organizations during the past year, saw any number of fine, patriotic, self-sacrificing men, anxious to make efficient organizations; but the blind cannot lead the blind, and the military game cannot be learned from books and the armory. It must be borne in mind, too, that the average reserve officer is even less experienced than his National Guard brother. How can a man who has but a vague idea of what an efficient organization should be like, train green men to a state of efficiency? There are three things an officer *must* learn before he is of any value—an idea of what discipline means, a comprehension of the meaning of an order, and a sense of the value of time. Such things are not to be learned from books or lectures, nor are they learned in a day.

The plan proposed herewith contemplates, briefly, the use of an organization of the regular army to train an equal

or somewhat greater number of men, for reserve officers. It is believed that from 70 to 100 men can be accomodated in a troop, battery, or company. They would do duty in ranks just as enlisted men do, and *with the enlisted men*, as a great part of their practical education must and will come by absorption from men experienced in the service. From their daily life, they will imbibe, unconsciously, proper ideas concerning discipline, customs of the service, the value of time, the meaning of an order, and the thousand little things whose sum total makes the difference between efficiency and inefficiency. At the same time, they will get some insight into the psychology of the kind of men they would be called upon to train and lead in case of war. In addition to their drill, they would learn something of company administration, of methods of discipline, stable management, the company mess—all of which are of primary importance to a subaltern officer. How many of our reserve officers, present and future, know anything about the very ABC's of a subaltern's duties?

For the academic part of their course, they should study, under the troop officers, the subjects required in the examination for reserve officers for the grade of captain, first lieutenant and second lieutenant. (Administration, Hippology, Map Making, etc.). In almost every regular organization, there are non-commissioned officers capable of acting as instructors in these various subjects.

A course of six months, every day a working day, is believed to be sufficient to train intelligent, well-educated young men for the duties of reserve officers. The minimum time, however, could only be ascertained by experiment.

In order that no time should be wasted on unessentials, it is believed that such a plan would work best in barracks, where there are proper conveniences for studying. There are plenty of such empty barracks at present, and their proximity to a city would make it easier to obtain candidates. It is not believed that any trouble would be experienced in securing the men for such training. There are many who would like to prepare themselves, practically, to "do their bit" in case of war, and this plan, being the essence of practicality, would appeal to the very class of men desired.

As this is but a modification of the Citizens Training Camp idea, the matter of funds, etc., should cause no special difficulty, there would seem to be no insuperable objection to putting it into effect any time desired by the superior authorities.

After six months of such training, let us see what our future officer would know about the military game. He would have in the first place, a good idea of discipline, the very foundation of military efficiency; he would know what an order means; he would be something of a drillmaster, and would know his Drill Regulations thoroughly; he would be fairly familiar with company administration; and his knowledge of the academic subjects would enable him to easily pass the War Department examinations. Above all, he would be of value *at once*, and would not be in the way until a harrassed and overworked regular officer could find time to teach him something after hostilities broke out. Isn't that the kind of man needed? Are we getting that kind in the reserve corps now?

SOME CAVALRY PRECEPTS.*

By General SIR DOUGLAS HAIG.

"OUR cavalry failed, perhaps, not so much in actual capacity as in self-confidence. But all its initiative had been *destroyed at maneuvers*, where criticism and blame had become almost synonymous, and it therefore shirked independent and bold action, and as much as possible, kept out of sight far in the rear."†

"If then, it be granted that in a decisive struggle—in a *war* as opposed to a punitive expedition, large armies will be employed, and that with large armies will be their due proportion of cavalry, then the necessity to study and prepare beforehand how best such cavalry may be employed, can need no further demonstration."

"A cavalry subaltern is sent out in front of an army with three or four troopers, and he is told to find out all about the enemy. If he is lucky he may come across the enemy and get hold of a certain amount of data, although imperfect. On these data he has to form a conclusion as to what the enemy is doing, and that conclusion he has to send to his colonel or general behind, and on that the commanding officer perhaps,

*Quoted from *Cavalry Studies, Strategical and Tactical*, by Major General Sir Douglas Haig, and of more than ordinary interest now, in view of General Haig's brilliant record in the present European War, where he is commander-in-chief of the British Armies in France.—*Editor*.

†Quoted by the author from Moltke, but apparently applicable to the peace training of the British cavalry, and not without application in some degree, to the *repression* of our cavalry at maneuvers.—*Editor*.

bases his orders. It requires not merely the power to close observation. What is the good of officers knowing all these things unless they understand them?"

"The securing *tactical results*, the fulfillment of its mission, is the sole criterion of the real value of any arm, considered as a fighting instrument. And it is this very truth, although an elementary one, which the majority of those who set themselves up as judges over the cavalry, have not been able or willing to comprehend. Have we not all read, not without disgust, those strange statements, those wonderful statistics, in which a comparison of the losses caused by bullet and saber is used as a text for extolling certain particular tactics of the cavalry. It is fortunate if the conclusion is not positively arrived at, that cavalry is altogether effete and useless."

"In considering the work of cavalry in the field, we must never lose sight of the fact that the decisive and governing factor, on which depends the result and the value of that work, is Leadership; the quality and character of the Leading in one and all of the ranks of command, from the general, the Leader of the corps of cavalry, down to the non-commissioned officer, the Leader of a patrol. In cavalry work, individuals can make or mar to an extent almost, if not impossible, in the work of the other arms * * * . It is a simple fact that at any moment in a campaign, may arise for a cavalry Leader of any rank, a situation which, for its satisfactory solution, needs mental power and capacity, not often called on in Leaders of similar rank in other arms."

"It is commonly argued that, so far as India is concerned, cavalry divisions or even cavalry brigades will never be required, and can never be employed on or beyond the north-west frontier of India, owing to the difficulties of terrain and of

transport and supply. But with our vast and widely scattered Empire, it is impossible to say where our army may be required at any moment, and it would be suicidal to confine the higher training of the arm within the limits which appear, rightly or wrongly, to suffice for local requirements, when, without warning, its services may be peremptorily called for in some theater of war of a totally different character * * * . It must be borne in mind that the days of small armies are past, and it is a simple fact that *large armies entail large numbers of cavalry*."*

"It is no longer economy to starve the cavalry arm. The extent of the objective calls for extended methods of procedure. Numbers, in modern cavalry, do not constitute merely a material force; they are also an element of moral superiority, an essential condition of energy and success. Concentration to the highest degree, combined action of the whole, decisive tactics are necessary * * * . In cavalry work it is Leadership that tells; and it is the power of rapidly grasping a situation, of being able quickly to come to a decision and at once issue clear and easily executed orders, that, more than the possession of any other faculty, brings success to a commander in the field.

"The development of this faculty ought to be the main objective of the training of combatant officers in peace, and close attention should be paid to all exercises which tend to develop a power of decision and skill in quickly drafting orders."

This same argument has been applied to American cavalry, and even recently the difficulty of supply in Mexico, has been mentioned as militating against the mobility of cavalry divisions, by thoughtless writers on the subject.—*Editor.

THE TACTICS OF THE MACHINE GUN.

The following treatise on the tactics of the machine gun is is taken from "The Book of the Machine Gun," by Major F. V. Longstaff, and Captain A. Hilliard Atteridge, British Army.

It contains the most recent deductions as to the use of machine guns from the lessons of the Great War, and appears at a time when not only are tactical secrets kept carefully guarded but when such information is most in demand by units of our army, preparing for overseas service.—EDITOR.

* * * * * *

MACHINE GUN fire is *concentrated* infantry fire. This statement is the general guide to its correct tactical use. But, like all general statements, it must be carefully considered before it is put into practical application.

For machine gun fire has special characteristics that are entirely its own. It can be concentrated like a jet of bullets on a single oval area, or by the traversing of the gun on its pivot it can bring a sweeping fire to bear over a wide front. Thus the machine gun gives to a small group of men the power of either keeping up a slow deliberate fire or delivering sudden gusts of fire, turning it rapidly on a diversity of targets or directing it upon one narrow space of ground, or again sweeping the front with a rain of bullets that produce the effect so well suggested by the French expression, *feu fauchant*—a *mowing down* fire.

The fact that only a few men are engaged in operating a group of guns, and that each gun is fired from a fixed support with mechanical control of elevation and direction, gives a further special character to its fire. *There is less scope for the errors introduced into infantry fire by the human element.* Nerves and excitement are to a large extent eliminated. A

body of infantry soldiers firing the same number of bullets will include a wide diversity of temperaments. As each man reloads and brings his rifle to the shoulder he will have to take a new aim; and experience shows that there are a few men who, in the excitement of battle, fire with anything approaching the steadiness of a fairly good shot on the rifle range. No matter how good the general discipline of the men may be, and no matter what earnest and well directed efforts their chiefs may make to exert control, the firing tends to become excited, the bullets go high. As the range diminishes and the crisis of the fight approaches this tendency increases in a marked degree.

The machine gun, *because it is a machine*, and because it is aimed by one man, delivers an ideally controlled fire. Various estimates have been made of the comparative effect of infantry and machine gun fire. Some of the most interesting data are supplied by trials carrried out by the United States Government about six years ago. The machine guns used were Vickers-Maxims. One of these guns was put in competition with a body of fifty riflemen. These were all exceptionally good shots, selected from a class at the United States School of Musketry. Further, it must be remembered that they were firing, not under battle conditions, but under range conditions.

Mr. Edward Crossman, who tabulates some of the results in a paper in the *United Service Magazine*,* points out that:

"The infantry fire was delivered by cool, trained, highly effective shots, without the disturbing effect of battle to count against them. In action it is far easier to hold down one or two men to cool, well-directed fire, than it is to hold down one hundred men. If the machine gun pointer proves temperamentally unfit because of lack of coolness, he may easily be replaced. And so in actual battle the fire of the gun, round for round, would be proably more efficient than the same number of rounds fired by infantry."

We may take it, therefore, that the gun was handicapped by the special skill of the riflemen.. Yet it more than held its own, the advantage being more marked as the range lengthened,

*April, 1915, p. 65.

and being especially noticeable when *indirect* fire was used against hidden targets. The superiority would be still more marked if the gun were put in competition with a platoon taken at haphazard from an average battalion. And again, it would doubtless be still more striking if the fire had to be carried out, not under the ideal conditions of the rifle range, but amid the stress and excitement of the battlefie d.

It is quite certain, therefore, that the machine gun has at least the fire power of fifty rifles. It is probable that this estimate might be safely doubled. We arrive thus at the conclusion that the probable fire power of a section of two guns is equivalent to the condensed fire power of two platoons of infantry.

And this condensation is the more remarkable if we take into account the fact that the machine guns require only a front of a few yards, while a hundred rifles deployed in the firing line in the first stages of an attack may cover nearly and eighth of a mile.

Hence we have another characteristic advantage of the machine gun. It is easier to conceal it from view and to secure for it effective cover against fire.

Again, firing from a fixed support it not only keeps its target and range better than even the best trained platoon of riflemen, but it has a longer effective range than the rifle fired from the shoulder.

But this is not all. Its fire is more effective. One cannot judge the effect of fire in battle by merely counting up the hits made on paper targets on a rifle range. We have seen that the human element must be kept in mind with reference to the men who are firing. But there is also the moral effect on the men who are being fired at. On the range there is no such factor in the fire effect on the targets. But in battle it is all-important.

As is so often the cause in discussing military problems, we are reminded of Napoleon's saying that in war the moral is to the physical as ten to one. In fire effect, not on targets, but on men, the moral effect is everything. One does not win battles by shooting down or bayoneting every opposing man, nor is a campaign decided by the complete destruction of the enemy in the literal sense of the word. Fire is intended to kill

or disable a number of the enemy, and to do this in such a way that those who remain will be *demoralized*—that is reduced to such a condition that they will no longer be steady, disciplined soldiers, but will cease to shoot straight, and be so shaken that they will give way before the final rush with the bayonet.

Now men are less impressed and less shaken by a comparatively heavy loss gradually incurred during a long space of time or over an extended front than they are by even a lighter aggregate loss inflicted on them suddenly, in a few minutes, and on a small space of ground. In the first case they hardly realize their losses and their danger. In the latter they are subjected to an intense moral strain. There is all the difference that exists between the prolonged pressure that a steel bar will sustain almost without bending, and the sharp blow that will shatter it.

The machine gun supplies the means of delivering this sharp blow. Its gust of destructive fire has a peculiarly nerve-shaking quality. Those who have to face it and witness its devastating effect on their comrades have the uncanny feeling that they are up against a machine, not merely fighting with other men. And the effect is all the more demoralizing when the machine itself is invisible and there seems to be no possibility of doing anything to put it out of action. To this we must attribute the well recognized fact noted in so many accounts of the action of the guns in battle, namely, that men seldom fail to remark the peculiar rattling reports of the machine guns (at least four different timings in reports—two German and two British), and are heartened and encouraged by hearing it on their own side, and depressed by recognizing it as it dominates the crackle of rifle fire from the attacking line, which they are trying to hold back. The machine gun has thus some share of the moral effect that belongs to artillery in action.

The machine gun, properly mounted and in the hands of duly trained men, should be as mobile as infantry in the actual fire fight. Modern machine guns have all been improved in the direction of lightening both the gun and its mounting. In moving from position to position in action the gun is light enough to be carried or dragged along the ground by one or two men. The guns are far more mobile than artillery, and

compared to the field gun, with its wheeled carriage and its team of horses, the machine gun presents an infinitesimal target, and of such small height that it can generally be moved under cover.

It has already been noted that in range tests against targets hidden by an intervening obstacle machine gun fire gives better results than that of infantry. This point is worth insisting upon. If the distance and direction of the unseen target is known, and it is within reach of even the longest range of the gun, the target can certainly be hit if the trajectory of the cone of bullets clears the intervening obstacle. And when one says it can be hit, this means that it can be kept under a steady rain of bullets. *It is not a matter of chance but of certainty.* With correct elevation, direction, and the gun fixed on its mounting, the descending cone of bullets will fall upon the same patch of beaten ground as long as the gun is kept in action

These are the advantages of the machine gun. It supplies *condensed infantry fire*, and this condensed fire has characteristics that make it more effective than the fire of the steadiest infantry, if the machine gunner knows how to develop to the utmost the powers of his weapon.

RATE OF FIRE.

Every gun that can be fired rapidly has a certain drawback, the importance of which used to be greatly exaggerated. In the early days of machine guns it was objected that the gun would consume ammunition at a tremendous and even prohibitive rate, and would be liable to be put out of action by the mere want of cartridges. But any such objection is now of less force. The adoption of quick firing artillery and magazine rifles was opposed on the same grounds by the same conservative minded critics who find objections to every progressive change. In the case of machine guns the objection was largely based on a misconception. The objectors imagined that in battle the guns would be in action, and actually firing, for hours at a time. Experience shows that a machine gun properly handled is at work in most cases for a few minutes at a time. Fire is used when it will tell and tell heavily. The machine gun is fired to hit something, and is not to be handled as a mere

carriage destroyer. Nevertheless the aggregate consumption of cartridges may be very high, and the supply must always be ample. But this is a matter of starting with a good supply in hand and having proper arrangements for replenishing it. *It has been truly said that the winning of battles now depends to a great extent on the ammunition supply being previouly arranged in a methodical manner with a definite view to the intended operations. This is eminently true of the machine gun arm.*

Another drawback has also been made the subject of exaggerated criticism. In the early days of machine guns a distinguished officer of our own army said that he found that the gun had an awkward trick of getting out of order just at the precise moment when it was most wanted. This was largely at the time the result of the defective cartridge when in use, the old Boxer pattern with its composite case, which was liable to go to pieces under the pull of the extractor, thus blocking the loading chamber and jamming the mechanism. The solid-drawn cartridge-case has put an end to this source of trouble. But is true that machinery of any kind is liable to unexpected stoppage. The mechansim of a machine gun is not much more complicated than that of the modern magazine rifle. But in the case of the gun it works at a high rate of speed and is subjected to a rapid succession of shocks, several hundred a minute. The wonder is that break-downs and jams are so rare. When they do occur, in ninety-nine cases out of a hundred they can be set right within twenty-five seconds. But the fact that a stoppage can suddenly occur is the basis of the sound tactical rule that machine guns must always work in couples. Two guns form the smallest tactical unit, and we have seen that two guns represent a very considerable fire power.

The drawbacks enumerated are therefore met by a carefully organized ammunition supply and the working of the guns in sections of two each. Two other points may be noted. Machine guns, like artillery, are for the time being out of action while on the move, though they have the advantage that in *well trained hands they can come into action instantly.* The practical deduction is that once the guns are in a good fire position *they should not be moved without reason:* the movements

should be as rapid as possible, and the new position should be selected before the guns are moved.

Again, the machine gun has no place in the fight at close quarters. It follows, therefore, that during the attack it keeps in action as long as its fire can be maintained without danger to the assaulting troops. When the fire has to cease the guns are got ready to push forward and assist in holding the captured position against a counter attack. On the defensive in the same way, the guns will be kept in action till the last moment against the advancing enemy, but during the actual struggle for the position, and when the attacking force is penetrating into it, the machine guns should be withdrawn and held ready, either to cover the retirement or to be pushed forward to reopen fire on the retiring enemy, if the assault is repulsed.

Machine gun tatics have suffered somewhat from the false analogy between machine guns and artillery. Some trace of this false view still lingers, and there is evidence of it in the fact that during the present war captures of machines guns on both sides are enumerated as if they were captures of cannon. The Service Regulations of all armies now lay it down that there are occasions when guns can be honorably lost in battle. As, for instance, when a battery sacrifices itself to cover a retirement. This is true, even in a greater degree, of the machine gun. The weapon is so easily manufactured, *and should be available in such large numbers*, that the loss of a few guns is not really a serious matter. *It is much more difficult to replace the trained officers and gunners of a section than the guns themselves.* Too great anxiety to prevent the guns becoming war trophies for the enemy may easily lead to an abscence of enterprise in the attack, and on the defensive it may have an equally unfortunate result. There is the danger of guns prematurely ceasing firing in order to be withdrawn, perhaps ceasing fire at the very moment when their rain of bullets was shaking the near advance of the enemy. The machine gunner must be prepared to risk the loss of his gun, and prepared also to disable it at the last moment, so that it shall be of no use to its captors.

A practical working system of machine gun actics must be based upon the effect to make the most of the characteristics powers of the weapon. If it is to be used effectively, it must be in the hands of officers and men thoroughly familiar with their guns and imbued with the enterprising spirit that will seize and make the utmost use of every occasion of their intervention in the fight.

In the various opinions on machine gun tactics which are quoted or summarized in the preceding chapter, it is evident that the writers had in view the defensive attack of an enemy's position in pitched battles fought in the open. In the present war we have been brought face to face with a state of things which is not really new in its essential features, but is new in the extent of ground over which a special condition has prevailed and the length of time during which this condition has dominated the operations, especially on the Western front. Instead of battles in the open and a war of movement and maneuver, we have what are virtually prolonged siege operations between armies entrenched on prolonged fronts and close up to each other. *We have said it is not new, because siege warfare is as old as war itself, and, further, the fight for entrenched positions with both sides dug into the ground has been a feature of many recent wars, beginning with the Wilderness Campaigns in the American Civil War.* The war of entrenchments has played a part in every campaign since Plevna. The battles of Liao-Yang and Mukden in the Russo-Japanese War were prolonged entrenchment fights. But in this war the entrenched fronts in the Western sphere of operations are of a *length* for which there is no precedent in any previous war, and the condition of stalemate has lasted for months.

MANEUVER BATTLES.

Those who are training our machine gunners have, therefore, had their attention riveted on the question of their employment in this prolonged entrenchment fighting—a very different business from their use in maneuver battles, and one hardly contemplated by early writers on the subject. In conversations with machine gun instructors, one finds indeed a tendency to leave entirely aside the question of machine gun tactics in the open. But, as the records of war in the Eastern Europe show, there is still a place for the *maneuver battle*, and the war of entrenchments is not everything. But the conditions of these two kinds of fighting are very different, and in discussing

the tactics of the machine gun there must be a separate treatment of the machine gun in maneuver battle (which has been so fully discussed in recent years) and the use of the machine guns in the effort to break an entrenched front by an operation which on a vastly larger scale is similar to the assault on a besieged fortress.

EFFECTIVE RANGE.

So far as the machine gun is concerned, a radical difference between the two kinds of fighting arises from the question of range at which the guns are brought into action. We have seen that in the evolution of machine gun tactics there has been a steady tendency to regard medium and short ranges as those at which the gun can be used with the best effect in battles in the open. This arises from the fact that normal machine gun fire is concentrated fire with a very limited beaten zone—*a fact which suggested the rule that fire, of which the effect could not be observed, would be wasted.* It was felt that the efforts to bring long range fire to bear upon an enemy's supports by spraying the ground behind his firing line with machine gun fire, would generally be mere random work depending on pure luck for serious effect, and that in most cases it would mean a costly and most useless expenditure of cartridges. This was held to be work for the artillery, not for the machine guns, and that guns supporting infantry could be of the most service to them by holding their fire until medium ranges were reached and then using it as the opportunity offered to support the advance.

The same consideration led most writers on machine gun tactics to regard indirect fire as somewhat exceptional, peculiarly difficult, and of doubtful effect. The tendency therefore was to concentrate attention chiefly on the *use of machine guns with direct fire and at ranges of a thousands yards and under.*

But the fact remains that while infantry fire at long ranges is only exceptionally effective, the machine gun on its fixed mountings can range up to 2,800 yards, and in properly trained hands can make good shooting at this extremely long range. Further, the height of the trajectory at long ranges favors indirect and overhead fire by making it a simple matter to clear intervening obstacles and to fire safely over the heads of one's

own advanced troops. In view of these facts, one asks oneself if with a gun ranging up to 2,800 yards there is no means of making efficient use of its powers beyond less than half this distance. Experience of the machine gun work in the entrenchment battles of the Western front shows that, whatever may have been written on the subject before the war, *there are plenty of means of using the guns at even the longest ranges in this new kind of battle.* It remains true that machine guns must not be confounded with artillery, but nevertheless some of the recent developments in their use tend to assimilate it to those of the heavier weapon.

In most of our training camps at the present moment it is laid down as a general rule that the effective ranges of the machine gun lie between 1,000 and 500 yards. This, however, refers to machine guns acting with infantry and pushing forward with them in the advance. The use of the guns at longer ranges is for covering fire over the heads of the infantry they are supporting, *or directed against the enemy's supports* and the lines by which he is bringing up his reinforcements to the fighting line. This long range fire will often be indirect against targets unseen by the gunners themselves, and on account of its high angle it will generally be somewhat similar to indirect fire. We have seen that the view which for a long time barred the use of long range indirect fire for machine guns was based on the quite sufficient reason that in most cases the results obtained would be doubtful and out of all proportion to the amount of ammunition expended. But this objection is removed by methods more recently worked out and rendered possible by the special conditions of the prolonged entrenched battles of today. We may say, indeed, that there are now two kinds of machine gun tactics: *the tactics of long range*, rendered possible by the conditions of the entrenchment battle, and *the tactics of medium and short ranges*, which have their place in the maneuver battle in the open, and the assault during the entrenchment battle.

The special conditions that render long range fire practicable and effective are these. In the entrenchment battle prolonged not only over days, but it may be over weeks, the enemy's position is fixed and easily defined. More than this,

systematic aerial reconnaissance, day after day, renders it possible, not merely to fix the general position and limits of the hostile position, *but also to map out most accurately the position of the advanced trenches which form his firing line, the trenches farther back, where he keeps his supports and reserves, and the lines by which these supports and all supplies of ammunition must be brought up to the advanced trench, these lines being the communication trenches.* Not only is the enemy's firing line permanently fixed to a definite position, but all movements immediately in rear of it must necessarily follow clearly fixed lines.

During the long preparation for an attack upon the enemy, all these positions and lines of communication can be accurately laid down, if large scale maps of the ground he holds are available. In the warfare on the Western front these maps, elaborately contoured at short vertical intervals, are available, and this not only facilitates the mapping of the enemy's position, but also makes it perfectly easy to work out rapidly, accurate section of the ground on any line of fire in ts front. It is, therefore, possible to select a machine gun position in our own lines, or in rear of them, from which by indirect fire, selecting the appropriate range and trajectory, the bullet sheaf from the guns will clear the intervening obstacles and descend upon a given spot in the enemy's lines. *That the bullets will strike the selected patch of ground in the enemy's position is not a matter of chance, bu of absolute certainty.* This would not be the case with long range fire from a platoon of riflemen. A number of men, no matter how well trained, will not go on steadily bringing the rifle again and again to the shoulder with absolutely the same elevation and direction. But the machine gun, once clamped on its tripod, delivers its fire with mechanical certainty on the same spot.

It is quite true that even with the help of aeroplanes, there cannot be the same easy observation of fire effect as in the case of artillery with its bursting shells. There can, however, in many cases be observation of fire, either from the air or from the ground, but this is not necessary to make this kind of long range fire effective. The important point is that reconnaissance of the enemy's position can reveal the *areas where it is vulnerable to machine gun fire*, and this fire can be directed on these areas with certainty, and with the result that the fire from the guns will harass the enemy, impede his movements, and inflict loss upon him.

A few details will make the matter clearer. At these long ranges the fire of the machine gun is no longer a closely concentrated jet of bullets, but spreads over a beaten zone, oval in general form, somewhat like the beaten zone of shrapnel, but not so large: its major axis will be in the direction of the line of fire. With lighter guns, like the Colt, the beaten zone will be rather larger than with the heavier and steadier Maxim. In this case the slight vibration of the Colt and similar guns is an advantage rather than a drawback, for it tends to enlarge the beaten zone, whilst still keeping it within sufficiently moderate dimensions for accurate fire.

To take some practical instances, the enemy's communication trenches immediately behind the first line have been located and mapped. During an assault it is certain that he will be sending up reinforcements and supplies of ammunition along these trenches. Positions are therefore selected from which machine gun fire is brought to bear upon each of those communication trenches. In selecting these positions, sections are drawn of the intervening ground in order to select the range and trajectory that will be most effective. It is seldom that fighting takes place on perfectly even and level ground. Even what we call plain is in Western Europe, in most cases, a series of gentle undulations. Reserve trenches will often be placed in rear of the crest of a slope of ground. In such a case one will find the communication trenches running back by the reverse slope of the rise in the ground to support positions in rear of and hidden by it. In such a case it will often be possible to slect a machine gun position that will give a trajectory which will sweep the reverse slope. The angle of descent of the bullet sheaf conforming very closely to the slope of the ground, such a fire will be very deadly and embarrassing to the enemy; it may even prove to be a barrier through which he will find it impossible to push forward his reinforcements.

It is obvious that the longer the range the more chance there is of selecting lines of trench that are open to enfilade.

In the entrenchment battle the advanced trenches on both sides are fairly near each other at the outset. By using the longer ranges of his weapon, the machine gunner with his guns in position behind the advanced lines can pick out lines of trench far away to right or left, on which he can bring a diagonal indirect fire, sometimes enfilading a considerable length of trench. It is all a question of having absolute confidence in the gun, bringing its rain of bullets to bear on the selected, though perhaps unseen, point, and a careful prel minary study of the forms of the ground and the possible trajectories of the weapon.

The beaten zone of machine gun fire, even at long ranges, is so moderate in extent that several guns will have to be used together to sweep a given extent of ground either in frontage or depth, though the single section of two or four guns is quite sufficient when firing upon a narrow target, such as a communication trench running up to the enemy's front. The number of guns to be used will be settled by the extent of the target. The range being given, the machine gun officer can say, "With so many guns at such a distance, I can cover such and such a space of ground with a steady rain of bullets." Actual experience has shown that he has thus the power of inflicting serious loss on the enemy's supports, and even driving them from point to point in search of cover or escape from the showers of bullets that are descending from some unseen firing point. *Colonel Mayne years ago (1903) argued for the possibility of sweeping with rifle fire the reverse slopes of hills or rising ground behind which an enemy was sheltering his support and reserves.* The idea was perfectly sound in principle, but a difficulty arises in its realization in practice, from the unsteadiness and uncertainty of indirect fire. The steady certainty of the machine gun remedies this, and makes Colonel Mayne's idea of indirect fire with trajectories conforming to the slope of the ground perfectly practicable.

One need hardly point out that, with gunner trained to use long range fire in the way which has been described, it will be a simple matter for them to use the same kind of fire over the heads of their own infantry in support of an assault. Many writers on tactics show a reluctance to admit of the firing of

machine guns over the heads of advancing infantry and in support of it, on account of the danger of the gunners inflicting loss on their own friends. With the least care as to watching the advance of the infantry, this danger utterly vanishes with the high trajectories of long range fire. In fact, it can ony exist when the guns are firing from positions close behind the infantry, and therefore at medium and short ranges.

SIEGE BATTLES.

There is, of course, in the entrenchment battle, which is a prolonged series of trench operations, and in the assault, which is its culmination, abundant scope for the use of machine guns at short ranges, as well as for this elaborately prepared indirect and high-trajectory fire at long ranges.

The use of machine guns at short range in the assault approximates to its use in the maneuver battle in the open. But there are certain differences. In many ways the task of the machine gunner is simpler. Thus, there is no question of the gradual advance from position to position during the preliminary fire fight of the battle in the open, an advance which requires some of the highest qualities of leadership. In *the entrenchment battle* the position for the guns at the outset will have been deliberately chosen beforehand. There will be selected points in the advanced line of trenches to which the guns will, of course, be brought up under cover by the communication trenches, probably during the might. There will be no difficulty about ammunition supply, for an abundance of cartridges will have been collected at the gun positions. The enemy's line having been carefully mapped in advance, the choice of targets will be easy and the ranges can be fixed with absolute accuracy. At the outset these will be very short and all within fixed sight range.

There is a special kind of preparatory work which is sometimes assigned to machine guns in the advanced line before the assault. They may help in the destruction of the wire entanglements in from the of the enemy's works. They cannot do much damage to the wire itself, but the supporting posts can be cut down by the stream of bullets from the gun. It is an application in practical warfare of the trick with which Sir

Hiram Maxim used to impress the spectators at trials of his gun when he was first exhibiting it. He used to cut down a tree three or four hundred yards off by firing upon it with a short traversing motion of the gun to distribute the bullets across its entire width. In this way he often brought down a large tree with a single belt of cartridges. In firing on an entanglement far fewer shots are necessary to bring down a supporting post, for once it is badly damaged the tension of the wire support will often be quite sufficient to break it off near the ground.

Once the assault is launched the guns in the advanced trenches will push forward after the first wave of the attack. Having got into the enemy's position, their work will be to assist the infantry in clearing points to which he still clings, breaking up any attempt of the defense to rally or to counter attack.

In a close fight of this kind there are greater chances of enfilading communication trenches and trenches of the second line, and in fight for villages within the enemy's line the guns will be able to use their concentrated fire in clearing the streets.

It is held by some that machine guns should not attempt to engage the machine guns of the enemy, leaving to the artillery the work of silencing them. But in villages and trench fights there may be exceptions to this rule. There will often be a chance of opening fire on hostile machine guns, not directly from the front, but obliquely or from the flank, and the more suddenly the fire is opened the more effective it will be. In village fights guns are sometimes found mounted inside a window on the ground floor or the first story of a house. It is difficult to silence them with infantry fire, but we have here another case where a machine gun may be usefully brought into action, not, of course, in the open and under the direct fire of the enemy's machine gunners, but after bringing it up under cover behind a wall or other obstacle, or inside of a house, from which the hostile machine gun posts can be seen. The action of the gun at short range is then like that of a fire hose directed upon the window that is attacked.

In the fighting inside the village of Loos on September 25th, it is said that effective use of machine guns was made in

clearing the houses by bringing them up to close quarters and firing a few rounds upon them into the lower windows of the houses. The rapid reports of the gun were sufficient to stampede the enemy holding the houses attacked.

The lighter type of machine guns without a feed belt, such as the Lewis, Hotchkiss and Madsen, are the best adapted for this kind of close fighting, which will often entail hurried movements under cramped conditions.

But perhaps the most important work of the machine gun in the assault will be the part they will take in securing permanent possession of the captured ground. Attempts at counter attack will be practically certain to be made, and it will often happen that the direction of these attacks can be easily forseen, and the lines of approach for the enemy will be restricted by existing obstacles, and the tendency to use communication trenches and similar partially covered lines of advance. The attacking force will also tend to collect in a mass of men either from the very outset or at the first check to those in front. The range will also be short. Also help from long range machine guns. All these conditions are favorable to machine gun effect, and it will be essential to have a number of guns got into position in the captured works at the earliest possible moment, and placed so as to sweep the probable lines of counter attack. A captured line of works will in most cases have an irregular frontage, some portions of it lying well to the front of the main line, and these advanced points will afford good positions for bringing the enfilade fire of machine guns to bear on the counter attack, and at the same time such a salient position can be strengthened by placing guns farther back to the right and left of it to sweep the fronts and cross their fire beyond the angle of the salient. These points suggest that it will be useful to have an officer (Divisional M. G. Officer) detailed to direct the general organization of the machine gun defense in the captured position, instead of leaving it to officers commanding smaller groups of guns to push them forward here and there is a somewhat haphazzard way, suggested by their own impressions of local needs and without *taking into account the necessity of coöperation, which will make the fire of a smaller number of guns thus organized on a general plan even more effective*

than that of a far larger number put into the front here and there by individual section commanders.

The tactics of mach ne guns on the defensive in entrenchment warfare hardly need any lengthened explanation. What has been said of the use of the guns in securing a captured position applies equally to their use in protecting the advanced lines of entrenchments against a possible assault or some local enterprise of the enemy. Entrenched positions are now held for such a length of time that their defense can be as elaborately arranged as that of a permanent fortress.* With a comparatively small number of machine guns installed in carefully concealed and thoroughly well protected positions, provision can be made for sweeping with flanking fire long fronts of the advanced trenches, and at the same time guns can be used from positions farther back to bring a high angle fire to bear upon the supports of a hostile attack. The mobility of machine gun sections and motor machine gun batteries also provides ready means of reinforcing any point of the front that is attacked.

NIGHT FIRING.

Various methods have been devised for using machine guns at night in repelling attacks on an entrenched position. Many of these plans work out fairly well on the rifle range, but in actual fighting it may be said that night firing is only effective when the simplest arrangements are adopted. Complicated devises are apt to give disappointing results. Where the target can be illuminated with the help of searchlights, star-

*In their arrangements for defending their entrenched positions, the practice of the Germans seems to be to have very few guns in the first line trenches, but considerable numbers of them in the second line. This arrangement is based on the theory—justified by the experience of many attacks made from both sides—that, given a sufficiently powerful artillery preparation, the first line trench can be nearly demolished, and then easily rushed along a considerable front. The further progress of the assault then becomes much more difficult, and the really serious fighting is for the second line of trenches, and the machine guns massed there are a most valuable element in their defense in this critical stage of the battle. In several narratives of the Battle of Loos one finds officers and men who took part in the assault telling of the heavy loss inflicted by machine gun fire in the advance beyond the first line of trenches—losses far exceeding anything that was incurred in the rapid storming of this first line.

shells, flares, and the like, the conditions approximate to those of daylight. But where the firing has to be done in the dark, without such helps, it is safer to be content to use it only where the guns can be laid in the daylight on a limited line of approach over which the enemy must come—a road, a bridge, a defile and the like; to clamp the gun in the required position; to keep the fixed elevation and use only a very limited amount of traversing. There are various plans for marking during daylight the various positions in which the guns can be placed, and then putting it into position and opening fire in the dark, but all these complications give many openings for error, and the only safe rule is to use none but the simplest methods.

MANEUVER BATTLES.

Before the war, writers on machine gun tactics devoted their attention chiefly, or even exclusively, to the use of the guns in the maneuver battle, fought over open ground. But the prolonged fighting on entrenched fronts, which has been the predominating feature of the war in the West of Europe, has tended to concentrate attention almost entirely upon this curious combination of battle and siege methods, but the tactics of machine guns in the open have still their importance. It is obvious that, where armies have become committed to the prolonged warfare of entrenchments, the result is a kind of stalement or deadlock, and that a decisive result can be obtained only by one side or the other breaking through the opposing entrenched lines, this success being the prelude to a series of further movements that will involve maneuver battles.

It is true that even in these battles there will still be entrenched positions, for nowadays no body of troops will halt even for a single day without strengthening its position and digging itself into the ground; but the entrenchments, on account of lack of time will not be of very formidable character. They will be very different from the elaborate and complicated works that have gradually grown up during long months along the opposing fronts in France and Flanders. They will be more like the shelter trenches, gunpits, and other light field works, which we find described in the drill books of many years ago (1893), and on both sides the main resource for securing

cover will be the use of the existing natural features of the ground. Under these conditions we shall have again battles fought out in the open.

In such a battle the most important work for the machine gun will be to support the infantry attack. This support can be given in two ways—by long range covering fire, and by the fire of machine gun sections accompanying the infantry advance.

As for the first method. There certainly will be occasions when the long range fire of the machine gun may be usefully employed. In discussing machine gun tactics in the entrenchment battle we have described methods by which this kind of fire has been effectually used at ranges up to 1,800 yards. The special conditions of the entrenchment battle, the thorough mapping of the ground, and the accumulated results of aerial reconnaissance, make this kind of fire easier to employ than it will be in battles in the open. But this only means that in the latter case it will not be so frequently employed as in the former. The experience of entrenchment warfare has shown what are the powers of the weapon at long range, and it would be irrational to lay down fixed rules that no attempt should ever be made to use the machine gun under somewhat analogous conditions in the open, or to fix a thousand yards as the extreme limit of its useful employment.

We would suggest that there is all the more reason for endeavoring to develop the use of the gun at long ranges, because if it can be successfully employed in this way it would meet a practical requirement of the modern battlefield. A few years ago the normal range at which field artillery came into action was frequently fixed at about 2,500 yards as an ideally satisfactory distance. It was after the experiences of the war in South Africa that field artillery ranges were lengthened. Until then our shrapnel fuses were designed for action at ranges at which the artillerists of today count as medium or short, not long. With the lengthening of the artillery range we have left between the normal artillery positions and the ranges at which infantry come into action an intermediate zone, for which there is no approximate weapon. The long range fire of infantry is notoriously of problematic value, and effective only under very

special conditions, with very highly trained men and with exceptional leadership. Our infantry rifle is sighted up to more than 2,500 yards, but in practice is hardly ever fired at even half this distance. At ranges above a thousand yards machine gun fire has been proved to be far more accurate than infantry for reasons that have already been explained.

But if we take the broad zone of possible ranges from 1,000 up to say 2,500 yards, we will find that, as a rule, artillery will not be brought into action at these ranges. It will generally be easier to find new positions for it beyond the 2,500 yards limit. At these longer ranges its fire will be effective, it will have a larger choice of targets, it will be easier to concentrate the fire of several sections on a given point, and there will be greater facilities for cover and concealment from view.

On the other hand, machine gun sections can find positions which will give them sufficient and even ideal cover on grounds where it would be impossible to find shelter for a battery of artillery, and we would suggest that the normal ground on which the machine gunners should seek for positions for long range covering fire in support of the infantry attack should be in this intermediate zone between the long range infantry positions and the nearer artillery positions, a zone of ground nearly a mile wide. The machine guns would thus fill a gap in the arrangement of the various zones of fire on the battlefield Their action will be analagous to that of the long range machine guns in the entrenchment battle, which has already been described. The section of machine guns will probable have to change its position during the fight. It can somewhat deliberately select the ground on which it will come into action, the chief requirements of which will be good cover, which can be artificially improved, and a view to the front that will enable fire to be brought to bear upon the point attacked; or, alternatively, indirect fire can be used with the help of an observation station, and the gunners need not have a direct view of their targets.

More intermediate support can be given to the infantry attack by the machine gun sections which actually accompany it. Before the present wars it was a generally accepted idea that machine guns could find a place even in the actual firing line, but one sees now the tendency in some quarters to regard

this as impracticable, and restrict their activity on the battlefield to covering fire. Those who hold this view suggest that if it is desired to increase the volume of fire in the actual front of the attack by mechanical means, this can be done by arming a certain number of the men in the firing line with automatic rifles, or if machine guns are used for this purpose, giving them guns of the type that approximates to the automatic rifle, such as the Lewis gun.

There is a possible objection to this suggestion, arising from the question of ammunition supply. Whatever kind of rifle the soldier carries, whether the ordinary magazine rifle or the automatic, or the Lewis gun, the increase of fire power can only be secured by his having a supply of ammunition greater than that which the infantry soldier ordinarily carries. The limit of this possible supply is soon reached, and if it is to be increased the soldier must be accompanied by ammunition carriers. We thus come back to something very like a small machine gun section. If we are to have men in the firing line doing the actual firing, while others attend them as ammunition carriers, we have the group of men which the opponents of the employment of machine guns in the firing line regard as a dangerous target to hostile fire. The objection is not serious, for the group can work together without actually standing side by side and attracting attention. But once we recognize the possibility of placing such a group in the firing line, there is no reason why the group should not be provided with the more powerful guns of the Maxim, Vickers, Colt or Hotchkiss type, and have the advantage of a second group with a reserve of cartridges working under cover somewhere in their immediate rear. This gives us the machine gun section, and the experience of the actual work on the battlefield in earlier wars shows that, with good leadership and proper use of ground, such a section of machine guns can find a place in the firing line without drawing upon itself a destructive hostile fire.

We take it, therefore, that in coming battles in the open, besides the long range covering fire of the machine gun in what we have described as the intermediate zone, it will be well to have machine gun companies accompanying the working with the infantry in the attack, in order to increase their fire power

and give them the advantage of suddenly concentrating an intensely powerful fire upon a given area in the hostile line when the opportunity offers.

The conduct of such machine gun companies will require very high qualities in their commanders. They will not have an easy task to perform. They will have to be complete masters of their weapon, have a good eye for ground, a sound and ready tactical judgment of the situation. and the enterprising spirit that will seize and make the utmost use of every occasion for their intervention in the fight. These opportunities are often very fleeting. The chance of using the guns presents itself, and if it is not recognized and seized at once the situation changes and the occasion has passed away.

It is obvious, therefore, that a considerable independence of action must be left to the machine gun company commanders, and their own initiative must be largely relied upon for their timely and effective coöperation with the troops of other arms with which they are acting. It has long been recognized that on the modern battlefield, once an attack is launched, the directions of the actual fighting necessarily passes into the hands of officers commanding small units. In the infantry attack the battalion commander has to content himself with giving general directions at the outset to his company officers, and relying upon them to act as circumstances may require once the advance begins. It follows, therefore, that once the machine guns are sent forward the same liberty of action must be left to the commander of a section of guns that has already been conceded to company and platoon commanders. In the case of the machine guns this is all the more necessary because their tactical handling must depend entirely upon the judgment of the officer who commands them, and the opportunities for their effective action has to be seized at once.

The machine gun officers will therefore be given at the outset of the attack complete instructions as to its general plan, and a direction as to the way in which they are expected to cooperate. After this all details of execution must be left entirely to them. *If the machine gunner cannot be trusted to make the best use of his guns, he should not be in command of them, and*

the only men who can judge as to what is possible or useful is the man behind the guns.

Even if the machine guns are organized in companies, the section will still be the tactical unit. Where the guns are all together the company commander can direct them to a certain extent, but he will direct them in the best way if he handles his sections as the battalion commander handles his companies—namely, by giving only general instructions and leaving to the section commanders as great a freedom of action as possible. This is not asking too much, for we have seen that there is good authority for regarding the fire of a machine gun section as practically equivalent to that of a platoon of infantry.

Our Manual of Infantry Training lays it down that there can be no set form for the attack. General principles are stated, but the circumstances of each occasion are the only guide as to how these are to be carried into effect. When the machine gun sections become a part of the attacking force the same rule obviously holds good. One cannot fix in advance what their place is to be in any and every attack. All that one can do is to note some general principles to guide the machine gun officer.

In the chapter on the evolution of machine gun tactics we have seen that two different opinions have been put forward as to the place of the guns in the opening stage of the battle. According to some writers, they should be held in reserve at the outset, until the opportunity comes for pushing them into the fight. According to others they should be with the infantry in the firing line from the very beginning of the advance. There is something to be said for this latter view. Amongst the considerations which recommend it one may note that in the first stage of the attack there will occasionally be opportunities for taking advantage of the long range fire of the machine guns, and further it is obvious that there will be many situations in which it will be easier to carry the guns forward under cover if they start with the fiing line than to bring them up to it when it has already made some progress and its movements are being carefully watched by the enemy's observers. The movement of the guns into the line in such cases betray their position at once and betray them to the chief danger that machine guns

have to face—namely, the deliberately concentrated fire of hostile artillery.

It is, however, possible to take a middle course *now that machine guns are being multiplied in numbers in all armies.* The question of putting them into action at once or holding them in reserve was more difficult to solve when only a few guns were available. *Now that there are many of them, one may perhaps take it as a good working rule to divide the force, put some machine guns into action at once, and hold the rest in reserve for a while, to be sent up as the firing line is reinforced, or to be pushed forward to bring a storm of concentrated fire to bear as ordered.* A reserve of this kind is so valuable that it is well worth while to keep it in hand until the development of the fight shows where it can best be used.

It may perhaps be objected that this is the revival, in the case of the machine gun, of a tactical theory that was tried and abandoned in the case of the artillery. It was long the fashion to divide the artillery into the field batteries that were put into line at the outset of the battle and the reserve of artillery that was held in hand to be pushed in at a critical moment The accepted doctrine now is that, unless exceptional circumstances, to keep guns waiting in reserve is to sacrifice fire power. But in the case of the machine guns we must guard against being misled by the old false analogy between the field gun and the machine gun. The rule always hold good that machine guns are not artillery, but are "condensed infantry fire." *The reserve of machine guns do not represent fire power left idle but they should be classed with the infantry supports and reserves kept in hand to be used to reinforce and carry forward the firing line.* It will only be under exceptional circumstances and with small forces that it will be advisable or even possible to put every rifle into the fighting line at once, and the same hold true of the machine guns.

The final orders for the attack will, if possible, be issued with the actual ground in view. With the machine guns as with the infantry, it is all important that a good start should be made. It is almost impossible to remedy at a later stage any serious error made in the launching of the attack. In its preparation there should therefore be an absence of hurry. This

does not mean that time should be lost, *but the worst loss of time arises from mere restless precipitation. If the machine gun officers are properly trained, they should be able to carry through the deliberate preparations for the opening of the attack very quickly. It is important to have a good look at the ground, and previous practice in the study and appreciation of ground will make the work of reconnaissance a matter of a few minutes.* The point to be kept in view is to look out for a first fire position for the guns, and the best way of getting them up to it, *and then with the help of the map and such view of the ground as can be commanded to try to get a genral idea of where further positions are to be found as the firing line presses forward.*

Obvious facts are sometimes forgotten, therefore it would be well to note that, though riding on to the actual ground and remaining in the saddle gives an officer a better view and enables him to move about more rapidly, it is a sound rule to dismount under cover and do the actual reconnoitering on foot. Even then one must take care not to stand out in the open, and the range finder who accompanies the officer should not stand close to him, and should be equally cautious about being seen from the front. *Keeping low down and under cover, and looking to the front from a kneeling position, has the further gain that the reconnoitering officers will get the same view of the ground that will present itself to the machine gunners when the guns are brought up.* This careful use of cover in the reconnaissance is all important. Even at long range there are hostile eyes on the watch, with good field glasses and telescopes to help them, and the appearance of an officer and a range finder moving about an examining the ground will suggest to the enemy, if he sees them, that perhaps not machine guns, but even field guns will soon make their appearance, and the enemy's gunners may then be on the lookout to pour a storm of shell on the very position that had been selected.

* * * * * *

APPLICATION OF FIRE.

As to the targets selected for fire in battle, one cannot always expect to have the ideal target, combining depth with front. It will often happen that guns will have to be brought

into action against what is theoretically a bad target—namely, a hostile firing line in very open order. To obtain a good effect in such a case the action of several guns will have to be combined first to find the target and then to bring a considerable part of the skirmishing line simultaneously under fire by *placing the descending bullet sheaves of the guns side by side along the hostile front.* This will give a prospect of suddenly sweeping away a whole sector of the enemy's fighting line, and will produce a greater effect than a mere spraying of the line from right to left by traversing fire. It is an application of the principle that the greatest moral effect is produced by sudden and serious losses.

In Russian narratives of the Manchurian War one finds some instances of effective machine gun action against a Japanese firing line by the method known in the Russian army as *zone fire with sweeping.* This consists in firing a certain number of rounds at varying elevations, at the same time traversing the gun from left to right and back again, the object being to cover a rectangular space with a hail of bullets In an article published in the *Revue d'Artillerie* in January, 1905, which gave long extracts from the diary of a Russian machine gun officer, published in the *Russki Invalid*, there is an account of the dispersion of a Japanese attack in open order by this kind of fire. In the same narrative we have an account of the destruction of a Japanese battery on the move. In this case combined sights were used with four guns, the first firing at 1,200 paces and the others increasing the range each by twenty-five paces. The destruction of the battery cost 6,000 cartridges.

In discussing the use of machine guns on the battlefield one naturally thinks first of the attack, but n every battle they will also have to be used on the defensive on certain parts of the line, and even where an attack is in progress there will continually be periods when the guns have to be used temporarily and locally on the defensive. In fact, one of the chief uses of the guns will be to provide an ever-ready reserve of fire to hold the enemy, break up a local counter attack, and secure the ground already won.

GUN INTERVALS.

In both attack and defense there should not be, and there need not be, any crowding together of the guns. As a rule even the two or four guns of the sect on should not be close together, and the massing of sections side by side is generally a mistake. By keeping them apart, there is less chance of their becoming easy targets for hostile artillery fire, *and they can combine their own fire*, even from widely dispersed positions—in fact, dispersion is an advantage, for thus the guns can more easily cross their fire, and oblique fire is generally more effective then frontal fire.

REAR GUARD ACTION.

In case of the temporary or complete failure of the attack the machine guns will have to do their utmost to cover the reorganization or retirement of the infantry they are supporting. Some of the guns will be used to create a screen of fire between the infantry and the enemy; others will use high angle fire against the reserves which the enemy is bringing up for the counter attack. Work of this kind is practically rear guard action. In a prolonged retirement a rear guard should be well provided with machine guns In such a case it will be well to place a number of sections or companies under one commander, who will supervise their general movement, and the best plan to adopt is to divide the machine gun force into two portions, one of which will be in action, while the other is taking up a second position farther to the rear. The guns of the first detachment will retire through this second line. All retirements can be made gradually, a few of the guns being kept in action until the last moment.

CAVALRY.

Cavalry is now so largely used in the dismounted combat that the action of machine guns attached to them will generally be the same as infantry. There have been in the present war few instances of cavalry charges, even against hostile cavalry. In the case of cavalry engaged against cavalry, the action of the supporting machine guns will be analagous to that of horse

artillery. They will endeavor to take up a flank position, from which they can bring their fire to bear upon the enemy's cavalry while their own cavalry is advancing to the attack. If such an opportunity occurs the machine guns will always have an ideal target in the close-ordered lines of mounted men forming the enemy's force. The guns will have to provide for their own protection, and will often be able to take up a position where they are practically safe from mounted attacks.

OUTPOSTS.

With regard to the employment of machine guns for outpost duty, all that need be noted is that they will often be useful where a picket is watching a road, bridge, defile, or other marked line of approach. In such case arrangements can be made for night firing. Where the outpost line is also intended to be the line of resistance it will be useful to have a larger number of guns with outposts, and to subject in advance the positions to which other guns are to be brought up.

AIR CRAFT AND MOTOR CARS.

Without attempting to do more than give some general indications as to the use of the machine gun with aircraft and with motor cars, something must be said of these recent developments.

The petrol-driven motor car was still in a very elementary stage when it was suggested that in coming wars it would be armoured and armed with machine guns to make dashing raids along the roads on an enemy's front and flanks, or even far in his rear against his communications. It would be something like a land torpedo-boat. Sanguine advocates of the motor car even made forecasts of armoured cars moving across country charging into the midst of hostile troops and destroying them with the allaround fire of machine guns and light quickfirers.

It was some time before the motor car became sufficiently reliable for even much more modest claims on its behalf to be accepted by practical men. But before the Great War began it had been so improved that it had been adopted by most of the armies of Europe for a great variety of purposes, notably for the conveyance of staff officers and messengers, and for

replacing horses by mechanical transport. It has also been used on both sides for the rapid bringing up of infantry, either to reinforce a fighting line or to support the advanced cavalry. With these developments came the armoured fighting car with machine gun armament.

In the British service the armoured car was first introduced by the Navy. It was the result of the occupation of Ostend in the last week of August, 1914, and the establishment of a base there by the Royal Naval Air Service. They found the Belgians in West Flanders were using improvized armoured cars on the roads, and some of these cars proved to be useful helpers in the work of our airmen. A report from Ostend to Mr. Winston Churchill, then First Lord of the Admiralty, led to the immediate organization of the armoured Car Division of the Naval Air Service.

With Ostend and subsequently Dunkirk, as its base, the Armoured Car Division did excellent work in reconnoitering in connecting with the airmen and the cavalry and in driving in the enemy's patrols in the district. The sailors handled the cars like "land torpedo boats," to use the expression of Lord Charles Beresford. Their first exploit was thus officially chronicled in an Admiralty Report, dated September 18, 1914:

"On the 16th instant Commander Sampson, with a small armoured motor car force attached to the Naval Flying Corps, encountered a patrol of five Uhlans, near Doullens, killing four and wounding and capturing a fifth. The British force suffered no casualties."

After these first experiences armoured cars with machine guns were attached to the British forces, not only in France and Flanders, but also in the Gallipoli Peninsula and in Africa. They even took some part in General Botha's operations in German South-west Africa, moving on very different ground, and in one instance bearing the chief share in the repulse of a German attack on the British camp near Wallfisch Bay. In the Gallipoli Peninsula they were used with effect on almost roadless ground.

As a general rule the heavier type of armoured car, in which the gun is permanently mounted in a kind of turret, will operate on the roads. It is obvious that it can give invaluable support

to patrols and detached parties, the men working the gun being themselves fairly safe from rifle and machine gun fire. The drawback of the car is that it is rather a prominent target for hostile artillery. Here its power of rapid movement is its chief resource. The commander of an armoured car has to run the risk of being knocked out by a direct hit, and the further danger of being ambushed, with the road which is his line of retreat being obstructed behind him at the same time. The Germans have repeatedly tried to dispose of a patrolling car in this way, but it is not certain that they have ever succeeded.

There is another type of motor machine gun mounting evolved from the motor cycle and its side car. The gun, tripod, and shield, and a first supply of ammunition, are conveyed in the side car. In this case the motor brings the gun up to the scene of action, and it is then taken from the car and placed in position. It could be actually fired from the side car, but for practical purposes the motor and car should be regarded rather as the means of bringing a reserve of guns at high speed to the place where they are wanted.

Motor machine guns of both kinds have been successfully used to close a gap in a line or support troops who are rapidly driven in. It is obvious that in covering a retreat along a good road they would have a very high value. We may take it that their normal work will be to support patrols and advanced parties, to operate against enemy s patrols, and to form an efficient mobile reserve. The heavy motor car has the advantage that, besides carrying the gun, it can convoy a large supply of ammunition, and is thus an independent unit.

The experience of the present war shows that armoured motor cars can be used even on rough ground where there are no good roads. One of the armoured car squadrons of the Royal Naval Division did good work during the fighting in the Gallipoli Peninsula, and armed motor cars were used in the desert fighting against the Senussi Arabs on the Western front of Egypt in the present year.

It has been proposed that machine guns mounted on motor cars, so as to fire at a high angle should be used against hostile air craft. The proposal seems attractive, because the gun could

follow the enemy's airmen and often move as rapidly as they can. The drawback, however, is that against an aeroplane no serious damage can be done, except by a lucky hit, on a very few points. To kill or seriously wound the airmen, to damage the propeller or the engine, or cut some of the wire stays, might dispose of the aeroplane. But the mere riddling of the planes with bullets makes practically no difference to the flying power of the machine. Against dirigibles the mere firing of machine gun bullets is still more ineffective. In a paper on aerial warfare read by Mr. Walter F. Reid, at the Royal United Service Institution in February, 1911, the lecturer said:

"So far the effect of artillery fire against balloons have been disappointing. Captive balloons, which wait patiently until they are hit, have indeed been brought down, but even if hit they are not necessarily placed *hors de combat*. Colonel F. C. Trollope mentions that only one case occurred of a balloon being hit during the Boer War. A shrapnel shell fired at a range of about 600 yards burst in front of it and made sixty-eight holes. But the balloon took twenty minutes to come down, and was subsequent y mended.*

This incident is quoted here to show how little result can be expected from machine gun fire against the huge aircraft of today. If a captive balloon suffered so little damage from sixty-eight penetrations, it is evident that very little damage would be done to a Zeppelin by a large number of machine gun hits, for these giant airships contain within their rigid case fifteen or sixteen independent gas chambers, and the riddling of one or two of these by machine gun fire would lead only to the slow escape of gas from the damaged compartments, and thus diminish only to a relatively small extent the lifting power of the airship. Machine guns have been used and are being used, in the present war, against aircraft, and no doubt it is useful in so far that it endangers the lives of their crews and forces the airship to keep at a high altitude, but it is clear that the real weapon against the airship is the gun mounted at a high angle and firing shells.

In the early days of aircraft—and these early days were only a few years ago—it was only a small group of enthusiasts

*J. R. U. S. I., June 1911, p. 742.

who ventured to propose that an aeroplane could be armed and converted into a fighting as well as a scouting unit. As late as February, 1911, in a discussion on the subject at the Royal United Service Institution, more than one expert protested against the idea as impracticable. Before the war machine guns had been mounted experimentally on a few aeroplanes.* It is evident that the machine gun, which absorbs its recoil in actuating its mechanism, is the ideal weapon for this purpose. Rifles have been used from aeroplanes, but the machine gun is a far superior weapon, the rapidity of its fire increasing the chances for a really successful hit, and the machine gunner on an aeroplane has a better chance of damaging a hostile aircraft than if he were firing from the ground. He can hope to obtain a position from which he can bring his fire to bear on the vulnerable points in a direction from which more than one of them will be within his possible line of fire, and he can close to an easy range. The discussion of the best method of action—the tactics of the machine gun in aerial warfare—must be left to the airmen. Much interesting information on the subject will no doubt be available when the end of the war comes and they are able to speak freely about matters that are now necessarily kept secret. Meanwhile, in order to give some idea of what aerial fighting is like, we may give an extract from the work on "Aircraft in the Great War," by Claude Grahame-White and Harry Harper, published, in March, 1915:

"There were, at the outbreak of the war, a certain number of French aeroplanes, with motors of 140 h. p., which had machine guns fitted to them. But these craft, owing to their power, and speed and the weight they carried, were difficult to handle; none but an expert would dare to fly them, while the risk of damaging them in alighting was so great, owing to the pace at which they made contact with the ground, that few survived for long the rigours of active service. But the need was such that supreme efforts had to be made; and, before long French pilots were given a biplane, steel-built throughout and with

*In June, 1912, the Lewis gun was well tested from a two-passenger Burgess-Wright aeroplane at the U. S. Army Aviation Station at College Park, Maryland. On November 25 and 26, 1913. Captain K. R. Davis fired a Lewis gun from an aeroplane at Bisley at targets made of sheets two feet by thirty feet.

large sustaining planes, and fitted with a motor of 200 h. p.; and the machine proved so efficient that, in spite of the weight of machine gun, combatant and pilot, it would attain a speed of more than seventy miles an hour. This type of craft, of which as many as possible were sent to active service, has done admirable work. British gun-carrying craft, also, have been greatly improved, thanks to the experience of the war.

"The value of a machine gun in an aerial combat, with its comparatively long range and the concentration and rapidity of its fire, was shown by a fight which took place between a French biplane flown by M. Louis Paulhan, and a Taube monoplane, steered by one of the German pilots. With M. Paulhan was a passenger, whose duty if was to handle the machine gun, the airman contenting himself with the piloting of the machine. They were on a reconnoitering flight, passing high toward the German lines in the direction of Amiens. Below here and there, floated a film of cloud. Suddenly beneath them and to the rear, appeared from the clouds the German monoplane. Paulhan, quick to realize the advantage that his height gave him, swung his machine in a half-circle and dived like a hawk above his foe, bringing himself in one rush to within 500 feet of his enemy. But the German pilot was also a man of action. To continue on the course he had been holding was, he saw, merely to court destruction, seeing that he was in a position of tactical disadvantage. So, making a quick turn, and diving to increase the speed of his machine, he attempted to avoid the encounter and swung away upon his opponent's flank; and, had the weapon of the Frenchmen been a rifle or revolver the German would certainly have escaped. But as it was, opening fire promptly with his machine gun, the passenger in Paulhan's craft, having for the moment a broadside view of his enemy's machine, riddled it with bullets and sent it crashing to earth. A stray shot from the German, fired just before he was put out of action, pierced the petrol tank of Paulhan's machine; but the aviator, flying back towards his own lines, was able to and safely near a French battery.

"In another instance, which revealed the effectiveness of machine gun fire, a German biplane was passing above the lines of the Allies when a French craft rose unexpectedly to meet it. The French pilot steered his machine straight at his antagonist;

while his passenger opening fire with a machine gun, was able not only to puncture the German's petrol tank but to shoot dead his passenger. The German pilot began to plane earthward; but, suddenly owing to a leakage of petrol, the aeroplane burst into flames, and he was burnt to death before he could escape from the blazing craft.*

Machine guns are said to be mounted on some of the German aircraft on a platform on the top of the body of the ship, with a view to supplying fire effect against hostile aeroplanes. Such an armament will give a very limited protection against a daring adversary. Probably the true defense of an airship against aeroplane attack will consist in its being escorted by aeroplanes, as a battleship squadron on the sea has its escort of destroyers.

The most recent and the most authoritative work on aerial warfare is a book published in the present year under the title "Aircraft in Warfare," by Mr. F. W. Lanchester; a member of the Government Advisory Committee for Aeronautics, with a preface by Major General Sir David Henderson, the Director-General of Military Aeronautics. Mr. Lancaster considers the Lewis gun the best existing armament for the fighting aeroplane. He suggests, however, that it may be worth while to devise a machine gun throwing a heavier round-nosed bullet, which at short ranges would do more damage to a hostile aeroplane than the present small-bore pointed service bullet, and that possibly two or three barrels might be combined in one gun to increase the volume of fire during the brief time when the gun is in action in a favorable position. Lewis guns in the air service are fitted with larger sized magazines containing forty-seven cartridges. This is done to save the time that would be spent in changing them for a full magazine. In aeroplane work it is fairly easy to keep the guns cool; the rush of air caused by the motion of the aeroplane gives a superabundant air-cooling action. Even when Maxim guns are used the water-jacket is generally removed.

Guns are now often mounted in aeroplanes in a fixed position without any pivoting. Aim is then taken by directing the aeroplane itself towards the target. The gun is mounted in front of the machine, and fires through the revolving propeller.

*"Aircraft in the Great War," p. 329.

Reprints & Translations

OUR WAR WITH GERMANY.*

V.

(July 18th—August 18th.)

ACTIVE preparation for war, and active talk of peace—chiefly instigated by Germany or German sympathizers—were the dominant features of the fifth month of American participation in the "War of 1917." The preparatory feature included the formal drawing of the numbers of the nine million and more young men throughout the country registered under the selective draft law. This drawing officially determined the order in which those registered would be called for service. In accordance with the lists resulting from this drawing, the exemption boards in the various districts all over the country have been calling men for examination and for presentation of their claims for exemption from service. The work has progressed steadily and without very much friction or opposition—not more than might have been expected from American lack of national discipline and from the American habit of loose-mouthed disregard for law. In a few places, notably in the West and South, opposition to the draft took the form of violence and rioting, resulting in shooting and murder in Oklahoma—a fact most sharply impressed upon Senator Gore, of that State, in the Senate, where he has set an unpleasant mark upon himself by opposition to Administration war measures. But

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on the whole the selection of the new National Army under the draft procedure has progressed very well, and the closing of the fifth month finds something more than one-third of the men for the first 500,000 contingent selected, and regulations issued under Presidential authority for their concentration in training camps beginning early in September.

The formal drawing took place in a committee room in the Senate Office Building at Washington on July 20th. Mr. Baker, Secretary of War, drew the first number, 258, and thereafter the drawing proceeded rapidly until at 2:18 the next morning the last number—3217— was drawn, and the order of calling the registered men in each of the 4557 districts of the country was fixed.

By the end of July the examination boards were ready for their work, the preliminaries had been completed and the formal selection of men for service commenced. In different districts there were many claims for exemption, the ground most frequently urged being that the man was married and that his labor was needed to support his wife. That was the basis of the claim for exemption of Kingdon Gould, grandson of Jay Gould, who had been married but a short time when he was drafted. Mr. Gould, however, permitted his claim to lapse by not filing supporting affidavits within the required period. Charges of fraud in granting exemption were made in some cases, and one New York City exemption board was dismissed. Two of the members of this board pleaded guilty and were sentenced to prison. In general, exemptions were cut down. The New York City board of appeals, headed by former Justice Charles E. Hughes, granted only one appeal out of the first twenty-three heard. It was announced from Washington that the rush of men of serviceable age to be married as a possible means of obtaining exemption would not serve the purpose, for such marriages would not be recognized as sufficient ground for exemption.

While the selection of the first contingent of the new National Army was thus preceding, the formal calling of the National Guard kept pace with it. Under the President's orders the first part of the Guard was called into the Federal service on July 15th, and the remainder on July 25th. This

step was followed on August 5th by the formal drafting of the Guard into the national service, a procedure made necessary by the constitutional limitations on the employment of the "Militia" outside the national boundaries.

Despite the singular infelicity of governmental treatment of the National Guard during the last year, many of the regiments had been recruited up to the full war strength on the basis of the new organization when they were called up. It was the announced intention of the Government to send the Guard to training camps in the South, and the men had been led to expect that they would be in their camps soon after being drafted into the Federal service. But various obstacles interposed. Camps were not ready, and equipment was not available in sufficient quantities. Several of the States had prepared camps which would serve for their men, but the Government has chosen not to make use of them. The result is that at this writing most of the Guard is waiting in its home States for orders to move to training camps. One division has been selected for early service abroad, composed of units from different States.

Contrary to expectation of the Guard, and to assurance from Washington, the official designation of State units has been changed and they will serve in the National Army under national designation. The promise that the Guardsmen should serve in their own organizations has not been regarded, and men have been transferred arbitrarily from one regiment to another, although a strong recruiting argument has been that by enlisting in the Guard, men could choose their units of service and be assured of serving with relatives and friends. It was inevitable, however, that in the organization of a new American army of the proportions intended by the Washington Government, there should be room for some complaint. The calling of the Guard into service has brought the American forces under arms up to more than 800,000, with the first contingent of 500,000 for the new National Army yet to come, and a second contingent of the same size authorized.

With the bringing of so many men into service, the army organization which had been followed in his country since the Civil War has been changed to correspond to the modern or-

ganization employed in the armies of our European allies. It is urged that the new system affords opportunity for more effective use of the men with a smaller number of field officers.

Marching almost side by side with all these efforts to organize a great force of American soldiers for active participation in the fighting in France, has stalked the steady effort of Germany and German sympathizers to induce consideration by the Allies of German peace terms. The new German Chancellor put out his feelers only to meet prompt rebuff. At once, with merely a shift of location and personnel, the effort was repeated from Austria, with Germany immediately announcing her glad willingness to join.

But none of these peace kites of the Teutons, however ingenious of spectacular they might be, served to distract the American Government from the steady purpose with which it entered the war, to make the world safe for democracy. For all these German inspired peace feelers but faintly concealed the German purpose to make a peace on the basis of German victory.

These various efforts did lead, however, to one striking utterance which has helped mightily to crystallize and make visibly clear to Americans and all the world the fundamental purpose of American participation in the war. This utterance came from an Englishman, Mr. Balfour, who as head of the British mission to the United States conversed at length with President Wilson and was familiar with the motives and purposes of the American Government. In a speech in the House of Commons, discussing one of these Teutonic peace feelers, Mr. Balfour stated the American and the Allied attitude in one unforgettable epigram. Germany, he said, must be made "powerless or free" before the world could make with her a certain and secure peace,—powerless for wrong, if still under the iniquitous Hohenzol ern dom nation or free from Hohenzol ernism and so safe for association with the rest of the world.

As on prev ous occas ons Germany seized upon the inc dent of a military success to put out her peace feelers. The Russian offensive in Galicia, which started so well and gave such hopefu promise and which was the cause of so much rejoicing in this country a month ago, was turned suddenly into dis-

ruption and disaster through the defection and disorganization of the Russian army. Russian troops fled shamefully before the German advance, and all that had been gained was lost again, with more added. This treachery in the Russian army was fostered, if not induced, by German machination, and was the direct precursor of new German peace suggestions.

The American Government, however, was not deceived or induced to waver for an instant. In a speech to the men of the Officers' Reserve Corps training camp at Madison Barracks on July 29th, Mr. Lansing, the Secretary of State, declared that we "must overcome the physical might of German Imperalism by force of arms." He assailed Berlin's perfidy and asserted that Germany covets the United States as a prize. The world's liberty is at stake, he said, and added that "appeals to justice, to moral obligation, to honor, no longer avail with such a Power."

In striking confirmation of this appraisal of German official faith there appeared, on August 5th, in the first published instalment of a book by James W. Gerard, formerly American Ambassador at Berlin, description of his four years at the German capital, a copy of a telegram prepared by Emperor William himself on August 10, 1914, when the war was but a few days old, for transmission to President Wilson. In this telegram the Kaiser said to the President that Belgian neutrality "had to be violated by Germany on strategical grounds." Since that publication Berlin has made some attempt to deny or disclaim the telegram, but the original, in the Kaiser's handwriting, is in American possession.

Preparation for military participation in the war was by no means confined to the drafting of men for the new army and the calling of the National Guard. Additional men and supplies were sent to France and England; work on cantonments and training camps was pushed with vigor, as was that of procuring huge supplies of the various kinds of equipment needed—of ordnance, and of food and clothing for the forces soon to be in the field.

The great aviation bill which had passed the House but was held up in the Senate by the captious opposition of one or two men, was passed by that body on July 21st, in the form in which

it came from the House, so that no conference was necessary. It authorizes the President to make an unlimited addition to the signal corps of the army for aviation service, and carries an appropriation of $640,000,000 for the procurement and maintenance of air machines and for the organization and maintenance of the men. President Wilson signed the bill on July 24th, and active work under its provisions has been going forward since. In a public statement about the bill, however, Mr. Coffin, chairman of the Aircraft Production Board of the Council of National Defense, warned the people of the country against expecting the immediate creation of the immense fleet of aeroplanes of which there had been no little newspaper discussion. He pointed out that such an organization as proposed was not completed over night, nor could any such supply of machines as is desired be manufactured in a week or a month. But he did give assurance that by the opening of the spring campaign of next year the effects of this appropriation bill will be amply manifest upon the fighting fronts of Europe, and that Germany will know that the United States is in the war.

While this military preparation was thus going forward with regular strides, economic preparation was also making some headway. The food control bill, creating a food administration to which the President had announced his intention to appoint Herbert Hoover, reached, at length, the end of its weary and wordy course, through the Senate on July 21st, and was passed by a vote of eighty-one to six. For more than a month the opposition of six men, some of them Demorcats and some Republicans, had sufficed to prevent action on this measure of vital importance to the nation and to the war plans of the Administration. As passed by the Senate, the bill carried a number of provisions utterly repugnant to the Government. It created a food control board of three, to be named by the President and confirmed by the Senate. Also it created a joint war board composed of Senators and Representatives ostensibly to supervise the war expenditures of the Government, but denounced by President Wilson as an evidence of lack of confidence in himself. The opponents of the bill were able to prevent its being sent to conference until July 25th, and in conference the fight over some of the Senate amend-

ments was continued for several days. Senator Gore, of Oklahoma, one of the chief opponents of the bill, was chairman of the Senate conferees, by virtue of his position as chairman of the Senate Committee on Agriculture. Conference agreement was reached at length, however, with elimination of the Senate amendment so objectionable to the President, and this report was agreed to by both houses, the House acting on August 3d and the Senate on August 8th, the senatorial opponents of the bill contributing an additional five days of delay. The measure became law by the President's signature on August 10th, and immediately Mr. Wilson announced the formal appointment of Mr. Hoover to be Food Administrator.

The law prohibits profiteering; makes wastefulness of food a public offense; authorizes the President to license the importation, manufacture, storage, mining or distribution of necessaries; prohibits hoarding; authorizes Government requisition of packing and other plants for the production of necessaries; fixes a minimum price of $2 per bushel for the wheat crop of 1918; prohibits the use of foods, feeds or fruits for the production of intoxicating liquors for beverage purposes and authorizes the President to comandeer liquors in bond or stock for redistillation for Government use if needed for munitions or other purposes. This prohibition of the use of foods, fruits, or feeds for manufacture of beverages has usually been described as a "prohibition" measure. But it will not operate to prevent the manufacture of alchoholic beverages from other materials, and in the opinion of the Bureau of Chemistry of the Department of Agriculture, large supplies of potable alcohol can be produced from materials which cannot be classed as foods, fruits or feeds.

Along with the food control bill, the prior bill known as the "Food Survey" was agreed upon by the conferees and signed by the President. So that the Administration food control legislation has at length been secured. Mr. Hoover has already displayed much activity as Food Administrator. He has announced the organization of a committee headed by President Garfield, of Williams College, and including a number of representative farmers and commercial experts to fix prices for wheat for the 1917 crop, with the intent of Government purchase of the

entire crop if necessary or advisable. He has also organized a Government wheat corporation to handle the wheat business of the Food Administration.

With the Government Food Administration under full headway on an announced policy of reducing the cost of Food to the people of the United States, while at the same time conserving the supply and insuring a surplus for shipment to our Allies in Europe, there has been a reorganization and consolidation of some of the purchasing agencies in a new War Industries Board, auxiliary to the Council of National Defense. This board is headed by Frank A. Scott, of Cleveland, who was chairman of the General Munitions Board, which is absorbed in the new organization. A Central Purchasing Commission has been formed, composed of three members of the War Industries Board and Mr. Hoover. This Commission has announced its intention to protect the general public from extortionate prices, and to work with the Federal Trade Commission and the White House to that end.

Inspired, perhaps, by the fight over the so-called prohibition provision in the Food Control Bill, the Senate on August 1st, adopted a resolution proposing an amendment to the Federal Constitution carrying a genuine prohibition of the manufacture, sale, importation or exportation of intoxicating liquors. This amendment must be ratified by the States within six years in order to become effective. House leaders announced that the resolution would not be acted upon in that body until the regular session next winter.

A number of minor measures of war preparation and of economic importance in domestic affairs passed through the final legislation stages within the month, including the measures increasing the Interstate Commerce Commission and providing for priority in transportation for certain classes of commodities essential to national defense. Other measures advanced toward final enactment, and new projects of legislation include bills providing compensation, insurance, and indemnity for officers and enlisted men of the army and navy for injuries received in line of duty during the war.

The pending measure of chief importance is the so-called "War Revenue" bill, intended to raise about two billion dollars

a year toward war expenses by taxation. This bill was passed by the House weeks ago and has been pending in the Senate Committee on Finance, undergoing a very thorough revision while the Food Control Bill occupied the floor. The Senate Committee was ready to report the bill in the latter part of July when Secretary McAdoo, of the Treasury, startled the Senators by announcing that the Government would need five billions more money than had been authorized. Thereupon the committee withheld the report and prepared to alter the bill so as to raise some hundreds of millions more than had been estimated. On July 27th Senator Smoot made a speech in the Senate in which he estimated the Government war expendi ures for the first year, including loans to the Allies, at seventeen billions.

That same day Mr. McAdoo estimated that the Government requirements for the first year would be $10,735,807,000 which included $2,500,000,000 for fortification and artillery for the army in France. Loans to the Allies would require several billions in addition to the three billions now authorized most of which has been furnished them.

On August 10th Mr. McAdoo raised his estimate of additional funds needed to six billions instead of the five he asked for a few days before. He intimated that the Government contemplated raising 500,000 more men than had been planned at first.

Four days later, on August 14th, Mr. McAdoo submitted a still further estimate in which he again raised the amount needed—this time making it nine billions, which he said should be authorized at the current session and during the regular session next winter. This is to cover the expenditures and loans to the Allies for the first fiscal year of the war.

The War Revenue Bill was reported to the Senate from the Committee on August 6th, and was estimated to provide $2,006,970,000 a year. The committee estimates were that $777,000,000 would come from the income tax; $562,000,000 from the tax on excess profits; and $207,000,000 from taxes on liquors. Senator Simmons, chairman of the Finance Committee, described the bill as a "flexible scientific war tax." Chairman Kitchin, of the House Committee on Ways and

Means, who hails from the same State as Senator Simmons, denounced the Senate revision of his bill as drawn in the interest of corporations and inimical to small dealers and business men. The bill was made the unfinished business in the Senate on August 8th, and the hope of its managers is that it will be passed early in September.

Administrative preparation for the month included a settlement of the quarrel between Chairman Denman of the Shipping Board and General Goethals, which had delayed action on ship construction and disgusted the nation. General Goethals, after consultation with the President, wrote Mr. Wilson on July 21st, offering to resign. On July 24th the President accepted the resignation, and wrote Mr. Denman, calling for his resignation also. Simultaneously he appointed Edward N. Hurley, a Chicago business man and manufacturer, who had been chairman of the Federal Trade Commission, to succeed Denman, and named Admiral W. L. Capps, of the Navy, to succeed General Goethals. Also he accepted the resignation of J. B. White as member of the Shipping Board and named Bainbridge Colby, a New York Lawyer, in his place. Since then the Shipping Board has been a marvel of harmony and activity, and there is every prospect that ship construction will be pushed most energetically. When Mr. Hurley, the new chairman, was asked for an interview, he replied that his business was to build ships, not to talk about them.

Another measure of Administrative preparation, or rather of active economic warfare, has been the work of the Exports Control, provided by a part of the Espionage bill. The Administartion has favored a rigid policy toward neutral countries from which supplies of food or war materials had been going to Germany. This policy has occasioned distress and evoked protest and appeal, without effect. Commissions from different countries, from practically all, in fact, of those affected, have come to Washington and are urging relaxation in their relief. Meantime some seventy Dutch ships, loaded with grain, are held up in American waters for lack of licenses permitting the shipment of the cargoes. The longer this policy continues the more evidences of internal distress come from Germany, and the more frequent become the German feelers about peace.

The close of the month was marked by the return of the Root commission from Russia, with a message of cheer and confidence in the renewal of national vigor and fighting will in that country. At the same time Mr. Root and his colleagues issued a serious warning against the sedition and even treason that stalks but half concealed about American streets and cities.

Simultaneously with the return of the Root commission, there arrived the Japanese commission headed by Viscount Ishii, which comes, according to his announcement, to discuss war measures in the fullest harmony with us and from the point of view of Allied advantage.

As this review month closes, comes the announcement of the formal appeal of Pope Benedict to the world for peace, an appeal accompanied by a statement of the terms upon which His Holiness conceives peace negotiations to be possible. But his terms had hardly been made public when they were denounced in the Entente countries and in the United States as but very thinly disguised from those previously put out by approved German sources. At this writing, no official response has been made to the advances of His Holiness either by our Government or the Allies.

VI.

(August 18th—September 18th.)

Because "we cannot take the word of the present rulers of Germany as a guarantee of anything that is to endure," the Government of the United States, speaking through President Wilson, signalized the sixth month of American participation in the war against Germany by refusing to accept the proposition put forth by Pope Benedict as a basis for the discussion of possible terms of peace. Mr. Wilson's reply to His Holiness was the most important, as it was the most interesting, event of the month.

Pope Benedict's proposal contained two propositions both of which President Wilson has now rejeted, and in such manner

as to render it practically impossible ever to revive either of them. His Holiness suggested a consideration of peace terms largely upon the basis of the status quo ante-bellum, and with the present German Government. In a prior public statement President Wilson had destroyed the possibility of peace on the status quo ante basis by pointing to the fact that "it was out of the statu quo ante that the present iniquitous struggle issued forth." He refused to contemplate the possibility of renewing a situation which involved such a dreadful potentiality. In this reply to the Pope the President goes much further and refuses to enter into negotiations with the present rulers of Germany on the frankly stated ground that they are not to be trusted, not worthy of belief or confidence, not responsbile or reliable.

This statement of governmental determination and purpose, with its overwhelming exposition of underlying reason, was received with instant approval by patriotic Americans, and served to render more difficult the continued opposition of the narrowing forces of disloyalty, sedition and pacifism which are operating throughout the country, from Congress down. It was hailed with satisfaction in the countries of our Allies, and accepted generally and officially as their response to the Pope.

As was to be expected such a declaration of the bankruptcy of German national honor and good faith produced a furious outbreak of anger in Germany and among Germanophiles in this and other countries. Just when the chorus of vituperation and denunciation of Mr. Wilson was at its height, Secretary Lansing made public a contribution to the case against German honor which was the text of three telegrams sent by Count Luxburg, the German Minister at Buenos Aires, in code to the Berlin Government. Direct German communication being impossible owing to British control of cables, the German diplomat at the Argentine capital had recourse to the friendly assistance of the Swedish Minister, Baron Lowen, who accepted the German cipher messages and transmitted them as his own to the Swedish foreign office at Stockholm, whence they were forwarded to Berlin.

It was not the mere transmission of telegrams for the German Legation that constituted an offense against neu-

trality. Our Government did that for Bernstorff, until it sent him home. It was the character of the messages themselves that was a crime against humanity, but the kind of crime, unfortunately, that seems only too common among Germans of the ruling class. Count Luxburg coolly informed his Government of the sailing of certain Argentine vessels for European Ports, and of the time at which they were likely to be approaching the European coasts, and brutally recommended that they be sunk so as not to leave a trace of what had happened to them—*spurlos versenkt*. That is, the ships were to be destroyed and the crews and passengers murdered in cold blood.

Count Luxburg used the diplomatic courtesy and freedom of restraint which he enjoyed in Buenos Aires to carry on secret plots for the destruction of the lives and property of Argentine citizens. Incidentally he referred in one of his despatches to the Argentine Foreign Minister as a "notorious ass."

The reception of these disclosures by German officials in Berlin and elsewhere, and by Germans and Germanophiles in this and other countries, is an absolute demonstration of the unerring accuracy of President Wilson's characterization of the German rulers as bankrupt of honor and good faith. There was first denunciation of the American Government for "stealing the German despatches." Then there was furious denunciation of Count Luxburg, not for being guilty of the hideous brutality of his messages, but for being caught and exposed. Not a German voice of prominence or importance has been raised in condemnation of the savage proposals of the German diplomat. The German Government was exculpated by some of its officials on the ground that it was not responsible for the opinions of its agents, and that Luxburg's despatches were only the recommendations of one man. But the German Government is responsible for retaining him in his post after receipt of his uncivilized recommendations, and for failure instantly to disavow his barbarism and recall him from his post. However, the German Government is not repudiating barbarism.

The Argentine Government has dismissed Luxburg and is asking Berlin for an explanation. There is a new crisis in relations between Argentine and Germany. Sweden is making promises of reform, and is asking Berlin for explanation and

disavowal. Sweden disclaims responsibility upon the ground of ignorance of the contents of the Luxburg despatches. The United States Government permitted the sending of German despatches in code by wireless prior to the break of diplomatic relations with Berlin, but it took good care to know the contents of each despatch, and to prevent messages that would violate neutrality.

America's sixth month in the war has been like the others, a month rather of preparation for participation than of actual sharing in real fighting. The daily news reports have been well sprinkled with despatches from London, Paris, and Rome, telling of activity on the part of Americans already abroad, and of the vigorous training of the forces with General Pershing, in France, in anticipation of the day when they shall undergo the fierce test of meeting the German face to face in the field.

Organization of the armies destined to give the actual demonstration to Germany of American physical power, has proceeded regularly and with not more delay, disappointment or failure than was to have been expected from the long refusal of the United States to take thought of her military responsibilities by making preparation or taking training in advance. National Guard regiments from all parts of the country have been assembling in divisions, and undergoing the process of radical transformation from their old organization units into units of the national fighting forces. Delay in completing construction work at different camps has held back the full employment of the Guard in this work, but the promise is that this delay shall be ended in very short order. Similar failure to complete construction work on some of the cantonments assigned to receive contingents of the "selected" men for the new National Army rendered it necessary to hold back the calling of men to the colors in some proportion. Moreover it has now been fully demonstrated to the country that adequate supplies of clothing, uniforms, weapons, munitions and other essential supplies are no more likely to be forthcoming over night than are a million men to "spring to arms" in that period.

The first contingents of the so-called "drafted men" were called to the colors on September 5. In many cities these contingents organized parades, and gave proof of their loyalty and

enthusiasm for the great cause which they serve. President Wilson personally marched at the head of the Washington parade, and distinguished members of his Cabinet, and leaders of the Senate and House of Representatives, trudged down Pennsylvania Avenue from the Peace Monument to the White House with him. Veterans from both sides of the Civil War marched side by side at the head of the column of the new draft

The graduates of the various training camps of the Officers' Reserve Corps had received their commissions just in time to get into active work at the new cantonments receiving the contingents of drafted men and beginning their organization and training. The end of the first week of September found nearly 1,100,000 men under arms in the various American forces.

Meantime procurement of further supplies of the various kinds needed for the proper equipment and maintenance of these men went forward, and was accompanied by further organization of the supply corps, and of the means for procuring supplies.

Less publicity has been given to activities of the Navy Department than to those of the War Department, but that does not prove that the Navy has been less active than the Amry. The announcement is made that Admiral Mayo has been in London for some time, purpose not announced, but obviously connected with nayal strategy and employment. The event is seized upon by those favoring an aggressive policy as evidence that the United States is for an attack on the Germans in their various lairs—Heligoland, the Kiel Canal and Zeebrugge.

Secretary Daniels has given more emphasis to his belief that the rapid construction of torpedo boat destroyers is the most effective method of combating the submarine, and the House is soon to take up a bill appropriating an additional quarter of a billion dollars or more for such new vessels. It is announced from the Navy Department that in order to obtain the earliest and most rapid delivery of the new destroyers it will be necessary for the Government to finance concerns willing to enlarge their plants for this work, all the present destroyer building facilities being fully occupied.

While the Navy is thus busy the Army is working on aeroplane construction, and it is announced from Washington, with much satisfaction, that a special aeroplane motor, already designated the "Liberty Motor," has been designed for the equipment of the enormous American aircraft fleet for which Congress appropriated six hundred and forty million dollars a few months ago. But it is reported among those who have been consulted by the Aircraft Production Board about building some of the motors or other aeroplane machinery that not a single contract of any importance has been signed as yet.

Similar delays is reported in getting to work on the plan of the Shipping Board for Standardized construction. Many contracts have been let for ships of one kind and another, some wood and some steel. Commitments for vast sums have been undertaken. But in all the talk of new ship construction emphasis has been laid upon the point that it was the fabrication of standardized ships that was to be the chief factor in solving the submarine problem. It was not until early in September that contracts were let for the first Government fabricating plants.

This month has been one, also, of marked recognition of the essentially economic character of the struggle in which we are engaged. Economic organization has proceeded broadly along two main lines, one for the control of our resources at home, and the insurance of proper supply at proper prices to our own people; and the other for the control of the shipment of our resources away from the country, and the insurance that nothing we raise or manufacture shall be used to furnish any aid or comfort to the enemy. The power to make the first of these purposes effective and energetic comes from the Food Control laws. That for the second comes from the export control sections of the Espionage law. The Food Administration is proceeding vigorously in the effort to make the good promise of Mr. Hoover, the Food Administrator to bring down the price of bread. Difficulty is encountered because a price of only $2.20 per bushel was fixed for the wheat crop of this year. Farmers believe that without control the price would have been higher, and are slow in bringing their wheat to market. The immediate danger is that instead of the price of bread being

lowered there will develop a scarcity of flour and consequently of bread.

On August 20th, President Wilson announced the appointment of Judge R. S. Lovett, head of the Union Pacific Railway, as Federal Agent under the Priority Law, which gives the Government power to determine priority of shipments over railroads. Judge Lovett signalized his appointment by directing forty-six railroads to give preference to shipments of coal to the lakes for the Northwest. The purpose was to prevent the kind of suffering for lack of coal in that territory this coming winter that was endured last winter. The railroads seem to have done their part, but there was no control of the coal after it reached the lakes, and instead of being shipped to the Northwest a good share of it was sent to Canada. Also the Middle West declared it was not getting sufficient fuel to keep its factories running. Then the Exports Administrative Board required licenses for shipments of coal to Canada, so that that leak seems to be stopped.

On August 21st the President announced a schedule of prices which he had fixed on bitumous coal, at the mine. It averaged about a dollar a ton less than the $3 price agreed upon two months ago by Secretary Lane and the leading coal producers of the country in a conference at Washington. That price was repudiated promptly by Mr. Baker, Secretary of War. The President's prices seem more satisfactory to Mr. Baker, but not to the producers, many of whom have been protesting that they are below cost of mining, and will certainly curtail production if the Government insists on them.

Two days later, on August 23d, the President announced prices on anthracite ranging from $4 to $5 a ton at the mine, and named Dr. Harry A. Garfield, President of Williams College, as Fuel Administrator, under the power granted by the Food Control Law. Anthracite dealers, especially retailers, have not conformed to the President's schedule and the cry of coal shortage begins to come up from various parts of the country.

The wheat control power of the Food Administration became effective on September 10th. Mr. Hoover is putting a system of licensing mills and other handlers of grain into effect,

and announces that he expects a reduction of $3 a barrel on flour, which should save the people of the country thirty millions a month.

In a public statement at Washington Mr. Hoover said he saw no hope for reducing the price of meat and pointed out that the supply is too small for the normal demand. Nevertheless it is reported from Washington that he is planning to put the meat under license. This is under consideration as a means of eliminating speculation.

The Food Administration also expects to license the sugar industry, and has issued fervent appeals to the people to save sugar. Meantime the Department of Agriculture is conducting the national survey of food which was authorized under the first of the food control laws.

While these measures of domestic control are being taken the President has extended the power of the Exports Administrative Board, and that body has made it clear that it does not propose to permit anything to go out of an American port which might be of the least service to Germany. For instance a large number of Dutch ships, loaded with grain and fodder, have been laying in American ports for weeks seeking permission to sail. Their grain cargoes, at least, are owned by the Dutch Government. Recently agreement was reached by the Dutch negotiators with the Food Administration for the release of about thirty of these ships, on condition that two-thirds of their grain should go to the relief of Belgium. But the Exports Board held up the permits because of the fodder, and ships are still in American waters. No adequate assurance was forthcoming from the Dutch that that fodder would not find its way to Germany, or that the produce of the Dutch cattle it might feed would not get into Germany.

It has been made clear that there shall be no American food for neutrals in Europe or elsewhere who help supply food or other needed articles to Germany. Also the President has put shipments of gold and silver under control of the Exports Board, which means that they cannot go without license. And in most cases they will not get the license. Spain has been taking millions of gold from the United States although she has a heavy adverse trade balance with us. It costs ten per cent.

to ship gold to Spain from New York now, five per cent. for freight and as much for insurance. But Spain has taken more than fifty millions recently, and it is suspected in Washington that some submarine method has been found for getting part at least of this gold to Germany.

Secretary McAdoo has asked Congress to give the Government control also of imports, and the intimation is made that the Government is planning to prevent shipments of supplies to Germany from South America.

Price fixing and exports control have their corollary in a new purchasing agency established in Washington to do the purchasing of supplies for the United States, Great Britian, Russia and France, with Italy expected to come in very soon, and possibly others of our Allies.

Labor troubles, strikes and walk-outs have made their inevitable appearance, as they always do in periods of prosperity and high wages. Much effort has been made toward reaching adjustment of such differences and toward finding a means of avoidance and settlement in future during the war. As far as shipping is concerned an agreement which it is hoped means settlement was reached under which an "Adjustment Commission" was appointed by the President, consisting of Mr. V. Everit Macy, President of the National Civic Federation, as Chairman, with representatives of the American Federation of Labor and of the United States Shipping Board. A representative either of the War Department or of the Navy Department will sit with the commission when it considers matters affecting either of those departments. Workmen at the League Island Navy Yards sent a delegation to Washington to pledge their loyalty and assure the Government against strikes on national war work.

The Senate spent most of the month on the War Revenue bill, which it had given many weeks to rewriting after receiving it from the House. A hard fight was made by about twenty Senators, of the so-called "radical" element, to increase the rates of taxation on personal incomes and on war profits. The cry was to "conscript wealth" as men had been conscripted. Scores of varying amendments were submitted and all defeated. But the Finance Committee yielded in part to the demand for

greater taxation of wealth and itself proposed an amendment to its own bill, raising by some hundreds of millions the amount estimated to be raised from war profits. The bill was passed by the Senate on September 10th, by a vote of sixty-nine to four. It is estimated to yield $2,406,670,000, chiefly produced by incomes ($842,200,000), war profits ($1,060,000,000), and distilled spirits ($218,000,000), this last estimate being a public admission that the so-called "prohibition" feature of the Food Control bill was a fake as a prohibition measure. All consumption taxes were stricken out by the Senate, but a few special taxes were provided, estimated to raise $141,750,000. The bill is now in conference.

The Senate also passed the Enemy Trading bill, previously passed by the House, with an amendment requiring German language newspapers in this country to print translations of political and editorial articles in parallel columns. At the same time the Senate passed a resolution permitting the drafting of subjects of our Allies for our military service. It is estimated that this places more than a million and a quarter of additional men at the disposition of the Government. There are 87,000 enemy aliens of military age in the country.

The House occupied itself with a bill providing a system of insurance for officers and men of the American service for the benefit of their families, at low cost. President Wilson expressed himself as warmly in favor of this bill. As originally brought up in the House it set a limit of $5,000 on policies. The President said he wished it were twice as much, and it was made so. Criticism of the provisions of the bill has come from some of the prominent insurance men of the country, but not of the principle. One of the purposes of the measure is to provide a system that shall do away with the present pension system, as applicable to this war, or greatly reduce its operation. This bill was passed unanimously on September 13th.

The House also passed unanimously a bill authorizing the issue of more than eleven and a half billions of four per cent. United States bonds. The expansion of debt is really not as great by this bill as it seems, for more than half a billion of the new bonds will take the place of those authorized for different purposes not necessarily connected with the war, such as the

Mexican border service of last year, and others. Also three billions cover merely the authorization to raise the interest of that amount of bonds authorized last April from 3½ per cent. to four per cent., and four billions are for loans to our allies.

The House has also passed another huge appropriation bill, carrying more than seven billions of dollars and the Army, Navy and Shipping Board are not through asking for more. The Shipping Board wants another billion. The Navy wants hundreds of millions. There is talk of more hundreds of millions for aeroplanes, with not even a contractual start made yet on expending the first six hundred and forty millions.

Representative Fitzgerald, chairman of the House Committee on Appropriations, in a statement in the House on September 14th, placed our expenditures for the first year of the war at eighteen billion dollars, as compared with a total of $21,000,000,000 by Great Britian for the three years of the war, fifteen billions by France, a similar amount by Russia, and only three billions by Italy. Our Loans to Allies aggregated close on to the three billions at first authorized, as this was written. Mr. Fitzgerald's speech adds emphasis to the mass of other evidence as to the value of pre-war preparation. A huge percentage of our present cost is due to the failure to make the preparation in time and the extra expense of making it now under adverse and costly conditions.

This work by the Executive and Legislative branches of the Government has been more or less public and spectacular, but the work of the Judicial branch has been no less effective. In a single nation-wide raid on the offices of the I. W. W. an effective check was put upon the seditious work of that disloyal organization, and evidence of value in other ways was accumulated. A raid on a German newspaper in Philadelphia produced similar results. The curbing of sedition and disloyalty, whether in newspapers, alleged labor organizations, or among soap-box orators on street corners, is progressing, and thus, belatedly but energetically, the United States is getting ready to show some real participation in the war.

VII.

(September 17th—October 17th.)

At three o'clock on the afternoon of Saturday, October 6th, the first session of the Sixty-fifth Congress adjourned without day. It was just six months, to a day, from that April afternoon when Pres dent Wilson attached his signature in approval to Public Resolution No. 1, the first act of this Congress, which declared war against the Imperial German Government. No other session of the American Congress ever transacted so much business, or business of so great importance to the nation and the world, as this. In those six months more provision for military resources of the country, was made than in all the previous history of the nation, whether the standard of comparison be the character of the legislation enacted or the amount of money appropriated and of expenditure authorized.

This session, for the first t me in the military history of the United States, applied the principle of universal military service at the opening of a war, and enacted the so-called "selective draft" law under which the first units of the new National Army are now organizing and receiving their first training.

It established beyond a question the paramountcy of the nation in the dual system by extensive exercise of the power to control or take over enterprise and industry, including land and water transportation; fix prices, even of agricultural production; direct operations; assign priority of production and transportation, and otherwise generally perform the normal functions of owner and master.

It provided for financing these new operations of government on a scale and with a liberality previously unheard of, assuming freely the enormous burden of furnishing the chief financial support to our Allies while at the same time preparing and maintaining, on our own part, fighting forces, land and naval of colossal proportions.

It provided for the equipment of these land and naval forces with all fighting material of the most effecrive design and in unlimited quantities, including an air fleet calculated

by itself to outnumber the combined establishments of our enemies, as well as now naval construction that will make the United States Navy "incomparably the strongest afloat" to use the language of the Secretary of the Navy.

It took a long step toward the practical solution of the much debated question of the rehabilitation of the American Merchant Marine by authorizing the expenditure of nearly two billion dollars for the construction, charter or requisitioning of vessels by the United States for the merchant service.

Much public criticism attended the labors of the session, evoked chiefly by delayed action on measures strong in popular support as necessary to the successful prosecution of the war. Yet these delays were almost all caused by a small group of men in the Senate, whose activities in opposition to the war finally culminated in a wide-spread and growing demand for their expulsion from the Senate or other punishment, as teachers of sedition and disloyalty.

President Wilson, who had made clear, long ago, his own opinion of the obstructive tactics of this group, sent a final message to Congress strongly praising the work it had done, and expressing the view that it had been done thoroughly and "with the utmost dispatch possible in the circumstances or consistent with a full consideration of the exceedingly critical matters dealt with."

War measures that occupied the attention of Congress during the last month included the second Urgent Deficiency appropriation, carrying approximately eight billions for war purposes of one kind or another; the War Revenue bill, designed to raise about two and a half billions a year by taxation; the Enemy Trading Act; an act providing for insurance and compensation for injury or other disability, for soldiers and others in the military service, and a number of acts of lesser importance. This latter category includes an act placing control of the sale, distribution and storage of explosives under the Bureau of Mines; an act permitting National banks to issue notes of $1 and $2 denominations; an act giving the Shipping Board power to suspend the navigation laws and permit foreign vessels to enter the coastwise trade, except to Alaska, during the war, and an act covering the repatriation of Americans

who have joined foreign armies to fight against Germany. There was also an act restoring the grade of General in the army, last held by General Sheridan. Under its authority the President has already promoted General Pershing, in command of the American forces in France, and General Bliss, the new Chief of Staff.

This session made what members of the Administration and all other Americans hope will be a record for all time in the expenditure of money. The total appropriations—almost wholly for war— for this fiscal year was $16,901,986,814. Besides this it authorized contract obligations calling for $2,511,553,925 more. The regular session of the last Congress, last winter, had provided appropriations for this fiscal year before we entered the war, aggregating $1,997,210,200, which included $517,000,000 for the navy and $273,000,000 for the army. Thus the total of appropriations and contract authorizations for the fiscal year 1918, by the two sessions of Congress, is $21,390,730,940, to which the minutely accurate statisticians of the Treasury and Congress add the important detail of forty-six cents.

This inconceivable sum includes $7,000,000,000 for loans to our Allies. The first deficiency bill of the session carried authorization for three billions for our Allies, and that limit has nearly been reached. The loan authorization in the second bill was four billions. Loans are made to the Allies at a rate averaging pretty close to twenty million dollars a day. Exclusive of these loans our total of appropriations and contract authorizations for this fiscal year is $14,390,730,940, which ought to be somewhere in the neighborhood of our total war bill for the first year. But there are still eight and a half months of the fiscal year to run, and during seven of them, Congress will be in session again, ready to respond, as it has done heretofore, to every call for war money from any department of the Government.

Congress did not spend much time over appropriations, but it gave months to consideration of the revenue bill, and in the end put forth to measure that has aroused wide-spread and bitter criticism because of some of the provisions of the war profits and income tax sections, and of the special favor

shown to Congressmen themselves. The tax bill passed the House on May 23d, but did not come to a vote in the Senate until September 10th. The conferrees wrangled over its provisions for nearly three weeks, and rewrote several sections entirely. The tax on incomes and on excess profits furnished the chief points of controversy, as had been the case in the Senate. Also the postage rates on second class mail matter, including magazines and newspapers, caused great argument. It was not until October 2d, that the Senate agreed to the conference report, and the next day the President signed the bill. Then it was discovered that the conferrees had written in a special excess profits tax of eight per cent. on the salaries or incomes of professional and salaried men in excess of $6,000 but had been careful to provide that it should not apply to members of Congress. Some Congressmen have attempted to justify it on the ground that it is a sort of war excess profits tax and that such taxes should apply to professional and salaried men and to farmers as well as to manufacturers and business men.

The Enemy Trading Act which passed the House on July 11th, and the Senate on September 12th, came from conference on September 21st, was agreed to quickly by both houses and was signed by the President on October 6th. This law forbids the trading with or transportation of an enemy or ally of an enemy, or the transmission of communications to or for such person. Certain permissions may be made under license. Section eleven confers upon the President the same power over imports into the country that Title 7 of the Espionage Act gives him over exports. This act also forbids the publication of war comment in foreign language newspapers except under conditions tantamount to license by the Postmaster-General. It is probably the most drastic legislation enacted in the United States since the Embargo Act under President Jefferson. Under it the Government is empowered to assume a minutely detailed control of American trade, especially overseas.

On October 4th, the House passed a bill to protect persons in the military service in their civil rights while away from home on duty. It contains a section forbidding the eviction of the family of a soldier for non-payment of rent during the war,

where the monthly rental is less than $50. This bill was not acted upon by the Senate, but will come up at the next session.

Just before Congress adjourned there was passed a resolution providing for a test by a board of five scientists of an invention by a Boston Armenian. It is a device for developing energy, for which the inventor makes marvelous claims, such as, for instance, that it will drive a ship across the Atlantic without fuel; that it will propel aeroplanes and do other similar work. If the five scientists certify that it will do what is claimed for it, Congress will buy it for the Government. Its sponsors declare that it will end the war alone—if it works.

President Wilson's reply to the peace proposals of the Pope was the outstanding feature of the sixth month of America's participation in the war. Mr. Wilson rejected Pope Benedict's offer because, he said, "we cannot trust the German Government." The Germans accept the Pope's proposition because "with deep rooted conviction we agree to the leading idea of Your Holiness that the future arrangement of the world must be based upon the elimination of armed forces, and on the rule of international justice and legality. We, too, are strongly imbued with the hope that a strenghtening of the sense of right would morally regenerate humanity." A statement like that from the German Government at a time like this illumines, as would the beam of a giant searchlight, the President's declaration that we cannot trust what Germans say.

Mr. Wilson gave renewed assurance of his determination to fight the war through to complete victory on October 8th, when he received at the White House a delegation from the newly organized League for National Unity, and told them that the war should end only when Germany is beaten, and the rule of autocracy and might is superseded by the ideals of democracy.

About the middle of September the fact was permitted to become known that the President had selected his friend and personal adviser, Colonel House, to organize and supervise the collection of material which will be needed for the effective equipment of the peace commissioners of the United States, when the time comes for their appointment. Other belligerents have been busy for months gathering the economic and other data which their commissioners will need when they come to

meet at the conference table, and it is important that the American commissioners shall have the fullest information available, not only upon the points to be covered by their own instructions, but also upon any points that may be brought up by other commissioners, allied or enemy.

Progress in organization and equipment of the fighting forces for actual participation on the battle fronts reached the point in this seventh month of our war where it began to be more easily realizable generally that we are really about to contribute in substantial fashion to the military overthrow of Germany. More and more men called under the selective draft were assembled in their training camps. Cantonments and camps for the National Guard units were brought nearer to completion. The reorganization of the Guard regiments upon the new army plan was begun. Equipment of all kinds for the men was ready in increasing supplies. On October 10th, more than 461,000 men were in the various camps for training, and over 13,000,000 articles o' equipment of one kind and another had been provided.

The Navy, which by its patrol and convoy work has been doing effective actvie service from the start of our war, has been increasing its participation abroad, while at home it has been increasing its capacity to participate. On October 9th, Mr. Daniels announced that contracts had been let to five concerns for destroyers to cost $350,000,000, all to be of the largest, newest and most efficient type. At the same time the Secretary announced that the Navy is building 787 vessels of all classes and- types, from superdreadnaughts to submarine chasers. The total cost of the building programme is $1.150,-400,000. Admiral Mayo returned from his conferences with allied naval men abroad, but no announcement was made as to what he had accomplished.

A report from the Shipping Board on September 26th, showed that the Emergency Fleet Corporation then had under contract 353 wooden vessels, of a total deadweight tonnage of 1,253,900; fifty-eight composite ships aggregating 207,000 tons, and 225 steel ships aggregating 1,663,800 tons. It had requisitioned ships then building for private owners in different American yards numbering 403 and aggregating more than

2,800,000 tons. This was a total of 1,039 vessels aggregating 5,924,700 deadweight tons.

In addition there were 458 American ships then in service, with aggregate tonnage of 2,871,359 and 117 German and Austrian vessels seized or obtained under charter or by purchase, aggregating 700,285 tons. When the building program thus reported is completed the American fleet would have 1,614 vessels of tonnage aggregating 9,496,344, less submarine and other losses meantime. The appropriation bill then pending, however, contained authorization for a further construction programme of about 5,000,000 deadweight tons, so that the United States has a merchant fleet of upwards of fourteen million tons in sight. When the war began in 1914, our ocean going merchant tonnage was 1,614,000. The Shipping Board estimate of available British tonnage at the end of September was 14,500,000 British announcement of submarine losses for the second week in October was the smallest since the ruthless campaign opened in February 1. It was accompanied by the extremely significant announcement that British new construction for the week exceeded the losses. Taken together, these facts show that the time is very close at hand, f not already here, when the definite defeat of the submarine can be announced.

On October 15th, the Shipping Board requisitioned all American vessels in service, directing that they be continued in service by their owners or charterers for Government account, and at rates fixed or to be fixed by the Government, with an allowance of ten per cent. commission for owners' services. Freight rates were sharply cut by this move, and it was expected that relief would be afforded to the South American trade which had suffered greatly from excessively high freights from American ports.

Governmental price fixing for the month had to do chiefly with coal and steel. Dr. Garfield, the Fuel Administrator, issued several reassuring announcements that there was no cause for or prospect of fuel amine. Nevertheless, loud and frequent complaints came from coal producers and consumers both, one that prices fixed were below cost of production, and the other that despite the figures of larger production than in 1916

coal was not to be had in the localities of the complainants. On September 30th, Dr. Garfield issued new orders increasing prices in certain bituminous districts, and reducing some anthracite prices. He also fixed the retailers' margin at that of 1915 plus thirty per cent. for increased costs, or at that of July, 1917. No generally perceptible effect on retail prices followed.

Steel committees spent a good deal of time in Washington in consultation with the War Industries Board, and on October 10th, a new range of price agreements was announced with the approval of the President. It is anticipated that oil prices will come next.

The Exports Administrative Board did a good deal during the month to smooth out causes of friction in the exports control, many of which were of minor importance and due to misunderstanding or regulations. On October 2d, the Board announced a long list of articles and countries on which no liscense would be required. It was made increasingly evident that the chief purpose of the exports control is to prevent supplies of any kind reaching the enemy from this country or from any other if it can be helped. Great Britain is coöperating in this plan, and on October 2d, the British Government laid an embargo on all shipments for Norway, Sweden, Holland and Denmark, except printed matter and personal effects accompanied by their owners. Two days later the Exports Administrative Board stopped the furnishing of bunker coal to neutral ship bound to neutral ports bordering on Germany. If Northern Europe wants to trade with South American neutrals for supplies for Germany it must find bunkers elsewhere than in the United States.

On October 14th an executive order by the President was made public reorganizing the Exports Administrative Board as the War Trade Board, and charging it with the duty generally of administering the Enemy Trading Act and the new control of imports. This order also delegated certain other war powers of the President to different departments.

The month's activities included a number of interesting revelations by the State Department and other sources concerning German intrigue, spy work, subornation of treason, instigation of sabotage and such things. On September 21st, Secretary Lansing made public a telegram sent by Ambassador Bernstorff to the Berlin Government on January 22d, just before our break with Germany, asking authority to pay out "up to $50,000" in order "as on former occasions to influence Congress through the organization you know of, which can perhaps prevent war." Mr. Lansing's information proves that when von Bernstorff sent that message he knew, by receipt of the Zimmermann instruction about Mexico and Japan, that Germany intended to renew the U-boat campaign.

On October 3d, Mr. Lewis, the Attorney General of New York State, announced some of the results of an investigation which he made, at the request of the French Government, into the activities in New York last year of Bolo Pasha, of Paris, now under arrest there as a traitor and German agent. Mr. Lewis showed that Bernstorff had cabled his government for $1,700,000, which Berlin furnished, and which the ambassador paid to Bolo as a corruption fund with which Bolo was to procure French newspaper support for Germany, especially in the Paris *Journal*. Several code messages passed, apparently through the good offices of some friendly diplomatist. In these messages the sums actually desired were divided by one thousand for code purposes.

Coupled with these disclosures of German intrigue there has been a steady rounding up of enemy aliens and sedition spreaders, which has aroused wide-spread interest and indignation throughout the country. Several hundred enemy aliens were arrested in one raid in and about New York City, and fifty or more additional I. W. W. agitators gathered in.

As the review month closed, a special outburst of indignation was manifesting itself against Senator La Follette and some of his colleagues who were held responsbile for undue delay and obstruction of necessary war legislation in Congress. On September 20th, Senator La Follette delivered a speech at St. Paul, Minn., in which he inferentially defended the sinking of the *Lusitania*, opposed the war and said things which led to his being accused before the Senate by the Minnesota Public Safety Commission as a "teacher of sedition." The Minnesota Commission petitioned the Senate to expel him. Other simi-

lar petitions for action against La Follette, Stone, Gronna, Hardwick, and Reed, the chief obstructionists, poured in, until the Committee on Privileges and Elections took formal notice of the La Follette and Stone cases. It acquitted Stone, pointing out that although he opposed the declaration of war he has kept still ever since and voted for all the Administration war measures. But it is investigating the St. Paul speech and will report on that at the next session.

The incident shows that the business of spreading sedition in the United States is becoming unpopular. Under the Enemy Trading Act the Postmaster-General announces that he will not permit foreign language newspapers to wage campaings against conscription, or enlistments, the sale of bonds or collection of revenue, or anything tending to hamper the Government in its war work or improperly to attack our Allies.

Strikes and labor troubles marked the entire month, the chief demands coming from shipyard worker, coal miner and railroad men. Strenuous efforts by government mediators, and direct personal appeals by the President himself, were not sufficient to prevent considerable curtailment of production. The month closed with threats of a general railroad strike for wages.

In the latter part of September, Secretary McAdoo, of the Treasury, announced the flotation of the second installment of the Liberty Loan of 1917 beginning on October 1st. Bonds to the amount of $3,000,000,000 are offered for subscription, but it is understood that in case the loan is overscribed half the over subscription will be allotted, and the bond campaign is aimed at a subscription of at least five billions, which would mean an issue of four billions. The same kind of an intensive campaign is going on that marked the exceedingly successful flotation of the first loan, and the prospect is, as this is written, that it will be similarly successful.

VIII.

(October 17th—November 14th.)

IN the eighth month of our participation in the war against Germany, the first casualties in action occurred among American troops occupying position in the front line trenches in France. The first news that our men had been in a fight with Germans came from Berlin.

The next day Washington told what had happened. It appeared that for some time detachments of American troops, undergoing training for the real fighting which is to come, had been getting experience by brief turns in the front line trenches. One such detachment occupied a salient in the French line. A German raid was made on that salient, preceded by barrage fire which cut off the detachment of Americans from their supports. It is reported that our men fought with gallantry. Three were killed, five were wounded and eleven were captured. A cynical article in the *Lokal Anzueger* of Berlin welcomed these first Americans to Germany and announced the readiness of the Germans to receive many more.

The American navy had already begun to pay the inevitable price for its active share in hunting down the underwater hell-hounds. On October 16th the torpedoboat destroyer *Cassin* was torpedoed by a submarine while on patrol duty. Gunner's Mate Ingram was killed and five men were injured, but the vessel was not lost. Through the skill of her captain, Commander Vernon, she was brought to port safely.

The next day the Army transport *Antilles*, returning from France with 237 men aboard, passengers and crew, was torpedoed, very early in the morning, despite the vigilance of her convoy, and sunk. Sixty-eight men were lost with her, including some of the navy guard, some of the returning soldiers and some of the crew. Among those lost were two army sergeants, one corporal and nine privates, all with German names, and some of whom had parents or other relatives living in Germany. In the official announcement of the loss there was no comment from Washington as to why so large a proportion

of the soldiers returning from France should be men with German names.

On October 26th the Navy announced that its total of casualties from the commencement of its participation in the patrol work, shortly after the American declaration of war, down to date, was one officer and twenty-seven men killed and five made prisoners. Ten days later announcement was made that the patrol boat *Alcedo* had been torpedoed and sunk and that one officer and twenty men were missing.

Washington announces that more than a hundred thousand American soldiers are now in France. It required two hundred and fifty thousand tons of ships to transport them there and it requires the entire service of an immense fleet to maintain them. As our forces in France increase in numbers the demands upon our small supply of tonnage also increase. Despite all the difficult es the Shipping Board has found a way to respond to the calls for help from France and Italy. On October 19th it was announced that 250,000 tons of shipping would be allotted to France in return for which French sailing vessels would come into our coastwise service. A week later arrangements were made to let Italy have the use of twenty-five steel vessels aggregating about a hundred thousand tons. Meantime steady effort was made to speed up construction in American yards. Delays and hindrances were threatened, and in some cases actually caused, by strikes and other labor troubles. The month saw the full influence of the Government constantly exerted to the utmost to arrange such disagreements and prevent interference with work. On November 11th a reorganization in the Emergency Fleet Corporation, which is charged with the construction work, was announced. Admiral W. L. Capps, who succeeded General George W. Goethals as the General Manager of the Corporation had worked himself into ill health in the attempt to carry the tremendous burden alone. Mr. Charles A. Piez, a very successful business man, of Chicago, was selected vice-president of the Fleet Corporation and put in charge of the actual construction work. At the same time a production committee, composed of engineers, was created to assist in speeding up the enterprise and cutting out red tape.

While these efforts were making the Shipping Board was also in negotiation with representatives of the Japanese Government for assignment of a certain portion of the Japanese merchant fleet to the Atlantic trade to help out Japan's Allies in their great need for shipping. In the end an agreement was made whereby Japan is to get a certain amount of American steel which she greatly desires and is to make a readjustment of her shipping schedules that will contribute to the relief of her allies.

This shipping question with Japan was coupled pretty closely, apparently, with the chief matter concerning which the Ishii special mission came to the United Stated to negotiate. On November 6th, Mr. Lansing, Secretary of State, announced that an exchange of notes between himself and Viscount Ishii had been effected on November 2d, the effect of which was to define the attitude of the two Powers with respect to China. The United States by this exchange, recognizes the validity of the Japanese claim to a "special interest" in China, and joins with Japan in denying for itself any purpose of infringing Chinese integrity or sovereignty, while at the same time declaring again for the maintenance of the "Open Door" in China and the principle of the equal opportunity of all nations in the commerce of China. The two Governments will oppose the infringement of Chinese independence or sovereignty by others. A complete agreement for naval coöperation in the Pacific was also reached.

In the eighth month of American participation in the war against Germany the first real pinch of food shortage began to make itself felt among the American people—not in the sense of hardship through mounting prices, but in the actual shortage so that persons with money to pay any kind of price within reason were unable to buy because the dealers had none to sell. This condition manifested itself in the case of sugar and immediately the effect of the government control and price fixing was felt. At first some dealers who had sugar in stock when the shortage became apparent were inclined to let the law of supply and demand have free play and charge what the traffic would bear for their sugar. But very stern warnings

came from Washington to the effect that that sort of profiteering would not be tolerated.

Mr. Hoover announced that the licensing system would seek to limit prices to cost plus a reasonable advance; to keep food commodities moving; and to prevent speculation by limiting future contracts.

While the Food Administrator was busy with the first food shortage, Dr. Garfield, the Fuel Administrator, was being harassed on all sides by difficulties of every kind. Owners of coal mines protested that government prices were lower than costs of production. Miners demanded higher wages and threatened strikes to enforce their demands. In some places operators shut down their mines. In other places miners struck and forced a shut-down. Dr. Garfield issued repeated warnings, increasing in severity, to both men and operators, against strikes and lock-outs, and against sales at prices above those fixed by the President. State Fuel Administrators were instructed to seek evidence on which to base prosecutions of dealers selling above the schedule. In the effort to keep the mines working and production at a maximum John P. White, President of the United Mine Workers, the miners union, resigned and was appointed assistant to Dr. Garfield. Here and there stores of horded coal were uncovered, and orders were given preventing additional shipments to concerns which had large supplies in reserve. The total production for this year is greater than for the corresponding period of last year, but is still not up to the maximum possible.

The labor difficulties which marked the shipping and coal situation were manifest also in other industrial lines, and, under the inspiration of the I. W. W. organization, were especially active in western farming districts. The activities of the I. W. W. led to riotous performances in different States.

Governmental efforts to prevent labor disturbances from interfering with essential production culminated in a trip by President Wilson from Washington to Buffalo, where he addressed the annual convention of the American Federation of Labor. He expressed contempt for the pacifists who are seeking to bring about an immediate peace and told the workers that they must sink all differences and give full aid.

This eighth month of our participation in the war was marked by a great American success in the second Liberty Loan. The subscriptions closed on October 27th, but the full amount was not known until November 7th, they came so rapidly and from so many sources at the close of the drive. The mark that had been set for the campaign was an issue of $3,000,000,000, but it had been announced that bonds to the extent of one-half of any over-subscription would be allotted, and it was hoped that the over-subscription might reach to $2,000,000,000, making the total of subscriptions $5,000,000,000.

The second Liberty Loan campain was well organized and the drive reached its climax right at the last. It produced a total of more than 9,400,000 subscribers, who bid for the inconceivable sum of $4,617,532,300 of the new four per cent. bonds that are not exempt from taxation, except in amounts under $5,000. As half of the subscriptions above three billions will be allotted, this means a total issue of the second loan of $3,808,766,150. At a favorable rate of exchange, under present circumstances, that would be almost 23,000,000,000 German marks, or twice the total subscriptions to the most successful loan issued by the German Government.

Preparation of the national army to take its share in the actual fighting proceeded steadily throughout the month. It involved not only the training of new officers in their various schools, and of the men in their camps, but the careful preparation for further calls under the selective draft registration. Provost Marshal General Crowder has worked out a graded system for selecting the men of the new contingents. He sent a questionnaire to all the 9,000 000 men on the registration lists calculated to develop full information concerning their situation, so that they may be properly classified. The local board, upon examination of the returns, are to assign the men to one or another of five clases. These classes are as follows:

CLASS I.

(A) Single man without dependent relatives.

(B) Married man, with or without children, or father of motherless children who has habitually failed to support his family

(C) Married man dependent on wife for support.

(D) Married man, with or without children, or father of motherless children; man not usefully engaged, family supported by income independent of his labor.

(E) Unskilled farm laborer.

(F) Unskilled industrial laborer. Registrant by or in respect of whom no deferred classification is claimed or made. Registrant who fails to submit questionnaire and in respect of whom no deferred classification is claimed or made.

All registrants not included in any other division in this schedule.

CLASS II.

(A) Married man with children or father of motherless children, where such wife or children or such motherless children are not mainly dependent upon his labor for support for the reason that there are other reasonably certain sources of adequate support (excluding earnings or possible earnings from the labor of the wife) available, and that the removal of the registrant will not deprive such dependents of support.

(B) Married man, without children, whose wife, although the registrant is engaged in a useful occupation, is not mainly dependent upon his labors for support, for the reason that the wife is skilled in some special class of work which she is physically able to perform and in which she is employed or in which there is an immediate opening for her under conditions that will enable her to support herself decently and without suffering or hardship.

(C) Necessary skilled farm laborer in necessary agricultural enterprise.

(D) Necessary skilled industrial laborer in necessary industrial enterprise.

CLASS III.

(A) Man with dependent children (not his own) but toward whom he stands in relation of parent.

(B) Man with dependent, aged or infirm parents.

(C) Man with dependent, helpless brothers or sisters.

(D) County or municipal officer.

(E) Highly trained fireman or policeman, at least three years in service of municipality.

(F) Necessary Custom House clerk.

(G) Necessary employe of United States in transmission of the mails.

(H) Necessary artificer or workman in United States armory or arsenal.

(I) Necessary employe in the service of United States.

(J) Necessary assistant, associate, or hired manager of necessary agricultural enterprise.

(K) Necessary highly specialized technical or mechanical expert of necessary industrial enterprise.

(L) Necessary assistant or associate manager of necessary industrial enterprise.

CLASS IV.

(A) Man whose wife or children are mainly dependent on his labor for support.

(B) Mariner actually employed in sea service of citizen or merchant in the United States.

(C) Necessary sole managing, controlling or directing head of necessary agricultural enterprise.

(D) Necessary sole managing, controlling or directing head of necessary industrial enterprise.

CLASS V.

(A) Officers, legislative, executive, or judicial, of the United States or of State, Territory, or District of Columbia.

(B) Regular or duly ordained minister of religion.

(C) Student who on May 18, 1917, was preparing for ministry in recognized school.

(D) Persons in military or naval service of United States.

(E) Alien enemy.

(F) Resident alien (not an enemy) who claims exemption.

(G) Persons totally and permanently physically or mentally unfit for military service.

(H) Persons morally unfit to be a soldier of the United States.

(I) Liscensed pilot actually employed in the pursuit of his vocation.

Member of well recognized religious sect or organization, organized and existing on May 18, 1917, whose then existing creed or principles forbid its members to participate in war in any form and whose religious convictions are against war or participation therein.

In our eighth month of war, also, we began to participate apparently as an ally instead of merely as an associate. In October there were reports of an invitation to us to join in an Allied War Conference to be held at Paris in the middle of November. Considerable mystery was made about the invitation and its reception, as well as to whether or not it was to be accepted. Then an interesting report came out to the effect that the President had chosen his friend, Colonel E. M. House, to collect information and material for use by the American commissioners at the peace conference. Then, on November 7th, when nothing had been said about Colonel House and his mission for some time, Mr. Lansing announced in Washington that Colonel House, together with a large staff of assistants, had arrived safely in England, on his way to attend that conference at Paris. The Colonel has with him

Admiral Benson, chief for operations; General Bliss, Chief of Staff of the Army; Vance McCormick, chairman of the War Trade Board; Bainbridge Colby, of the Shipping Board; Dr. Alonzo E. Taylor, food and health expert, representing the Food Administration; Oscar Crosby, Assistant Secretary of the Treasury; T. N. Perkins, representing the Priority Board, and several others.

This American participation in their councils was received with every evidence of genuine satisfaction by the official representatives of our Allies. The imperative need of frank counsel and well considered joint action was never more clear. For this eighth month of American participation, which has seen only the almost infinitesimal beginning of real fighting by our men, has seen disastrous defeat of our Italian Allies and the practical elimination of Russia as a factor in arms against Germany. It appears that the greatest hope for any assistance to the Allies which now lies in Russia is that such a measure of civil war will ensure as will prevent any substantial profit to Germany from the cessation of hostilities against her on the long eastern front.

The practical cessation of such hostilities has been turned to huge advantage by Germany in withdrawing forces for use in overwhelming the Italians under General Cadorna on the Isonzo line, where only recently he had won such glorious advances against the Austrians. In the middle of October, despatches from Rome began to indicate an intention on the part of the Germans to undertake a great offensive against Italy. Apparently no attention was paid to these warnings by the Allies, and no assistance was sent to Italy. There were reports in Washington of desperate need of guns and other supplies. But nothing was done to meet the need. Then, toward the end of the month, Berlin began to report the advance, and day by day the direful news came of the resistless forward swing of the German divisions, and the ever-increasing toll of prisoners and captured guns, until the figures ran up to 200,000 men and 1,800 guns. The Italian line had been driven back out of Austrian territory, and from one Italian river to another, each of which was to be positions for the stand that was to check the victorious Germans. Reports as this is written are

that the retreating Italians, now at length, reinforced by French and British troops and artillery are making their stand on the Piave River, and hoping to save Venice from the Huns. But Venice is to be evacuated by soldiery and civilians in the hope that its historic buildings may escape the rage of the savages.

Meantime the United States authorities are slowly seeking out the disloyal, and the enemy aliens resident and active among our people. And a custodian of Alien Property has been appointed under the Enemy Trading Act. Also a censorship of outgoing foreign mails has been established. But German endeavor is not stopped.

[*This record is as of November 14th and is to be continued.*]

THE BATTLE OF SLIM BUTTES.

(From the *Belle Fourche Bee.*)

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ON Saturday, June 23d, Mr. W. M. Camp, editor of the *Railway Review*, of Chicago, who has given his recreation time for many years to a study of the Indian Wars of the West, passed through Belle Fourche, on his way home from Slim Buttes and announced that he and a party of ranchmen of the vicinity had succeeded in locating the place where this battle occurred. Use was made of authentic data and sketches of the ground obtained by him from upwards of twenty surviving officers, enlisted men and Sioux Indian survivors of the battle, and an abundance of debris of Indian property destroyed with the captured village, which was found two weeks ago, is unmistakable evidence that the true location of the battle has at last been discovered. From an interview which we were able to obtain with Mr. Camp, the following facts regarding the battle and the search for the location of the site of it were obtained.

The Battle of Slim Buttes was fought on September 9, 1876. General George Crook, commanding the Department of the Platte, with a force of about 1,500 men, started from Heart River, in what is now North Dakota, where he had been separated from the command of General A. H. Terry, after the disastrous campaign of the Little Big Horn during the summer, and started on a "bee line" for the Black Hills. The immediate necessity was to procure provisions for this large column at the earliest possible date.

On the evening of September 7th, Crook and his soldiers reached the north fork of the Grand River, in a famished condition and went into camp. For eleven days the entire command had been subsisting on quarter rations, supplemented with horse meat, wild plums and bull berries; and, on the date stated, the commissary supplies gave out entirely. From overeating of wild fruit many of the men had contracted dysentery, which aggravated their weakened condition resulting from the shortage of regular food.

But this was not the worst. There had been incessant rain for more than three weeks, and on much of the route from the headwaters of the Tongue River, in Wyoming, where Crook started in July, north nearly to Yellowstone, east to the Little Missouri, and thence on the Heart, the Indians had burned the grass behind them, so that the horses, much of the time, had but little or no grazing, or were subsisting on newly sprouted, instead of cured grass. The consequence was that the horses were fast giving out, and several hundred of them had been shot to prevent them from falling into the hands of the Indians. The official reports show that more than one-third of the cavalry were afoot in the sticky gumbo, either leading their horses or having abandoned them. Even the best of the stock was in no fit condition for offensive campaigning.

Taking account of the footsore and emaciated condition of the men and horses, Crook saw that he would never be able to get the outfit to civilization in the Black Hills, the nearest source of supplies, without resort to unusual measures. Accordingly he selected Captain Anson Mills, of the Third U. S. Cavalry, and gave him instructions to pick 150 men, mount them on the best horses that could be found in any of the cavalry regiments present, take fifty pack mules, and hurry forward under utmost exertion to Deadwood, where he was to purchase anything and everything available in the line of provisions, and then take the back trail to meet the main command. Crook himself would stay with the main force and come along as best he could.

Captain Mills left camp on North Grand at 9 P. M., of September 7th, and marched forward all night in rain and inky darkness. He took as guide the famous Frank Grouard, and with him also went several hungry eastern newspaper reporters, whom Crook was glad indeed to part with and who were as eager to reach the flesh pots of the mining camps in the "Hills."

Halting at 5 o'clock the next morning (September 8th), he grazed the stock three hours and then went on. The day was drizzling and foggy, and although they were marching parallel with the high range of the buttes to the westward, they were so hidden in clouds and fog that only the rolling prarie in the immediate vicinity was visible and they were unaware of the proximity of the buttes. Alert for Indians, Grouard kept one ridge ahead of the command, and about 2 P. M. signalled back, with his hat, that he had discovered something. Mills at once halted the command, and riding up to Grouard, they staked their horses behind the ridge, and with their field glasses, made out several Indians packing game and riding across the line of march of the troops, more than a mile distant. The Indians were on the open plain and appeared to be marching westward or toward the northwest; and, of course, it then was known that their village lay in that direction. As further advance of the troops would certainly lead to discovery by the Indians, Mills knew that further investigation before nightfall would be hazardous. Accordingly, he led his men through low ground to the eastward and south and before dark had the whole force concealed in the deep and narrow coulee of a stream, the name or identity of which was unknown to him or any one else with the troops.

During the night Mills and Grouard attempted to learn the location and the size of the village, but the barking of many dogs made it seem imprudent to approach near enough to accomplish their whole purpose. They became aware of the

approximate location of the village and had come upon the Indian pony herd, but felt impelled to withdraw without having seen a tepee. The propriety of attacking the camp was, therefore, veiled in uncertainty, and in the discussion that took place in the council of officers, called by Mills, attention was called to the misfortune that had befallen the valiant Custer only eleven weeks previously, by trying to attack a camp that was much larger than he had anticipated. How, then, might it go with this small force to attack under similar circumstances?

But Mills who had been instructed by Crook to "pitch into" anything in his way that he thought he could handle (and save the captured meat), argued that some chance, at least, must be always taken in successful warfare, and that to go forward would surely result in discovery and pursuit by Indians soon after daylight, where they, with their poor mounts, would easily be overtaken by the Indians and have to fight anyway. In the subsequent language of Grover Cleveland, "They were confronted by a condition rather than by a theory," and seeing that a fight was inevitable, the advantage would seem to be in falling upon the Indians in their sleep.

Mills had his way and promptly organized the troops for attack. Fifty men were to charge the village, fifty more were to gobble up the herd, and the remaining fifty under command of Lieutenant J. W. Bubb, then quartermaster of the party, were to stand by the pack mules.

At length the command, in three parties advanced up the creek, toward the west, to the attack. It was still quite dark, and the utmost caution had to be exercised in order to steal upon the village that was "somewhere" in the vicinity. The "accident" that happened in this case was the stampeding of the Indian herd, through their keen nasal sense of "American horses" before the troops were quite ready to charge. The ponies ran at once to and through the village, waking up all the Indians, so that the surprise planned upon was off. Seeing that delay meant failure, the troops immediately rushed in among the lodges, while the Indians were already fleeing to the low hills surrounding. The tepees were taken, but of Sioux only a few squaws fell into the hands of the captors.

These women, through Grouard as interpreter, informed Mills that a large camp of Sioux were near at hand and would surely come to their relief. Mills, taking them at their word, at once dispatched a courier on the back trail to inform Crook, who was found already on the march and who hurried men forward as fast as they could go.

In the meantime Mills held the village, and dug intrenchments nearby in which to make a stand should he be attacked in large force. Some Indians who had fled from the village took refuge in a brush-covered washout or ravine, so near to the village that they could command it, and they kept up such vigilance as to prevent destruction of the tepees. In the charge on the village, Lieutenant Von Lutwitz had been severely wounded in a leg, and several soldiers had been wounded by the fire of the Indians from the ravine. Other Indians took station on hills out of range and annoyed the troops by shooting an occasional spent ball into the still intact village.

Early in the afternoon Indians began to swarm over the main ridge of Slim Buttes, which now, the clouds and fog having lifted, were visible, a few miles to the west. The time was a critical one for Mills and his hundred and fifty, but, greatly to the relief of their anxiety, a lone cavalryman sent to a craggy butte to the north, signalled that Crook was showing up on the distant ridges to the northeast. He was coming right on Mills trail, as he had promised to do two days before, and so Mills knew that relief was only a question of an hour or two.

Crook arrived on the scene none too soon, for by the middle of the afternoon some 2,000 fighting Sioux were advancing under cover of hills and ravines to advantageous positions in all directions within a half circle swung around from north by way of west to south. These Indians had come through the buttes by way of what is now known as the Reva and Indian passes, the latter being about three miles south of the former, and neither of them farther than four miles from the village.

As the nearest high ground was to the south and southwest, the most troublesome shooting came from these directions, and Crook was not slow in organizing troops to drive them off, which they did, toward evening, by advancing under the Indian fire, with some loss in wounded. Finally, a long skirmish line

was thrown out, extending from north around to south, in conformity with the continuous semi-circular range of buttes, and drove the Indians to a safe distance. From this time on there was no further trouble from long range fire from the Indians.

Let us now go back to the eighteen or twenty Indians, men and women, who had taken refuge in the gully across the creek from the village. General Crook had given attention to these as soon as he arrived, and assured Mills that he would "get them out." General Crook always had a warm feeling in his heart for Indians, and, through his Sioux-talking guides and scouts began calling over to invite the besieged to come out and surrender, under promise that no harm would be done them. This plan resulted in a few women and boys coming out and giving up, but the majority were obstinate and answered back that they feared treachery, and would trust to the tactics of their friend Crazy Horse rather than in the promises of an enemy.

Failing to make an impression on these nervy, but forlorn fighters, Crook finally ordered that they sould be subjected to a concentrated skirmish line fire, into the mouth of the ravine, from cover across the creek. A few rounds from several hundred men, arranged about in a semi-circle, did terrible execution, killing a number of men and women. Only three or four escaped unwounded, and after the firing ceased these came out without further resistance.

The loss to the troops was one scout and one soldier killed and one commissioned officer and six of the enlisted men wounded. While the losses on either side in this battle were not heavy, the event is nevertheless an important one from the historical standpoint. It was the first real defeat of the large horde of hostile and reservation Sioux who that year defied the government because of unfair encroachment of whites in territory set aside for exclusive use of the Indians by treaty. From this time on the Sioux and their Cheyenne allies began to break up into bands that were defeated and driven to surrender at the agencies during the following winter and spring. No other engagement fought during the year 1876, except that of the the Little Big Horn has been written of so extensively

as the battle of Slim Buttes. King, Burk and Finerty, each in his own masterly style, has written an entertaining classic chapter describing this event as he saw it.

Slim Buttes, a long range of clay hills, in Harding County, South Dakota, is still far removed from railroads. The eastern slope is well covered with grass and not a little timber. Much of the territory is now in the forest reserve. Cattle men began to range their stock in these buttes as early as 1886, and the homesteader came about 1905, or later; yet until the past week the site of the battle fought here forty-one years ago was unknown to any of the inhabitants.

Some seven or eight years ago, Mr. Elias Jacobson, topographer of the State Land Survey, from various accounts that he had read, picked upon a spot in Section 27, Township 17 north, Range 8 east, as the probable site of the battle, yet no survivor of the fight had visited the ground. Without investigation the State Historical Society of South Dakota accepted this as the correct location, and published Jacobson's map of the locality, in volume 6, page 495, of Collections and, for a time no one questioned the accuracy of Jacobson's idea of the identity of the site.

The Captain Anson Mills of 1876 is still living, at the age of eighty-two, and is now Major General U. S. Army, retired. About four years ago he heard of the supposed discovery of the site of the battle and became desirous of visiting the place to see if the point selected corresponded with his recollections of the topography. Accordingly, in July, 1914, in company with General Charles Morton, a survivor of the battle; a representative of the State Historical Society, in the person of Mr. Robinson, a son of Doane Robinson, Secretary of the Society; and Mr. Camp, General Mills went to Slim Buttes by automobile from Belle Fourche and visited the ground referred to (Sec. 27–17–8). Much to his disappointment, he found that the site selected was not the one where the battle was fought. Both he and General Morton declared emphatically that the true site had not been identified, and they began to search in other localities, when, through a misunderstanding about the length of time for which the automobile had been hired, the

trip was suddenly abandoned and the party returned to Belle Fourche.

It was then the intention to continue the search the next year, but this was not done. General Charles King, another survivor of the battle, in 1915, hearing, for the first time, that a detailed map showing the supposed location of the site had been published, declared that the Jacobson location was wrong, and suggested that a careful search be made about one and one-half miles to the southeast of said Section 27 which is at Gill postoffice. His idea as to this suggested substitution to the southeast was gained from a study of the hills shown in the Jacobson map.

In 1915 Mr. Camp planned to visit the Buttes with an Indian survivor of the battle, but, by reason of governmental red tape about granting permission to take the Indian off the reservation, had to abandon the trip. In the meantime Mr. Camp continued his study of the location of the battle. In addition to data and sketches furnished by General Mills and Morton (the latter of whom died in 1915), he interviewed General George F. Chase, General John W. Bubb, and General Charles King, besides more Sioux Indians and several enlisted men. *General King made for him a map showing the topography of the site of the village and contiguous territory, in considerable detail.*

With these data and maps Mr. Camp proceeded to the Slim Buttes country, arriving at Gill on June 16th, and spending three days in that vicinity in a careful search of the courses, Rabbit, Beaver and Jones Creeks. The investigation failed to disclose any evidence whatever of fighting ground. General Mills had insisted that the site, wherever found, should yield broken utensils of an Indian village, empty cartridge shells and the entrenchments which he had dug for anticipated defense.

Giving up the idea that the battle could have been fought anywhere on the creeks above named, he explored, in succession, the creeks to the north and finally arrived at Revan Gap, where Mr. W. W. Mitchell told of having found numerous cartridge shells on three buttes. Assuming one of these to have been the butte to the southwest of the village, Mr. Camp started in there and followed a northeast course to the creek bottom.

Coming upon fragments of an iron tea kettle, *he was gratified to discover that all of the surrounding landmarks conformed splendidly to General King's map*, so a minute search in the grass was begun right there.

* * * A search of two and a half hours brought forth unmistakable evidence of a destroyed village, as no less than twenty-one kinds of implements or articles used by these people in their camps were picked up. In most cases the articles were nearly covered with dirt or overgrown with sod.

* * * * * *

At the time of the battle General Mills was unaware of his location until told by the captured squaws that they were on Rabbit Lip (Mastincha Putin) creek, on the east of Slim Buttes. Gap Creek, where the discovery has been made, is one of the three main branches of the "Rabbit Lip" Creek of the Indians, the other two being the streams now known as Antelope and Rabbit Creeks by the settlers. The stream now called Rabbit Creek is the central branch and rises high up in the buttes.

* * * * * *

Part of the relics found have been sent to General Mills, who lives in Washington, D. C. The larger portion, however, have been deposited with Mr. W. W. Mitchell, as custodian, and a museum of the battle has been started within a mile of the place where it was fought. As cartridge shells and debris of the destroyed village lie scattered through the grass or lightly covered by the soil, in plenty, there is every opportunity of adding to the collection of relics already started. None of the ground occupied by the village or fought over by Crook's soldiers on the day in question has yet been plowed, although the larger portion of it is susceptible to cultivation.

It might be stated, in conclusion, that General Crook camped on the battlefield the night after the fight, and the next day preceded on toward the southwest. Mills was again sent on ahead, and, purchasing large quantities of food and a drove of cattle, in Crook City, Deadwood and other mining camps, returned and met the main command on the Belle Fourche River. Eating a square meal the first time in several weeks,

the command was marched to Centennial Park, where the men and horses were recuperated before proceeding to Camp Robinson, later Fort Robinson, on White River, where campaigns subsequently conducted by Crook that year were organized.

THE USE OF CAVALRY IN THE EUROPEAN WAR.*

By Lieutenant Colonel H. PONDRET, Revue Militaire, Suisse.

THOUGH it is difficult to collect detailed and accurate information on cavalry operations in this war, I have undertaken this investigation because I believe the legend of the "cavalry's failure" should not be allowed to persist. A great deal has been heard about this "failure," especially among us, though it is difficult to discover what interest anyone could have in convincing an arm of its lack of value.

In spite of the obscurity of which I have just spoken, enough is, however, known to permit the statement that, wherever it has been well used, the cavalry has done all that could be expected of it and sometimes even more.

* * * * * *

When the war broke out, many questions naturally suggested themselves as to the probable use of the cavalry with their horse artillery, their pioneer telegraphists, their cyclists, their radiotelegraphic stations, their trains of auto trucks, raids especially recommended by General von Bernhardi, who was hypnotized by old memories of the War of Secession! On the other hand, should we be likely to see the cavalry working according to opposite ideas, at a short distance from the infantry, in intimate contact with it, in the combat of the three arms, to use an expression which two years of war have already made obsolete.

*Reprinted from *The International Military Digest*, May, 1917.

And reconnaissance? Would it be done by means of squadrons or, according to the old methods, by patrols? Would it be possible still, as at the beginning of 1870, to push the elements of this arm far forward or would the new progress of armament compel the cavalry to work only at short distances?

And then, there was the great question of the mounted attack, close to the heart of so many cavalrymen.

Finally, it might be asked how the cavalry would behave in the dismounted combat. Its instruction had not been pursued everywhere with much care. Would it be enough for the task?

The answer has come to all these questions. All the eventualities forseen have come to pass, naturally in varying degrees.

With the cavalry of General Sordet in Belgium and the German cavalry on the Russian front, we find raids.

We find the cavalry sometimes preceding the armies by great bounds, sometimes working in direct contact with its infantry, at short distances.

We find it actually used on the battlefield itself, that of the Marne, for example.

Numerous mounted attacks have taken place. The cavalry of General Brussilof has showed us pursuits on a large scale, such as the most ardent cavalrymen did not dream of.

Finally, as was forseen, there has been much fighting on foot.

But let us not anticipate. Let us look into things a little more closely, beginning with the German cavalry on the Western front, about which we have the most information. I shall confine myself to the cavalry corps of the First and Second Armies, because these corps of the marching flanks, had, naturally, the greatest and most interesting activity.

On the morning of August 4, 1914, preceding the right wing of the army of invasion, two divisions of cavalry (2d and 4th) of von Marwitz's corps, crossed the Belgian frontier east of Gemmenich, skirted the Dutch frontier and moved on Vise, north of Liege, intending to cross the Meuse there.

They found the bridge destroyed and the crossing guarded by a battalion of infantry. The latter, favored by the nature

of the terrain, stood off all attacks, in spite of its small number.

Checked here the German cavalry rapidly adopted another plan, recommended by their mobility and their acquaintance with a terrain probably long since known to them. A brigade of Hussars was sent to the ford at Lixhe, below Vise, and succeeded in crossing it. Not only did the Belgium troops guarding the crossing at Vise find their left turned (the effect of which was to make them withdraw to the line of the forts of Liege), but this first crossing of the invaders to the left bank of the river opened the roads to Antwerp and Brussels to exploration. As soon as the Vise bridge was restored and some bridges at Lixhe constructed, an entrance was prepared for the German columns which latter sought to cut off the Belgium army established on the Gette from its base at Antwerp. The task of the first day was thus accomplished and in a relatively short period of time.

During this first day, August 4th, the German cavalry is not very far ahead of the infantry advance guards, this is easily explained by the proximity of the frontier. Besides, the Germans do not seem to have applied any rigid system in this matter of distance. Sometimes the cavalry is kept close, sometimes it is given free rein. On the Western front, its marches were only rarely very long. The necessity of having at hand his powerful auxiliaries the battalions of chasseurs and the horse artillery tend to prevent the commander of cavalry divisions from going too fast. If I emphasize this point, rather interesting in itself, it is because this course was not followed everywhere.

The Second and Fourth Cavalry Divisions were not the only ones to cross the Belgium frontier on the morning of August 4th. Further to the south coming probably from around Malmedy, the Ninth Division, belonging also to von Marwitz's corps, crossed the Salm between Stavelot Viel-Salm, and marched towards Marche, west of the Ourthe; it reached Marche on the 6th. We have less information about its activity and its mission. We may suppose that it had to cover the concentration of the Third and Fourth Armies at Saint Vith and north of that place, then during the attack and investment of Liege, to cover those operations towards the west. It was perhaps with advance elements of this division that the Belgium lancers were engaged on the 5th at Plaineveau, south of Liege.

On the 14th, the Ninth Division having become superfluous south of the Meuse when the First Cavalry Corps (Guard and Fifth Division) arrived, crossed and joined the Fourth Cavalry Division in the region of Gembloux-Wavre. These two operated together until the 8th.

The Belgium which, on the 6th, was on the concentration quadrilateral Tirlemont-Louvain-Wavre-Perwez, took up positions along the Gette. The left flank rested on the Demer, the right at Jodoigne was somewhat protected by the forts of Namur, but, after all, not very efficaciously. The distance to the Meuse is very great, and the adversary might well be tempted to send troops through the gap. The Germans concentrated an enormous mass in the front of the Belgium army. About August 18th there were about eleven Army Corps here.

The mission of the German cavalry, during this period, is quite evident. It had to mask the movements of the armies and to operate on the enemy's flanks. The first of these tasks was quite easily accomplished, thanks to the overwhelming numerical superiority of the German cavalry. But operations on the enemy's flanks were not so easy. The first attempts were against the Belgium left. They were not always successful at the beginning.

On August 10th, the Second and Fourth Divisions pushed with a part of their forces at least, to the Velpe, between Diest and Tirlemont. This movement does not appear to have succeeded, for on the 11th, we find these divisions at Hasselt. On the 12th there was an undoubted check. Six regiments from the same divisions tried to force a crossing of the Gette at Haelen. They were supported by two battalions of chasseurs and three batteries, that is 4,000 cavalry, 2,000 infantry, and 18 guns. The Belgium cavalry division could oppose them with only 2,400 troopers, 400 cyclists and 12 guns. The Germans began their attacks about 8 o'clock in the morning, the cavalry being dismounted for the most part. For two hours two companies of cyclists stood them off. About 10 o'clock, German artillery fire made the edges of the village of Haelen

untenable, the cyclists then blew up the bridge and retired to the railroad.

At noon the Germans attacked simultaneously Zelk and Haelen stat on. The cyclists fell back towards the main Belgium position at the farm of Yserbeeck. Twice they were charged by the German dragoons, who suffered great losses.

Finally the Yserbeeck farm was taken, and the situation appeared hopeless for the Belgians. At this moment, the Fourth Belgian mixed brigade arrived on the field after a march of twenty-five kilometers. Their appearance turned the scale. From then on the Germans could make no progress, and they fell back to Haelen.

After this check, the role assigned at first to the Fourth Division was no doubt changed, for we find it on the 16th, about Gembloux and Wavre. It is probable that this division and the Ninth were covering the march of the Third, Seventh and Ninth Corps, which had crossed the Meuse between Liege and Huy and were marching towards the interval between Jodoigne and Namur. The German and the French cavalry met near Perwez, and the French seem to have had the worst of the combat.

The German cavalry took an active part in the fight at Tirlemont, on the 18th. This was a critical day for the Belgian army. Pressed in front by overwhelming numbers, and with its flanks turned, it could not hold any longer on the Gette. Its left between Diest and Tirlemont, was approached by three army corps. The Second Cavalry Division flanked the movement by advancing between the Grandes-Nethe and the Demer. Elements of that division were at Aerschot, north of Louvain, on the evening of the 19th.

A little more and the communication with Antwerp, the army's base, would have been cut off. A retirement to the Dyle was first accomplished and when it was found that this was not sufficient to escape envelopment, the retreat on Antwerp was ordered.

To finish with this phase, so far as we can find out, the Ninth Cavalry Division followed the Belgian retreat through Ottignies to Brussels. It went through the latter city without

stopping on the 20th and continued its march towards the west.

The Second Cavalry division seems to have continued its function as flank guard on the extreme right; it covered the right flank of the First Army which was marching on Brussels. This division then went in the direction of Ostend; we find it at Alost on the 21st, exploring towards Ghent, while the Ninth Division was reconnoitering in front of the First Army. We lost track of the Fourth Division; it is probable that it continued to operate with the Ninth Division.

During the operations north of Liege, a large body of cavalry appeared in the Condroz, the region south of Liege. This corps was made up of the Guard Cavalry Division and the Fifth Cavalry Division. It was concentrated at Bithburg, north of Treves, and marched through the Ardennes forest, with the mission of reconnoitering the line of the Meuse about Dinant. It reached La Roche on the outer side of the Ardennes on the 11th of August. The patrols which scoured the country skirmished with more or less success with the advanced elements of the French cavalry corps of Sordet, which had arrived on the Ourthe about the 7th or 8th. Except in one instance the German patrols were not able to reach the Meuse.

In order to find out what was going on along the line Namur-Givet and probably also in order to open the way for the Twelfth Saxon Corps, the commander attempted, on August 15th, a reconnaissance in force of Dinant, from the direction of Ciney. After temporary success, the Germans were repulsed by the troops of the First French Corps which had arrived only a little while before. General von Richthofen did not insist. On the 19th he gave up his place to the Twelfth Saxon Corps, which took up the operation on its own account.

Thus on the two flanks, at Haelen and Dinant, the attempts of the German cavalry fail almost s multaneously, August 12th and 15th. The attack on the Meuse was a serious undertaking. It will always be difficult even for a strong cavalry body to force a crossing so naturally strong and defended by a good sized body of troops of all arms.

The check to von Marwitz's cavalry on the right wing is not so comprehensible. One may wonder whether, if he had been

insistent on cross ng at Haelen he might not have succeeded. Zelk was freely defended and the movement on that point might have been developed more.

Upon leaving the region of Dinant, von Richthofen's corps was ordered to cover the eft flank of the Eleventh Saxon Corps which was marching upon Namur. They marched around this place and reached the vicinity of Charleroi on the 23d as the battle was ending.

While the battle of Charleroi was going there were five divisions of cavalry north of the Sambre-Meuse.

The Second Division on the right bank of the Dender, reconnoitering in the direction of Lille.

The Fourth and Ninth, in the region of Tournai-Conde on the Scheldt.

The Guard and the Fifth, south of the preceding and farther to the rear.

On the 24th, the advanced elements of these divisions are on the line of Pitthen (north of Tournai) Tourcoing-Lannoy, as well as south of Lille and near Douay.

From this moment on, it is rather difficult to describe with exactness the activity of these cavalry masses. We may suppose, however, that the right wing turned to the south, for, on the 25th we find a large part of von Martwiz's corps near Cambrai.

About the same time, von Richthofen's corps crossed the French frontier at Sars-Poteries.

The German is entering on a brilliant period! The enemy beaten at Mons and Charleroi, is retiring to the south. The object is to cling to him and not give him any rest; the marches are lengthened so as to push the rear guards. The cavalry has its own infantry on its heels. The latter is advancing by forced marches, especially on the German right. The result is a great inequality as to distances, and cavalry and infantry are frequently abreast of each other.

Von Marwitz's cavalry, still on the right flank, pushed from Cambrai to Marcoing, which it reached the 26th. From there it reconnoitered towards Combles and Peronne. On the 29th, it was reported at Albert, on the 30th near Roye. If this itinerary is correct, we may deduce from it that the troopers of

von Marwitz covered the front and right flank of the Second Corps, itself the extreme right element of the First Army.

In the night of August 31st—September 1st, the cavalry of the First Army went through the forest of Compiegne in two columns. In the morning, they had a serious engagement with the English rear guards on the south edge of the forest. The division lost half of its artillery, and was roughly handled, so much so that the next day it could not take part in a fight which the Second and Ninth Divisions, coöperating with advanced troops of the Second and Fourth Army Corps, had near Senlis.

It is probable that the circumstances of this check to the Fourth Cavalry Division were as follows: On the evening of the 31st, a body of 4,000 English troops of all arms coming from the direction of Compiegne, arrived at Nery, a little town south of the Oise. Very well received by the inhabitants, the officers dined till a later hour, and seemed to have neglected the measures of security indicated by the circumstances and the dangerous proximity of the forest of Compiegne. Warnings were not lacking, however; civilians reported later in the evening that the forest was full of Germans. At 5:30 in the morning when the batteries were ready to leave, the first shrapnel burst unexpectedly in the village, accompanied by the rifle fire of skirmishers who had approached very close, thanks to the mist and the lack of service of security. The losses were very great. Many artillery team horses were hit. The English Officers, many of whom were hardly equipped, made up for their carelessness by great decision and bravery. After a moment of the extreme confusion, the English got themselves together. In spite of the loss of many of their officers, they counter-attacked vigorously. The Hussars, most of whose horses had been killed, deployed on foot. The German skirmishers were driven back. The English pushed as far as the artillery position, captured eight guns and threw the support back in great disorder. This offensive was so vigorously conducted that the necessary time for a withdrawal was gained. It was only after the departure of the English and the forcing of the Oise more to the west that the Germans were able to occupy Nery.

On September 4th, the Second and Ninth Divisions participated in the change of direction to the Southeast of General von Klucks army and marched to La Ferte-sous-Jouarre on the Marne. The Fourth, still suffering from the effects of the Nery fight, probably was assigned to the flank guard corps, the Fourth Reserve, which stayed north of Meaux.

On September 5th, the Second and Ninth Divisions continued their march to the south, went through Coulommiers and moved towards Provins. Towards noon it was ordered to stop. It is probable that they passed the night in the sector of the Fourth Corps, at Coulommiers, or in the immediate vicinity, for that is where it is known to have been engaged on the morning of the 6th. The battle of the Marne was about to begin.

* * * * * *

Almost on the line with Marwitz's corps and on its left, operated the cavalry of Richthofen. Its mission was to pursue the English retreating from Mons.

This pursuit leads to daily combats with the enemy's rear guards. There is fighting first at Haulchin, at Givry, then at Marbois, which is taken by assault and where 100 prisoners are taken. The chief of staff of the corps is killed in the fight. Meantime, patrols are sent out on a wide front and generally to great distances. Their strength varies a great deal, from a dozen men to a platoon. One of them, sent towards Saint-Quentin, attacked, according to the German account, a platoon of cuirassiers which it put to flight, killing six men and five horses.

On the 28th, another fight at Urvillers and around Saint-Quentin. A French territorial regiment, which had arrived that morning only, was roughly handled there and left many prisoners with the troopers of the Guard. Reinforcements from La Fere and an attack by a squadron of English Hussars, which bowled over a German squadron, did not succeed, however, in turning the issue of the fight.

This corps has now arrived in the region of important water courses, and a squadron is sent to reconnoiter the crossing of the Oise, and the Aisne.

The 29th, Galancourt, south of Ham, was taken and then an attack by the dragoons of the Guard prevented the English from stopping at Guiscard.

On the 30th, Richthofen's corps arrived before Noyon. The patrols had not been able to find out whether the enemy was disposed to defend the city nor whether the Oise bridges were still intact. A part of mounted troops and cyclists were sent to develop the situation. The cyclists were instructed to rush the attack on the river crossings. The city was not defended and strangely enough a bridge was found intact. The corps were then able to cross there and at Ribecourt and to move, the same day, to the region south of La Fere, moving on Soissons. That day, a lieutenant succeeded in seriously damaging the Soissons-Paris railroad.

For September 1st, the cavalry received order to move to the south through Soissons, and reconnoiter towards Chateau-Thierry. The taking of Soissons was not so easy as that of Noyon. All the patrols which advanced towards the city were met by fire and could not progress. One regiment of Uhlans, a battalion of Chasseurs, two batteries, and a detachment of pioneers were sent forward to seize the crossing of the Aisne. The chasseurs and pioneers entered the city first, ran to the bridges and arrived in time to prevent the destruction of the last, still intact. The French defended themselves in the barracks, but under the artillery fire they had to yield finally, and the German squadrons began to go through the city, while a certain number of squadrons, dismounted searched the houses. The pursuit was continued that day as far as Branges, about twelve kilometers from Soissons.

On the 2d, the order arrived from General von Bulow to cross the Marne at Jaulgonne. The advance went forward rapidly, supported by artillery and machine guns; it attacked on foot and succeeded in seizing the bridges before they were cut; then, without stopping, it gained the heights south of the river. Under this protection the main body was able to cross this important obstacle.

On September 4th, the direction of march was Montmirial, but the cavalry corps could not advance on the roads; they were filled with the troops of the Seventh and Ninth Corps.

In the formidable rush of the German armies towards th south, the infantry was keeping up its forced marches without any respite.

The First Army had indeed encountered resistance at Cambrai (the 26th); on the 28th, south of Bapaume (at Perrone, at Bellenglise) and at other places. The French army of General Larenzac tried on the 29th to check the march of the Tenth Corps at Guise and Saint-Quentin. But, on the whole, the advance had been very rapid. The cavalry which opened the way and which had daily combats with the enemies rear guards, was caught up with sometimes, on that account. There is nothing astonishing in that.

It was then across country that the cavalry gained the Petit-Morin between La Ferte-sous-Jouarre and columns of the Second Army and on their right. It moved still further to the right on the 5th, in its march to the Grand-Morin and beyond. That evening the guard was across the road from La Ferte-Gaucher to Provins, the Fifth Cavalry Division to its right. These two divisions covered a front of about five kilometers. They were in this position when the battle began. Before studying the role which they played in the battle of the Marne, in coöperation with von Marwitz's cavalry, let us take a rapid survey of the activities displayed in the pursuit. On the whole, the difficulties were not great. The enemies' orders are almost always not to become seriously involved. If he resists too long, the artillery is called on to force h m to leave. Besides, the cavalry has the comforting thought that the heads of the infantry columns are close behind and ready to support it. These are factors likely to give assurance to a cavalry that moreover, has proved in more difficult circumstances, that it had no lack of it. But, though the task was not difficult, it must be admitted that it seems to have been well executed.

The cavalry of the First and Second Armies opened the way to its infantry, following the adversary closely everywhere. Nowhere was contact lost. The crossing of the Aisne, the Oise, the Petit-Morin and the Grand-Morin were always occupied in time, thanks to the decision of the advance guards and sometimes even to the bold attacks of the few troopers in

that point. Where the bridges were found to be destroyed, the cavalry pioneers replaced them without delay, as at Noyon and at the Grand-Morin.

Reconnoitering, inasmuch as the cavalry can be made responsible for it—we shall see that that was not always the case—seems to have functioned well; in this prolonged pursuit, no surprise of large detachments is reported, and such an event might easily have come about in these circumstances.

The marches were thirty to forty kilometers a day. Can it be asserted that the pursuit was not rapid enough? Daily fights, the anxiety of the cavalry commander to have all his troops well in hand, the numerous crossings of water courses, the numberless reconnaissances, slackened inevitably the forward movement.

In any case, thanks to the methods used, the German cavalry finds itself in the best possible condition to take part in the battle which is about to be fought. The horses are tired but not exhausted, the morale of the troopers is very high, the pursuit has intoxicated them, and, then are they not abreast of Paris? (Saddle sores seem, however, to have been quite numerous, which condition is not astonishing, considering the lack of rest. The big horses of the cuirassiers suffered more than the Hussars' horses—this only confirms what is known of the greater endurance of small horses).

The losses were not very great. The Germans attribute this fact to the extremely poor shooting of their adversaries; ill directed volleys did not make any great gaps in the ranks of the German cavalry. It must be said, in this regard, that the German commanders seem to have been fairly saving of their men, during this period, at least. As we have seen, when the enemy's resistance became too great, when it could be forseen that the assault of a town or the attack of a position would be too costly, the artillery was brought up to clear out the place.

In fights for the possession of town, we generally see the battalions of chasseurs engaged in front, squadrons on foot on the flanks, then mounted elements trying to envelop the enemy and even to gain the opposite end of the town by wide turning movements, thus cutting off the adversary's retreat. This maneuver, constantly repeated, resulted in a great number of

prisoners for the German cavalry. With the advance guards, machine gunners and cyclists usually marched. Cyclists were frequently assigned to patrols.

The Belgian and French reports often speak of German infantry being transported in auto trucks so as to be able to accompany the cavalry. The German accounts made no mention of this, and it is probable that the battalions of chasseurs and carbineers kept up by marching on foot. This performance is the most remarkable because they were hardly sparingly used in the fights. They are found taking part in all engagements. As we shall see later, their losses were exceedingly large in the critical days of the battle of the Marne.

Military Notes

WHY IS IT? AN ANSWER.

IN the JOURNAL for October, pages 259 *et seq.*, appears a query under the above caption. The remarks therein touch on vital points and will appeal strongly to officers seeking betterment of service conditions. The existence of the set forth conditions suggests its corollary—the necessity for correction.

The query sets forth the general absence of the spirit of leadership and initiative in our younger officers and asks the reason. No doubt the writer had in his own mind the cause of the condition and brought up the subject in order that some friendly discussion, serious thought, and corrective measures may be had thereon.

It would seem that the query is most timely. We are now at war. There is no time at which initiative and the spirit of leadership is more necessary than now. If such be lacking or dormant, the sooner it is created or aroused from its slumbers, the sooner will we be prepared for the task ahead of us.

Many years ago a Russian, General De Wodye, wrote a most excellent treatise entitled "The Causes of Success and Reverse in the Franco-Prussian War." The merits of the book are such that even the Germans adopted it for study in their own War College instead of their own garbled and contorted general staff account of the same war. The book clearly brings out that the chief cause of the reverses was the centralization of power in the higher commanders and the resultant inevitable absence of initiative and spirit of leadership in the lower ones. It accounted for the defeats of Weissembourg and Wörth, the

lost battles around Metz and the latter's fall, and so on. These defects the French have fully realized and eliminated, as their operations in the last three years have demonstrated.

The matter may also be illustrated in another way, taking the usual form of the field order as an example: Paragraph 1 gives the information of our own and the hostile forces; paragraph 2, the commander's intentions or object sought; paragraph 3, the detailed instructions to commanders and units in order to carry out the intent of paragraph 2. In general matters of our service, paragraph 3 is the only one given out. Our every act is prescribed with the greatest particularity of detail and is given such prominence that the object in view is frequently not even guessed.

This prescription of subordinate action begins at the very top, from Acts of Congress which prescribe numerous details, that are matters of duty and prerogative of the Chief Executive, and passes clear down the line, becoming more detailed in its nature as the system descends.

There is a realization in high places that the system needs correction. G. O. 17, W. D. 1913, prescribing the bases of training, gives commanders latitude therein and seeks to develop initiative. But, in practice, this has not worked out, possibly and probably because centralization has been deep rooted too long and time is an essential element in changing old ways to new ones.

Lack of knowledge, too, is frequently a contributory cause. Fighting to overcome the enemy is the *raison d'etre* of an army and, yet, in our three-year garrison school course the subject of tactics occupies, excluding Saturdays, Sundays, holidays, and one day devoted to examination, only thirty-seven instructional hours. That is a fair expression of the ratio between time devoted to tactical work and that given to all other forms of service instruction. It is almost useless to give our young men latitude unless they have the necessary basic knowledge with which to take advantage of it.

A realization as to what constitutes the essentials on the part of those charged with instruction and training is also sometimes observed. Instances can be cited where commanders have forbidden their subordinates from conducting tactical

exercises, merely because such particular exercises were not specifically described in detail in the drill book.

In summation it may be said that the principal causes of any observed lack of initiative and spirit of leadership in juniors are—

1. A long existent deep rooted strangle hold grip of beaureaucratic administration. Papers must be kept straight whether the battle be won or lost.
2. Centralization of control, command and instruction.
3. Insufficient basic instruction.
4. A failure on the part of a majority of those charged particularly with instruction to realize and visualize the necessities and to take advantage of such latitude as is given them to decentralize and to force subordinates to assume responsibility and the initiative.

This presents another question: Will a David arise to slay this Goliah? Who will cut the Gordian knot?

H. R. H.

REMOUNT TROOPS.

ON JANUARY 8, 1917, this troop received seventy-eight remounts for the purpose of completing their training. They had been in the different troops of the regiment for periods varying from about two to three and one-half months and an earnest effort has been made to give them systematic training by having them all assembled during their work hours for supervision by a selected officer. But work on all had not progressed uniformly due to the inability of the officer to designate a suitable trainer for each horse, to control absolutely the attendance and due also to the unequal interest to the troop commanders and also to other circumstances over which no one had control such as sickness, guard duty, and detached service.

On January 19, 1917, some transfers of men were made into and out of the troop in order to get men to replace recruits and

those found to be physically or tempermentally unsuited to the handling of young horses.

The portions of the Cavalry Drill Regulations beginning with Par. 928 and dealing with the subject of "training remounts" was taken as the guide upon which to regulate the training.

All horses were put through the first period, or preliminary exercises not mounted and required to perform in a satisfactory manner before going to more difficult exercise.

The work was carried on very slowly for several reasons:

1. The first basic principal of horse training is acquiring the confidence of the horse and the first effort was made to establish this beyond question.

2. It was desired to establish firmly in the horse's mind the first lessons so as to obviate a later return to them.

3. A very great reason was, that work of this character was new to all but a few men of the troop and it was desired to give them a thorough grounding in the principles and methods involved and to consume enough time in doing it for the lessons to become fixed.

In a short time it became possible to divide the horses into two classes according to their condition and the state of progress of their training. Then by March 1, 1917, the class "A" horses were prepared to take the Third Period while the class "B" were still in the Second Period.

It had been planned to have the class "A" horses ready for issue June 1, 1917, and the class "B" July 1, 1917, but the receipt by the regiment of many other remounts caused a premature issue on April 5, 1917, of forty-seven of the original lot. But as they were calm horses and well along in their training they will probably go into the ranks of their new troop and remain unnoticed except for small slight additional care to be given in the use of arms, jumping and conditioning.

Training follows and is dependent upon conditioning. Vices such as pulling, rearing, refusing at jumps, can be developed very easily by making demands upon the young horse beyond his physical capabilities and continuous overwork during his training period may shorten his period of usefulness even to the point of years. When he is sent to the ranks of the troop he should arrive sound, spirited, tractable, without blemish and without defect.

Any logical system of training must give prime consideration to the above, so when horses are prepared for shipment at the Remount Depot, only those should be selected that are capable of being brought into reasonable condition in six months. The regiment in peace times had less than a thousand horses and with the ten percent. wastage allowed by War Department orders can expect not more than fifty horses semi-annually. Ordinarily the remount troop can handle more, say seventy-five, but occasionally horses wil be found that will not become fit for issue in six months, others will develop vices after issue and need retraining; and the troop could sometimes do special work such as training polo ponies, horses for local shows, etc.

Remounts should be received semi-annually so that they can be divided into classes which will permit closer supervision on the part of the officers and highly trained non-commissioned officers and a methodical progression based upon a schedule for groups rather than what is more likely to be the haphazard and uncertain training of the individual. It is reasonable to believe that at the end of six months the entire lot barring those delayed by accident, sickness or other incapacity, could be issued to troops to make room for new lots of fifty just arriving.

Great latitude should be allowed the captain in his selection of men from the other troops of the regiment, even from the recruit troop. Our first thought is that the man of the remount troop should have a strong seat and while it is of course desirable he should not be merely a man of strong seat and nothing else. There are other qualifications as essential. His seat must be strong enough to permit him to transmit his wishes through the aids in a clear and unmistakable manner and his seat must be firm enough not to cause him to hurt his horses mouth but he need not be a "bronco buster." He must have good habits so as to be present and in shape to work his horses daily. He must follow to the detail the methods of the Drill Regulations in handling his horse. He must possess unlimited patience and sympathy with his charge and be content with a trifle of progress each day. There are many times when he is away

from the glance of his officer or non-commissioned officer and he must be worthy of the trust they repose in him.

The Cavalry Drill Regulations cover the matter of training remounts and there should be no departure therefrom. The system has proved itself. When troop commanders receive young horses from the remount troop they should know exactly what to expect in the way of training and conditioning, powers and capabilities. On the other hand it is the duty of the remount troop to supply the others with trained, conditioned, and capable horses so that the education of the unit for war can be carried out unhampered or unchecked by weak, unruly or untrained mounts. Surely this means a much higher state of efficiency for these troops and for the regiment.

C. LININGER,
Major Field Artillery, N. A.

MORE TEUTON CAVALRY.

FRENCH FRONT, December 14.—Trench warfare has not diminished the German cavalry forces, as had been generally supposed, for information which has just reached the correspondent of the Associated Press shows the total of squadrons in the service to be even higher than it was at the mobilization of 1914. Changes, however, have been introduced in the mounted arm of the service by which some of the squadrons temporarily have been dismounted and utilized as infantry, while the formations have undergone considerable variation.

At present the German army has at its disposal no fewer than 649 squadrons of cavalry, comprising active, reserve, mobile ersatz, landwehr and landstrum units, but of these 144 have been separated from their horses and used as infantry. This figure compares with 440 squadrons on a peace footing.

When war began the German cavalry was at once formed into eleven divisions, each composed of six regiments of four

squadrons. Besides those, there were also the bodies of divisional cavalry attached to the active and reserve divisions of infantry. Roumania's entry into the war made more cavalry formations necessary and the number of organized divisions was at once increased to fourteen.

The spring of 1917 saw the end of the Roumanian campaign, and with this came a decrease of the divisional formations to six while the divisions themselves were reduced from six regiments to four each. At the same time independent brigades of mounted troops were formed, of which the existence of at least five is known, each having three regiments of four squadrons each.

Nearly every infantry division is also provided with a unit of cavalry whose strength varies according to the nature of the country in which the troops are operating.

From among the cavalrymen who, temporarily, are not employed on mounted duty at the front, twenty-three regiments of riflemen have been formed, which take their turn in holding trenches with the ordinary infantry formations. Each of these regiments is composed of four squadrons and a squadron of machine gunners.

Besides these other units of cavalrymen selected from the regiments of the active army are from time to time used as infantry, but their exact numbers are not ascertainable.

REGIMENTAL RECRUIT AND REMOUNT TROOPS.

EXPERIENCE in having Regimental Recruit and Remount Troops has by its results confirmed the wisdom of the policy. The results are so self-evident that argument seems hardly necessary. The twelve to fourteen weeks of intensive training for the recruits and twice that time for the remounts eventuates a turning into ranks fairly capable troopers to ride fairly well trained horses. That means that man and horse are so qualified for the work before them that there is no fussing

and jigging on the part of the horse and no nervousness and foolishness on the part of the man. The horse's service-life is materially lengthened and the trooper has received such training that he is not only satisfied with his performances but is content with his surroundings. Here is where the great economical value of the system accrues to the government: Fewer desertions, longer animal service, and in general a more efficient cavalry unit (man and horse).

The whole system is founded on:

(*a*) The selection of high grade officers to command the troops;

(*b*) The putting of new men on well trained horses; and,

(*c*) The putting of well trained men on new horses.

One of the most important features of the work is the special and valuable instruction given to those who participate in the training. In these schools (Recruit and Remount Troops) first class instructors are developed for use in the other troops of the regiment. The two troops should work in close coöperation In the Thirteenth Cavalry the commanding officer of the Remount Troop preferred troopers hardly graduated from the Recruit Troop to others for use in his training troop.

Special attention is invited to the methodical, reasonable and effective methods followed in this regiment by Captains Lininger and Merchant as shown in their reports attached hereto.

Without some such system it is not credible that we would ever have properly trained troopers or horses. Our past experience confirms this. Few officers are well qualified for training or developing men and horses and the proportion of non-commissioned officers is still smaller. To turn men and horses into their troops for their training is a sure guarantee that their future development will be wanting in consistency and thoroughness.

In the system under consideration the training is uniform and thorough. To utilize one-sixth of a command to provide the other five-sixths with properly trained men and horses is not paying a high price.

HENRY T. ALLEN,
Major General N. A.

Editor's Table

THE CAVALRY.

[*Communicated.*]

While it would be an ungracious act to point out to the War Department at this critical stage in our military affairs, its undoubted mistake in rushing to conclusions as to the uselessness of cavalry divisions in Europe; and of converting a number of cavalry regiments into field artillery in the first hysteria of preparation, it is now very gratifying to those military experts of all arms who have been broad enough in their observations to see *beyond* the present trench-warfare, that our military policy with respect to the cavalry is about to undergo a change.

The Pershing Expedition into Mexico proved the cavalry arm to be the only arm which could successfully operate south of the Rio Grande, *aggressively*. Without reflection adversely on our brothers of the infantry and field artillery, they were simply armed guards of camps and communications in Mexico; the engineers proved good road builders only; and the aviation corps failed to render only notable service. It was the cavalry alone which secured results; and had armed resistance to our forces continued, the brilliant handling of our cavalry would undoubtedly have been still more in evidence. Comparisons are odious, but so much has of ate been said as to the archaic uselessness of cavalry in the light of aeroplanes, motor-trucks, and other present day mechanical devices for increasing mobility and celerity of action by troops not classified as "horse

soldiers," that the lessons of northern Mexico should not be overlooked.

It is a far cry however, from Mexico to Europe and the voices of those who discountenanced the conversion and emasculation of our cavalry, were as "those crying in the wilderness." The fact that vast numbers of cavalry were being held in rear of the lines of both great opposing forces on the Western Front, was either unknown or disregarded; the tactical lessons of Galicia, of Mesopotamia, and of Northern Italy has not yet been written. Cavalry officers were expected to apologize for wearing the insignia of such an obsolete arm; and many brilliant officers of wide experience and mature judgment, in the handling of cavalry were forced to witness the appointment to general rank, of juniors belonging to a more popular arm.

It is therefore, gratifying to see, that on the recommendation of the general who so brilliantly handled cavalry in Mexico, and who, like Field Marshal Sir Douglas Haig, still believes in its efficacy in Europe, our war Department will organize cavalry divisions, and will possibly utilize for this purpose, the half-baked field artillery regiments of cavalry origin.

No time should be lost; good cavalry cannot be improvised at short notice, even if adequate equipment be ready; and it has been one of the unfortunate lessons of the war, that the improvisation of equipment at short notice, is quite as great a problem as that of making trained soldiers.

All honor then, to our cavalry, which either in Mexico or in Europe, will ever prove itself worthy of the best traditions of its splendid past!

A NEW PROJECT BY THE GENERAL STAFF

The present war has demonstrated that training must be thorough if success is to be expected. Heretofore great emphasis has been laid on the tactical training of organizations. Now each soldier must be a specialist and at the same time he must have a general knowledge of the duties of other specialists in his company, troop or battery.

The expansion of the army has introduced a large number of leaders who need to know something about the duties of the other specialists. As in general they are working to the limit of endurance and as time is a vital factor, it is necessary to devise some method to give them an idea of what is being accomplished in the other branches of the service.

The majority of these Reserve Officers, now assembled in large camps are often called upon to instruct on subjects new to them. They study the regulations, but often differ among themselves in their interpretations of them. It is therefore necessary that a method be devised by which instruction can be standardized.

The Training Committee of the Army War College has decided to use motion pictures as an aid in, and to standardize the instructions of the army. The Commanding General of each cantonment has been supplied with one reel on each of the following subjects:

1. Courtesy and Discipline.
2. Bombing.
3. How to Shoot.
4. Physical Drill.
5. Manual of Arms.
6. Bayonet Fighting.
7. Pistol Shooting.
8. School of Squad.
9. School of the Company.
10. Gas and Gas Masks.
11. Arm Signals for Infantry.

These pictures were taken at West Point. Reports from the various cantonments upon their instructive value verify the judgment of the Training Committee, Army War College. Most of the Division Commanders already realize the assistance of this method and are fully availing themselves of every opportunity to use these pictures.

The experimental stage having been successfully past, other reels are soon to be prepared at the Infantry and Artillery Schools at Fort Sill. These picutres will be included in the schedules of instructions. It is sincerely hoped that they will standardize the instructions at the various cantonments with that of the Service Schools. One Staff Officer at each camp is usually detailed to conduct all exhibitions of these pictures.

He becomes so thoroughly familiar with them that he can call attention to the *meat and pith* of each picture. In order to maintain interest, it has been found from experience desirable to show three reels during a performance; two on military subjects and one not essentially military but purely educational or classified as comedy or tragedy.

The tentative program outlining the subjects to be covered and where the pictures are to be taken is as follows:

TENTATIVE PROGRAM.

Reels to be prepared.

At Fort Sill:

U. S. Rifle, Cal. 30, Model 1903.
U. S. Rifle, Cal. 30, Model 1917.
Stokes Trench Mortar.
The 37 mm. Gun.
Chauchat Automatic Rifle.
Browning Automatic Rifle.
Lewis Machine Gun.
Vickers Machine Gun.
Browning Machine Gun.
Rifle Grenades.
Target Designation (Infantry).
Trenches—Revetments—Obstacles.
Demolitions.
Telephones.
Nomenclature and Care of Pistol.
Nomenclature and Care of Revolver.
Infantry Equipment.
Gas.
Aeroplanes.
Gun Drill (Artillery).
Fire Control Artillery.
Bayonet, Advance Reel.

At Fort Oglethorpe:

First Aid.

At Fort Riley:

Sanitation.
Horseshoeing.
The Mounted Soldier.
Equipment (Cavalry).
Care of Saddlery.

At Fort Leavenworth:

Map Reading.
Map Making.
Battle Maps.
Orders.
Patrolling.

HEADQUARTERS EIGHTY-NINTH DIVISION NATIONAL ARMY.

CAMP FUNSTON, KANSAS,
30th October, 1917.

The Editor:

DEAR SIR: The Military Service Institution of the United States grew out of a meeting held in June, 1878, by General Stanley, Genera Fry, General Rodenbough and Colonel Lieber, requesting the presence of officers of the army at a meeting to be held in the Army Building to consider the practicability of forming an association of officers similar to the United Service Institution of Great Britain. The plan contemplated professional improvement and a discussion of professional topics, with the resulting interchange of views. Its ultimate object was to promote the efficiency of our officers, and consequently, of our army.

At the first meeting some forty officers answered the call; committees were appointed and a report was drawn up and the Institution established with General Hancock as President, and under his direction it grew rapidly. For twenty years the Institution had but three Presidents. Its growth was steady and its field of activity very considerable and its influence beneficial.

In 1880 the *Journal* of the Institution made its appearance. It contained articles by General Schofield, General Fry, Genera Crittenden, General Merritt and Colonel Lieber.

In June, 1885, the Institution was formally incorporated under the laws of the United States. Among the charter members were General Hancock, General Fry, General Crittenden, General Merritt, General Rodenbough, General Abbott, General Glosson, General Gardner, General Gillespie, General Michie, General Webb and General Whipple. In the articles of incorporation it was stated that:

"The particular business and objects of said society shall be of a literary, historical and scientific character, and contem-

plate professional unity and improvement by correspondence, discussion and the reading and publication of essays, the establishment of a military library and museum and generally the promotion of the military interests of the United States."

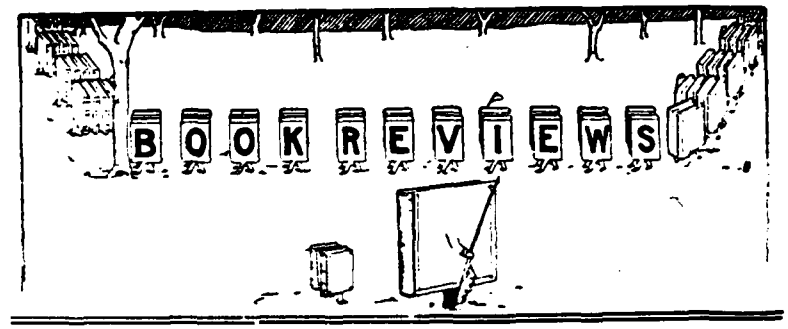
The Institution has done much to stimulate interest in a study of military questions and has striven hard to support the best interests of the service. Unfortunately of late, however, interest in its continuance and upbuilding seems to have waned and just at present the Institution, established as it was by some of our ablest soldiers, is in a condition as to render it necessarry to discontinue its publication and practically close up the activities of the Institution. It seems a great pity that there should not be sufficient service interest to keep the Institution alive, continue its publication and amplify its activities. It is almost the only service publication that is not devoted to one particular arm of the service. It is satisfactorily located and could, with very little effort, be continued. Its continuance would meet the best interests of the service and would result in carrying to an accomplishment the purpose of its distinguished founders. The time has come when it must receive a larger measure of support from the army or terminate its active career.

I shall very much appreciate your publishing this letter with a view of inviting attention of the service to existing conditions. I feel that there is a deep interest throughout the army in the continuance of the Institution. It can only continue, however, through an increase in the endowment, resulting in a sufficient income to maintain the publication, or through an increase in the subscriptions. Assistance in both directions is desired and the attention of the service is invited to the desirability of giving appropriate support to the movement to rehabilitate and continue this most worthy enterprise.

Communications should be addressed to Brigadier James N. Allison, Governors Island, N. Y.

Yours truly,

LEONARD WOOD,
Major General, U. S. Army,
President.



Life of Gen Chaffe *

We can do no better, in describing this most interesting book, than to quote from the author's foreword:

'We pride ourselves in America upon the fact that the door of opportunity is never closed to genuine merit. Yet it has remained for the present generation to witness the solitary instance in which a soldier risen from the ranks of the Regular Army has been honored with the highest military office in the gift of the nation. Not for this exceptional fact, but because of his long and remarkable career in arms, the life-work of Lieutenant General Adna Romanza Chaffee deserves to be made of record that future generations of Americans may comprehend what men of his time endured for the nation's sake. His rise from the lowest to the highest rank in the American Army was due to no extraneous influence, but came as a just reward for meritorious achievements in competition with an exceptional body of men.

* * * * * *

"In the preparation of the life-story of General Chaffee it has been the constant endeavor to present an honest and

*"THE LIFE OF LIEUTENANT GENERAL CHAFFEE." By Major General William Harding Carter, United States Army. The University of Chicago Press, Chicago. 260 pages, 16 half-tone inserts. Price, $2.50, postage extra.

unpretentious representation of his service, as substantiated by the records, and to avoid entirely the tempting realms of speculation. With the lapse of years dangers are forgotten and the memory of hardships is mellowed; yet when the country was supposed to be in a state of profound peace the little frontier garrisons, which made the settlement of half a continent possible, unostentatiously went about their work of carving the path of an empire without expectation of other reward than a consciousness of duty nobly done. During the quarter-century of Indian wars following the close of the Civil War no officer was more uniformly successful than General Chaffee. His subsequent military career in Cuba, China, and the Philippines served to fill some of the most interesting pages of his country's history. His civil career subsequent to retirement rounded out the closing years of a well-spent life."

* * * * * *

Veterinary Pharmacology and Therapeutics.*

I am sure this work will be welcomed in the profession, particularly its chapters on Pharmacy, Pharmaceutuic Methods, Dispensing, Pharmacy Proper, Prescription Writing and Introduction to Pharmacology.

The profession has been rather lax in compounding its own preparations and especially in dispensing There is nothing that appeals more to a client than the receiving of a neatly put up package; the extra trouble brings worth and value to the article.

Most of the prescriptions are well calculated, show thought and are valuable for use. The other subjects are not treated with any additional knowledge to that which has already appeared in similar works, and perhaps some of the drugs are not sufficiently elaborated.

DANIEL LEMAY,
Major Veterinary Corps, Retired.

*"PRACTICAL VETERINARY PHARMACOLOGY AND THERAPEUTICS." By Howard Jay Milks, D. V. M., Professor of Therapeutics, etc., New York State Veterinary College at Cornell University, Ithaca, N. Y. The Macmillan Company, 1917. Price, $4.25.

Data Book *

This little book fills a long-felt want with the Field Artillery Officer, Chief of Section, and Battery or Headquarters Special Detail men.

It contains slips for recording firing data in the most approved way, panoramic sketch slips with lines and headings, according to the latest School of Fire methods, also regulation field message blanks with carbon duplicates and graduated scales for sketching. There is provided a number of blank sheets for such notes as one desires to make from time to time, and in addition to this there are several sheets of formulae, telephone tests and signal codes which are valuable for reference. The book contains a Battery Commander's Ruler on the outside of the water-proof cover with string attached, which is handy in making the panoramic sketch, when graduated glasses are not available. The beauty of the book is that it never wears out, as it may be refilled from extra pads carried in the bedding roll.

It should be very popular in the service.

French Terms.†

This small pocket manual has been carefully prepared and fills the need of our American Field Artillerymen, for a book covering essential Field Artillery words and terms. Many such books have been written for the service at large but none have contained this most essential data for the Artilleryman whose close association with the Field Artillerymen of France will be most intimate in the use of the French Seventy Fives and Conduct of Fire.

*"FIELD ARTILLERY DATA BOOK AND FIELD MESSAGE PAD." Compiled by Major W. F. Sharp, Field Artillery, United States Army. The R. E. Davis Printing Company, Leavenworth, Kansas. Agents Book Department Army Service Schools, Fort Leavenworth, Kansas. Price $1.00; extra pads 75 cents.

†"SEVEN HUNDRED FRENCH TERMS FOR FIELD ARTILLERYMEN." By Edward Bliss Reed, formerly Regimental Sergeant Major Tenth Field Artillery, N. G. Conn. Instructor in the Reserve Officer's Training Corps, Yale University. With a foreword by Lieutenant Colonel Robert M. Danford, Three Hundred and Second Field Artillery. Yale University Press, New Haven, Conn. Price, $0.50.

The book has the additional advantage of having been proof-read by Major Durette and Captain Dupont of the French Field Artillery, at present on duty in this country. The book should be in the possession of every field artillery-man in the service.

Topography and Strategy.*

This book is an analysis of the topography of each of the most important theaters of war and points out how military operations have been influenced by the topography of the country, with the final conclusion that with all of the modern implements of war, the aeroplane, long range cannon, etc., the lay of the land still plays an important role, as in the past, of determining the final outcome, other things being equal.

The author exhibits a keen interest in things military and his work should prove of very material interest to the military student, as well as the general public. It is profusely illustrated with some special twenty maps and numerous photographs, and covers the World Conflict in a topographical and general historical way up to the entrance of the United States in the war.

War of Positions.†

This is a most excellent volume by a French Officer of experience written more especially for military men, but of much interest to the lay-man, dealing with the tactics of trench warfare and covering the subject very thoroughly with the roles of the different arms of the service in the attack and defense of a position. It should prove of especial interest to those officers who have not yet had the privilege of observing the tactics of the French Army in trench warfare, at first hand.

*"TOPOGRAPHY AND STRATEGY IN WAR." By Douglas W. Johnson, Associate Professor of Physiography, Columbia University. Henry Hett and Company, New York. Price, $1.75, net.

†"THE WAR OF POSITIONS." By Lieutenant Colonel Paul Azan, Litt. D., French Army. Chief of the French Military Mission at Harvard University. With a Preface by Major General J. E. Kuhn, U. S. A. Harvard University Press. Price, $1.25, net.

Nursing in War.*

This small book contains the principle facts of surgical nursing as practiced in the Great War. The information has been gathered from various periodicals, books and letters from the front. The text is well written and is illustrated with thirty-seven drawings. It is a valuable book, not only for those nurses who contemplate service in war, but for all nurses. The chapter on "Bacterial Invasion and Immunity" is very clearly stated.

Handbook of Antiseptics.†

The authors have produced a pocket lexicon containing all of the essentials necessary for an understanding of the chief chemical antiseptics used for surgical purposes during the present war. It is divided into eight chapters as follows: General Introduction, Chlorine Group, Phenolic Group, Salts of the Heavy Metals, Dyes, Miscellaneous Anticeptics, Methods of Testing Antiseptics, Certain Special Applications. The eighth chapter contains a section on "The Disinfection of Carriers."

*"SURGICAL NURSING IN WAR." By Elizabeth R. Bundy, M. D. P. Blakiston's Son & Company. 1917.

†"HANDBOOK OF ANTISEPTICS." By Henry Drysdale Dakin, D. Sc., F. R. C., F. R. S., and Edward Kellogg Dunham, M. D., Emeritus Professor of Pathology University & Bellevue Hospital Medical College, Major M. R. C., U. S. Army. The Macmillan Company. Price, $1.25.

Trench Warfare.* This little book vividly describes the spirit of infantry and should be read by all officers who have been recently commissioned or who have been transferred to the infantry. Its technical character is varied by interesting psychological experiences and conclusions of the author. The psychology of discipline, a thing the new American officer is apt not to understand, or to give the proper value, is understandingly discussed. It is a message from one democratic soldier to many now in the making.

Tanks, Gas, Etc.† An indexed manual of interest and value by an officer who has evidently seen much of the war.

The subjects are thoroughly covered and many cuts and illustrations make them quite clear. Enemy's methods and material are explained and illustrated. Chapters on trenches and explosives are also added.

It is the most recent, exact and informing manual on the subject to come from "over there."

*"THE ATTACK IN TRECH WARFARE." By Captain Andre Lafargue, *One Hundred and Fifty-third Infantry, French Army.* Translated into English. D. Van Nostrand & Co. New York. Price fifty cents.

†"TANKS, GAS, BOMBING, LIQUID FIRE." By Captain S. A. Dion, Canadian Expeditionary Forces. George U. Harvey, 102–109 Lafayette Street, New York. Price, $1.25.

BOOK NOTICES.

"THE FLYERS' GUIDE." By Captain N. J. Gill. An up-to-date, practical and theoretical points of flying are thoroughly and interestingly covered. It contains much valuable advice and many helpful suggestions for the novice, as wel as the flyer more advanced in the art. E. P. Dutton & Co., New York. Price, $2.00.

"FIELD TELEPHONES AND TELEGRAPHS FOR ARMY USE." By Captain E. J. Stevens, R. A. It is an exceptionally clear and concise treatise on the telephone and buzzer as used in field work. It is recommended as a valuable publication.

"A SHORT ACCOUNT OF EXPLOSIVES." By Arthur Marshall Chemical Inspector Indian Ordnance Department. This is a treatise on the various powders, fuses, grenades and high explosives with an explanation of their manufacture, use, care and storage. It is a valuable book of reference for the student of explosives and also for the officer who may be called upon to care for and store large amounts of explosives in the field. It deals with American as well as British powders, fuses, etc. P. Blankiston, Son & Co., Philadelphia, Pa.

"GRENADE FIGHTING. The Training and Tactics of Grenadiers." By Lieutenant C. Dyson, Brigade Grenadier Officer, B. E. F. This is a small book of fifty-one pages—4½ x 6 in. It presents a concise and practical course in the training and tactics of grenadiers. All types of explosives are described; detonators and fuses are explained. Other subjects covered are the manufacture of improvised bombs; the mechanism of ser-

vice grenades; the duties of "Throwers" and of observers; barricade making, etc.

Grenade Fighting will prove to be a valuable book on this comparatively recent method of conducting warfare.

As the war progresses methods may change but many of the essentials covered in this book will remain. George H. Doran Company, New York. Price fifty cents net.

"WHAT EVERY SOLDIER SHOULD KNOW." By Captain T. J. J. Christian, U. S. Cavalry. This book is a comprehensive compilation of essential military information for the United States soldier. It contains the following: Military record, mail for forces abroad, the soldier's guide to French, clothing, equipment, care of the rifle, rank and precedence of officers, field intrenchments, sketching, etc., etc. Franklin Hudson Publishing Co., Kansas City, Mo. Price, $1 00.

"BUGLE SIGNALS, CALLS AND MARCHES. For the Army, Navy, Marine Corps, Revnue Cutter Service and National Guard." By Lieutenant Daniel J. Canty, Ninth Massachusetts Infantry, N. G., and Instructor of Buglers for Service Schools. Oliver Ditson Company. This is a compilation of which the title gives an idea of its contents. It is a paper bound book—4½ x 6 in. Price fifty cents.

"FIELD BOOK FOR MACHINE GUNNERS." By Captain Cole. It covers a live subject in a direct and concise manner. We have not had enough written on machine gunnery in our country and this book will do much to fulfill a need for our army. Franklin Hudson, Kansas City, Mo. Price $1.00.

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LIEUTENANT COLONEL EZRA B. FULLER, U. S. ARMY, RETIRED,
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WHAT HORSE FOR THE CAVALRY.

BY VARIOUS OFFICERS.

Brigadier General William H. Hay, National Army:

I FAVOR a service horse between 15–1 and 15–3 provided conformation, etc., are satisfactory. My preference is based on experience in the field. Occasionally horses as small as 14–3 of exceptionally good conformation are found which will carry the weight of rider and pack and are also heavy enough to meet all the requirements of a good service horse. As a rule, however, a horse smaller than 15–1 and weighing less than 975 pounds, will not meet all the requirements of the cavalry service though they might be all right for mounted infantry.

I have had no experience with the Arab type either as owner or as observer.

I would be satisfied with either of two types of horses. First, the three quarter bred of the Virginia hunter type out of any good sound stock.

Second, the three quarter standard bred.

My preference for these two types of horses is based on long experience in ownership and observation of both types.

Both types have the build, weight, speed, endurance and hardiness necessary to stand the wear and tear of field service. They are both free from the defects of the pure thoroughbred or standard bred.

I have owned and ridden a thoroughbred Virginia hunter under field conditions, and have observed a large number of thoroughbreds, mostly of the racing type, under the same conditions. Horses of the thoroughbred race horse type are not fit for field service. They are high-strung, sensitive to extremes of weather, prone to injury and require full rations. They do not know how to forage for themselves. So far as my experience and observation go, I would condemn them as a type absolutely for field service. The Virginia hunter— I am now speaking of the best type—is an excellent service mount except that they require more forage, on account of their size, than other horses and they cannot remain fit for service on short rations.

The question of the proper type of horse for the cavalry service goes deeper than the mere consideration of the horse itself. We cannot intelligently discuss the best type of horse for cavalry until we agree upon the requirements that the animal will be called upon to fulfill. There is, I regret to say, a good deal of what I consider heretical opinion still held by many cavalry officers in regard to the future role of cavalry.

Some consider that it is in reality mounted infantry; others would be scandalized if accused of holding such an opinion but are so obsessed with the idea that the cavalry charge is a thing of the past and that cavalry will always act dismounted that they in effect would reduce the role of cavalry to that of mounted infantry. If such views are to prevail then the only function of the horse is to carry his rider and his pack to the point where dismounted fighting is to take place. The true cavalry doctrine, in my opinion, is this:

Our cavalry must be trained to be the equal of the best cavalry in mounted combat and to be as good in dismounted combat as the best infantry.

The requirements of cavalry training fix the requirements the cavalry horse must fulfill. The principal of these are:

(*a*) Ability to carry the weight of rider and pack over long distances.

(*b*) Ability to move at speed for short distances, to surmount the ordinary obstacles, such as ditches, low fences, etc., usually found in riding across country and to make a charge when the enemy is reached.

(*c*) Ability to maintain his strength and flesh under the vecissitudes of a campaign when rations are frequently short and irregular and when often grazing is the only means of obtaining food.

(*d*) An equable, unexcitable temperament.

(*e*) Sufficient speed and weight to meet and overcome hostile cavalry in the charge.

(*f*) Gaits such as will enable him to conform to those of the ordinary route march without urging or "jigging."

The thoroughbred of the Virginia hunter type is the only one within my knowledge which comes anywhere near meeting all these requirements and he fails in requirements (c), (d) and (f). Practically all thoroughbreds are slow walkers and their natural gallop is too fast. As the walk is used by marching cavalry than any other gait, no animal which cannot walk at least four miles per hour without urging should be allowed in a column if it can be avoided. This applies with especial force to officers' mounts.

During my service I have owned and ridden in field service, in addition to two or three animals that may be called just horses, the following animals:

(1) One Kentucky saddle horse, 16 hands, weight about 1,100 pounds.

(2) One half or three quarter bred Winnemuccer (Oregon), 15–2, weight 1,060 pounds.

(3) One three quarter bred Texas horse, from the Cabell farm, 15–2, weight about 1,050 pounds.

(4) Three three quarter standard breds. Two of these were a matched pair, 15–2 each, weight 1,030 and 1,050 pounds respectively. The third, a mare, was 15–3, and weighed about 1,080 pounds.

(5) One thoroughbred Virginia hunter, 15–3½, weight 1,080 pounds.

All of these were splendid animals of their type.

No. (1) had wonderful endurance but his high knee action and high strung temperament made him unfit for prolonged field service. He also lacked the power to stand being placed on short rations.

No. (5) would be in every respect a suitable service horse were it not that she requires to be well fed at all times. For riding at speed over rough ground with frequent obstacles I have never seen her superior.

The five horses included under (2), (3) and (4) were all excellent animals for any purpose. Of these the matched pair of standardbreds were the best. I have ridden them as high as 72 miles in 12 hours and have driven them to a buckboard as high as 180 miles in two days without injury. All five animals had excellent road gaits, were unexcitable, good foragers, and kept their flesh well.

It is a pleasure to ride a thoroughbred, whether it be a racer, a hunter or a gaited saddle horse, but I have yet to see a thoroughbred of any type, even that of the Virginia hunter (and a large number of each has come under my personal observation), which can be depended upon for such service as the cavalry on both sides had during the Civil War, our Indian campaigns or during the recent Punitive Expedition into Mexico.

Of the Arab I cannot speak from either experience or observation, but his very light weight, no matter how good his other qualities may be, puts him at a disadvantage when compared with equally good horses weighing from 200 to 300 pounds more than the Arab. In a charge, for example, he cannot compete with the heavier horse of say 15–2 in height any more than can the 14–2 polo pony compete with the polo horses in use today.

My opinion, based upon the above considerations, as to the best type of horse for the cavalry service may be restated as follows:

Type: Three quarter bred hunter or three quarter standard bred.

Height: 15–1 to 15–3, with occasional acceptance of especially good individuals not less than 15 hands in height.

Brigadier General J. G. Harbord, National Army:

As a general proposition I am in favor of a horse under 15–2, conformation proportioned to height. I believe there is more service as a weight carrier in such a horse; that he is more apt to be compactly built, will travel closer to the ground; and endure harder service.

I own the Arab stallion "Halim," now eleven years old, imported as a two year old by Colonel Spencer Borden, of Fall River, Massachusetts, this is one of the horses that figured in an endurance test near Fall River, ridden by Colonel Byram, several years ago, an account of which was written for the CAVALRY JOURNAL at the time. My impressions of the Arab are entirely favorable.

If the choice lies between cold-blooded, part thoroughbred, or the thoroughbred for cavalry service, I should say a half or three quarter bred animal would be the best for cavalry service. The thoroughbred strain would give spirit and heart, perhaps speed, while the common blood would make him less sensitive and nervous, more easily kept, a better "feeder," perhaps better adapted to weight carrying under service conditions. But if unlimited in choice a half or three quarter bred Arab would in my judgment be better than either of the foregoing.

I rode a thoroughbred in the Philippines, but not under conditions that could be called arduous. That particular animal was satisfactory.

In general I agree with Major Tompkins in his views as quoted in the *New York Hearld.* I do not see, however, that the Arab blood means a "non-galloping" horse. The blood that flows in the veins of all the gallopers is Arab originally. The particular one that I own gallops easily, most easily, for himself and rider, appears to enjoy it, and does it apparently in preference to a trot. He does trot well, however, and can walk five miles an hour. He is untiring, and the best dispositioned stallion I have ever seen.

Brigadier General Malvern Hill Barnum, National Army:

I think that the horses in cavalry service should range between 15–1 and 15–3 inches. I believe that the 15 hand horse is too small and that 16 hand horse is too large.

I have had no experience with the Arab type of horse, either as an owner or as an observer. I have seen some of them, but only so casually that my observations would be of little value.

I favor a horse for cavalry service which has some thoroughbred strain in him. It could not be less than one quarter and be given recognition, nor do I think that it should be more than one half. I believe that the cold blooded horse lacks the spirit and nerve which is desirable, and I also believe too much of a thoroughbred strain gives a horse that is too high strung and too delicate to stand the rough usage of the cavalry service, especially when in active service on the field.

I have never ridden a thoroughbred horse under arduous field conditions. The thoroughbred horse being short haired and thin skinned is more liable to minor accidents; I believe that he will be out of condition and on sick report a great many more days in a year than will be the one quarter or one half breed. I consider the cavalry horse as not only the means of locomotion for the cavalry man, but as a part of the striking force in the cavalry. I believe that cavalry charging against an enemy will occur only very infrequently, therefore the cavalry horse should be considered about as follows:

Nine tenths for purpose of transporting cavalrymen.

One tenth of use in case of a charge.

Colonel Francis Le J. Parker, National Army:

I incline to a horse under rather than over 15–2 and as near as practicable to about 15–1 or 15–2.

I believe experience to have shown that horses of this size have sufficient bone and muscle for carrying a cavalryman and his necessary equipment, can handle themselves more easily

on varied terrain than the larger horse, are more easily kept in good condition, and have enough speed and mass to give a good, all round cavalryman's mount.

I believe it to be a fact that at present, and for generations to come at least, 15–1 is more nearly the normal height of the horse than is 16–3; and that a larger proportion of 15–1 horses are well proportioned and of approximately uniform strength in their more vital organs.

As to the Arab horse it is only to a slight extent as an observer of four or five animals, which were given a pretty thorough test, extending over two or three years by an experienced horseman. The results impressed me unfavorably, but I did not regard the test as at all conclusive except as to the particular animals in question.

In the rather hap-hazard way in which the average trooper is selected for cavalry service, and incomplete and an uniform methods of training that have been employed in the past, I believe no one type of horse will suit all riders and conditions of service. For certain special types of service (*e. g.*, in very mountainous country into the kinds of trails that usually exist there), I believe small horses of the locality will usually give better results than the larger horse that would be more useful for average service. Disregarding special cases of this kind, my preference for the average cavalry horse would be, for troopers half bred, for officers three quarter bred. I believe the proportion of pure blood indicated in sufficient to give the average of courage, speed, etc., that will meet our needs, while breeding with other well selected types will tend to the protection of a hardier and less excitable animal. I have, however, had no experience whatever in breeding of horses, and the above impressions are the result simply of observation of the horses that have come under my notice.

Under conditions involving long continued service with long marches, scant forage, etc. No. In severe winter weather (N. W., U. S.) involving exposure for about seven to ten days, yes; also, under long continued ordinary conditions in camps, etc. Of two thoroughbreds so used during a period covering about three years, one (a gelding aged eight at end of period, height a little over 15–2, weight, (when in condition) about 1,040

pounds) appeared to have all the qualities of an excellent officer's charger, the other (a mare, about same age, height a little over 15–3, weight ordinarily about 1,025 pounds) was an excellent animal for ordinary steady use under conditions not involving hardship, but of uncertain temper, except when very regularly exercised. The gelding was exceptionally close-coupled for a thoroughbred, and of perfect disposition for work out of ranks, apt to become excited when in a group of horses to which he was not accustomed. Neither of these animals appeared unusually prone to disease or injury. The gelding was easily kept fat, the mare lost flesh considerably under any hard work. I believe the thoroughbred, while exceedingly intelligent and susceptible of high training when he can be advanced quietly, is much more easily ruined by poor handling and is unsuited for use by unskilled troopers or for training under conditions that demand haste in the course.

Colonel E. L. Phillips, National Army:

I prefer a horse under 15–2 rather than over; for the reason that I believe a horse of this size to be ample for the purpose, and at the same time more durable, easier to maintain under campaign conditions, more hardy and less expensive to procure, than horses of a larger type.

I have had no experience with Arab horses.

I am not committed to any particular breeding. For the practical use of our cavalry I believe the horse as he stands is the only essential question. If he is approximately right as to size, conformation, color and age, he is pretty apt to be a horse we are looking for, very anxious to get, and will make most excellent use of, whatever his history or breeding.

I favor the medium sized horse, from 15 hands to 15 hands 2 inches, short coupled, strong in bone and muscle, of large lung capacity, adapted to carrying heavy weight at moderate speed over long distances, and capable of enduring hard work on short rations, and of living partially at least on the country. Of course certain breeds, or certain mixtures of blood, might

produce horses of this type with greater certainty, but I am not well enough posted on breeds and breeding to state just what these should be.

I believe that we should frankly and freely proclaim the fire-arm to be the weapon of our cavalry—offensive and defensive; that our aim should be to multiply the terrible efficiency of the modern fire-arm by applying to it the greatly increased endurance and mobility which the horse in skilled hands can contribute to our action. We must attain the highest skill in horsemanship with our troopers—not with a view to the use "cold steel" nor the "horse as a weapon," but because the maximum of mobility under the difficult condition of campaign and the maximum of endurance on the part of both horse and trooper, can be realized only through the highest skill in horsemanship. I believe these should be the controlling ideas, when we come to selecting a type of horse for our cavalry.

I have never ridden a thoroughbred horse in the field.

Major Ben Lear, Jr., General Staff:

A horse 15 hands in height is preferred. Horses of that height are generally better made than taller ones; they are usually active, and good keepers. Enlisted men of the cavalry are usually of medium height. A small man should not be assigned a large horse. In the last troop I commanded only one horse was less than 15 hands, all others exceeded that height, the average being at least 15½ hands.

The type of horse I have in mind is one called a "cow horse"—not a "cow pony." This type of horse is occasionally found in New Mexico and Arizona, though most of the cattlemen's mounts are "cow ponies." When one finds a "cow horse" it's readily seen that it is a fine animal of about 14–3 to 15–1 hands in height, full barrelled, closely coupled and weighing 1,000 to 1,075 pounds. He costs the "cow men" from $150.00 to $250.00. Rather a high price, but they pay it for the right animal.

We do not want the 14-2 to 15-1 hands "cow pony." They remind me of the weedy thoroughbred.

Have had occasion to observe but one Arab horse. It was an officer's mount; and of the high strung, nervous type. Never admired it and always thought it unsuitable for a trooper's horse. This on account of it's nervous condition.

We want conformation and soundness first, and then *good breeding.*

Have never ridden a thoroughbred under arduous field conditions. Have seen two thoroughbreds that did stand hard field work, Captain I. S. Martin's "Christopher," and Major George W. Moses' "Prince." The former is the better horse. You are doubtless familiar with "Christopher's" conformation. While a trifle low at the withers, he has plenty of barrel, bone, muscle, and a good temperament.

Lieutenant Colonel Edgar A. Sirmyer, Cavalry:

I believe first in the horse of between 15 hands and 15-2. My experience under service conditions including seven years in the Philippines, and nearly four years on border patrol duty, only goes to confirm me in an early belief that the short legged, short coupled horse is the ideal horse for the cavalry. He grazes easier, he is fast enough for our work, and above all he is easier to handle than the tall horse and makes quick mounting and dismounting a pleasure at all times, and sometimes, a life saver.

Am sorry to say that my knowledge of the Arab is only obtained through consistent reading of the accomplishments of that animal here and abroad. He should be an ideal type.

I prefer first the three quarter bred and second the half bred.

The pure thoroughbred has no place in hard field service, and I have never seen one that the owner did not have to baby. He has the heart but not the constitution for hard work on little or non customary food. The cold blooded horse is so worthless that he requires no discussion. They are always the

first to go down in flesh under continuous hard work and irregular food. The three quarter bred has the heart of a thoroughbred, plenty of his speed and pride of condition but not his great sensitiviness, fastidiousness and inbred weakness. To my mind he is the ideal cavalry mount. I had several in my last troop from Virginia and no matter how hot and dusty the day or how hard or long the road, it was a pleasure to see him come in with his head up and his ears forward looking for more worlds to conquer. He is a good jumper, intelligent, light in the hand and so much cleaner looking in every way that his rider is always proud of him and therefore gives him the best of care.

Lieutenant Colonel George Williams, National Army:

I favor a horse over 15-2, but not over 16, for cavalry service. My reasons for that are, I believe that a horse with the proper conformation ranging between 15-2 and 16 hands, is a much stronger horse as a weight carrier, a better galloper, and better qualified to make marches at the rate of five or six miles per hour, than the smaller horse.

I had very little experience with Arabs, in fact the only one I ever saw was the one owned by Major Frank Tompkins, cavalry. I observed him for awhile in Mexico. While he undoubtedly stood the trip well, he had the advantage of being ridden during the hardest part of the campaign (that Major Tompkins refers to in his letter) at the head of the column, and in addition he had the advantage of extra care that officers horses always receive. I saw other horses in the same command that were over 15-2 in height, had been ridden in ranks, carrying the additional weight that men have to carry, that were in as good, if not better condition, than Major Tompkins' Arab. This is not trying to run down Major Tompkins' Arab, as I am an admirer of both horse and man.

I favor, first the thoroughbred, second the three quarter bred, third the half bred, fourth the one quarter bred, and if possible I do not want to have anything to do with cold blooded

horses. This does not mean that I believe all thoroughbreds, because they are thoroughbreds, are good horses, but do believe that take the same number of cold blooded horses, and the same number of thoroughbred horses, say three hundred of each, you will find that there are by far more good cavalry horses in the thoroughbred type, than in the cold blooded type.

I have never ridden a thoroughbred horse under hard field conditions for the simple reason I have never had money enough to buy a thoroughbred that I consider the proper type, though I have seen many. I have ridden a seven-eighths bred horse for a good many years, and am now riding and did ride in Mexico a three quarter bred horse.

Neither of these horses were unduly sensitive, prone to disease or injury or otherwise unsatisfactory as an officers charger. The seven eights bred horse is still living and now at the Mounted Service School. He is twenty-eight years old. I rode him continuously from 1898 until 1905, then he was turned out to pasture for two years while I was in the Philippines. I again rode him continuously on all duties, and in jumping, from 1907 until 1911. During this period he was on sick report twice, once with pneumonia when I came back from Cuba, and once he ran a nail in his foot. I understand he is still being used for light work at the Mounted Service School. Captain Richmond tells me as far as he knows he has never been on sich report since I gave him to the School in 1911. Name. "Chief."

The three quarter bred horse I rode in Mexico was sick when we started and lost weight rapidily the first three weeks we were in, however, I rode him almost continuously, and when we came out of Mexico in February of this year, he was in excellent shape, and is now. He has been on sick report since we came out due to a kick in the hock. He was an excellent forager in Mexico, eating everytime he had a chance and anything he could get hold of. Both of these horses stood 16 hands.

Colonel Henry T. Allen of the Thirteenth Cavalry took three thoroughbreds into Mexico with him; one was ridden continuously by his orderly carrying the usual weight an enlisted man has to carry. She was never sick but once and that did not "lay her up" for marching. She had the same sickness

that Major Tompkins' horse had, namely one case of colic. She stood slightly over 15–2. One of the other horses of Colonel Allen's was on the whole trip, but was lame for a short time on account of bruising his sole on the rocks, however, did not last long and he was again ridden. Was in most excellent shape when we came out of Mexico and still is. The third horse when not ridden by Colonel Allen carried his bedding roll.

Captain Clarence Lininger, Cavalry D. O. L. (then First Lieutenant, Troop "M" Thirteenth Cavalry) who was with Major Tompkins on his march to Parral, Mexico, made measurements of the horses that stood the campaign the best. He found in his trip that the horses 15–2 were the ones that stood the trip the best. For further information, both as to Colonel Allen's thoroughbreds, and Captain Lininger's measurements and experience, I would refer you to these two officers.

If officers ride small horses their gaits are not suited to the gaits of their command and therefore make it very hard on the troop animals. It is not believed that enough small animals of suitable conformation could be purchased to mount the cavalry. Of course it would be impossible to mount them on Arabs.

Colonel Samuel B. Arnold, National Army:

A horse between fifteen hands and fifteen hands two inches is preferred, but there are many good cavalry horses over 15–2, and under 15 hands that should not be turned down on account of their height.

The whole matter of height, within reasonable limits, should depend on the horse in question and his conformation.

I have had no experience with the Arab horse.

The cold blooded or quarter bred horse, provided, of course, that the horse has proper conformation, and is not like many of the clumsy mounts that are unfortunately found in the cavalry service.

Have never ridden a thoroughbred horse in the field.

Colonel George C. Barnhardt, National Army:

I favor a service horse not over 15 hands 2 inches in height with proportionate conformation.

My experience teaches that horses under 15½ hands stand hardship better than taller horses. They are handier and more comfortable than the leggy ones.

I have had no practical experience with the Arab horse.

I do not favor the cold blooded horse for cavalry service. I favor a strain of thoroughbred from one half to full.

The cold blooded horse, as a rule, lacks the vitality and staying qualities possessed by the stocky well boned near thoroughbred. Most of the thoroughbreds now in the service are not the type I favor, for they are generally animals purchased from the race track or that have been trained for racing when very young. They are consequently nervous and excitable and wear themselves out on the road. I must confess that the type of thoroughbred or part thoroughbred that I favor is not usually seen, the usual type being the weedy, small boned race horse.

I have ridden thoroughbreds on marches extending from four to seven days. One had been a race horse that I had worked with for two years trying to convert into an officer's mount and never succeeded in getting him broken of his nervous fidgety habit. The other was a three quarter thoroughbred, 15¼ hands, well boned and muscled, and never had been on the tracks. I rode him 200 miles with a squadron of cavalry, making the trip in six days. This horse showed less fatigue than any other horse in the squadron, and was most comfortable to ride.

Colonel George W. Moses, National Army:

In general, I wish to state that I believe Major Tompkin's horse is a model for mounted infantry. So far as the model type for cavalry is concerned, I don't believe that such type has yet been developed in our service.

But eliminating the tendency of our present thoroughbred type to bolt whenever the horses pass beyond the slower gaits, I believe the thoroughbred, large enough boned and so stockly built as to make them easy keepers is certainly the type we should try to develop.

I believe up to the present time the Morgan horse comes the nearest to fulfilling these conditions of any class of horse with which I have been personally acquainted.

The cavalry horse should certainly be of fifteen hands two inches in height in order to give sufficient weight and efficiency in the charge.

I have not had any experience with the Arab type either as owner or observer.

I have ridden a thoroughbred under arduous field conditions, but have not found him unduly sensitive, prone to disease, or injury, or otherwise unsatisfactory as an officer's charger, except in so far as results from his tendency to out-run all other horses in the cavalry charge.

Major George P. Tyner, General Staff:

I favor a service horse of from 15–1 to 16 hands, both inclusive. The small horse is worthless in mounted combat as it cannot throw enough weight in the charge.

The Arab horse is unsuitable for the reason given that he has not enough weight and cannot be obtained in sufficient numbers in this country to make it a factor in the stud. I have only seen the Arab for a short period of time as an observer. Have had no practical experience.

I favor thoroughbred sire and standard bred dam to get the best mount for the trooper. Any clean, strong, square gaited grade mare should be acceptable. For the officer I favor the pure thoroughbred, 15–3 to 16 hands, weighing 1,075 pounds or over. The officer's mount should have the appearance of standing about 15–2 but when measured the stick should show more than an inch higher.

I am today using a pure thoroughbred (by Imp. St. Dory, dam Egotism) that I purchased as a three year old nine years ago this month. He will do anything that comes up in a troop without any effort or excitement and do it every day although he raced as a two year old and as a three year old. Except for three years while I was in the Philippine Islands this horse has been one of my regular mounts. While on foreign service I had the horse on a farm near Junction City. My other mount is "Miss McClure" (by Ort Welles dam Sweet Billie) foaled April, 1910, and purchased from your School by Lieutenant Doak. Both of these animals have just finished a winter without blankets and neither had a sick day. Properly handled, the pure thoroughbred is the ideal officer's mount.

Colonel Samuel McP. Rutherford, National Army:

Am in favor of horses not over 15 hands 2 inches in height. Exceptions to be made of especially good horses over that height.

My experience, both before going into Mexico in 1916, and during my ten months' stay there, is that the smaller horses stood the work better, lost less flesh, and as a consequence, were less trouble with sore backs.

I have had no experience with the Arab horse, except what I saw of Major Tompkins' Arab stallion in Mexico. From my observation, I am of the opinion that this horse received more attention than practically any other horse in Mexico. Had he received the same treatment as to forage, etc., as some of the other horses, there might have been a different tale to tell.

It has been proven without a doubt that the cold blooded horse can take better care of himself than the thoroughbred, and the more thoroughbred blood in him the less able he is to take care of himself when forage is shy.

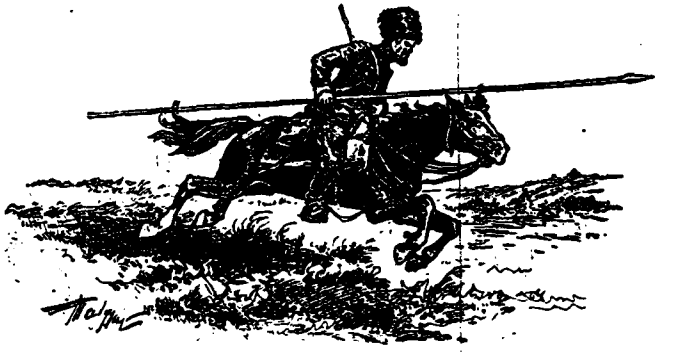
Another matter to be considered in connection with the

thoroughbred, is the care required, and the constant anxiety of the owner in this respect.

I have not ridden the thoroughbred horse.

I have been with a number of officers who were riding them, however, and from observation I am of the opinion that most of them were unduly sensitive and prone to disease.

A number of officers who took thoroughbreds into Mexico had to leave them at some camp and ride a troop horse.



THE LABORER WORTHY OF HIS HIRE.

TO urge upon Congress the importance of a good corps of officers with pay corresponding to their merit and sacrifices, George Washington, in the first year of the Republic, writing from Harlem Heights, on the 24th day of February, wrote the following truths which are as forcibly applicable to the situation of today:

"A soldier reasoned with upon the goodness of the cause he is engaged in and the inestimable rights he is contending for, hears you with patience and acknowledges the truth of your observations, but adds that it is of no more importance to him than to others. The officer makes you the same reply, with the further remark, that his pay will not support him, and he cannot ruin himself and family to serve his country, where every member of the community is equally interested and benefitted by his labors. The few, therefore, who act upon principles of disinterestedness, comparatively speaking, are no more than a drop in the ocean.

"It becomes evident to me then, that, as this contest is not likely to be the work of a day, as the war must be carried on systematically, and to do it you must have good officers, there are no other possible means to obtain them but by establishing your army upon a permanent footing and giving your officers good pay."

The above basic truths written at the birth of the Republic might have been enunciated one hundred and forty-one years later, at the beginning of the greatest war of its national life. Officers and non-commissioned officers have various degrees of additional responsibilities and special work according to their degree and rank. These special duties call for special education involving long years of preparation and much additional labor and responsibility. In every war, the percentage of casualties among officers and non-commissioned officers is markedly higher than among privates. In time of training, the percentage of illness from breakdowns and overwork also shows to a striking degree the effect of the extra work and responsibilities upon these selected men.

After much careful expert consideration, a scale of pay commensurate with the additional duties and responsibilities of the non-commissioned officers was fixed by Congress in 1908. The effect of this wise scale was shown in the resulting marked incentive to strive for promotion and the high class of men who reached and held the higher non-commissioned rank. The first army legislation for the great war was an increase in pay of all enlisted ranks, but so unequally distributed as to reduce by more than one-half the financial reward for the performance of the duties of non-commissioned officers.

The following table gives the new and old actual pay, and the percentage of additional pay over the base pay of a private, for the principal non-commissioned officers:

Rank.	*Old Pay*	*New Pay 1917*	*Old Additional Percentage over Private*	*New Additional Per centage over Private*
Private	$ 15.00	$ 30.00	.....	.....
Private 1 class	18.00	33.00	20%	10%
Corproal	21.00	36.00	40%	20%
Sergeant	30.00	38.00	100%	26%
1st Sergeant	45.00	51.00	200%	70%
Sgt.-Major	45.00	51.00	200%	70%

The vicious effects on discipline of this change of rate of pay have been apparent to every officer in direct contact with troops during the last three months. It is the inbred American habit of thought to measure the importance of a position by the salary attached. It is not only the money but the prestige and importance that attaches to a well paid position that counts. The one-hundred thousand dollars a year executive is held up to the American school boy as a model of power and the height of success. The boast of a fifty per cent. raise is the proudest proof of commercial efficiency.

Formerly a corporal promoted to the grade of sergeant measured his increaed importance in his own estimation and in the eyes of his fellows by the change from 40 per cent. raise to a 100 per cent. raise over his privates pay, and was duly inpressed and proud of it. Today this promotion means a raise of $2.00 or 6 per cent., which is less than the raise from a private to private, first class, and totally fails to compensate for the vastly greater training and responsibility required by the promotion. The situation is even worse with those over-worked non-com-

missioned officers, the company First Sergeant and Regimental Sergeant Major. These men have duties so exacting and of such wide responsibilities as to demand the highest character, strictest sense of duty, and closest application to routine and detail. In a military way, they are both chief clerks and foremen. Their duties call for practically the character and force of an officer without the higher educational requirements. A 200 per cent. raise over privates pay was a fair recognition of their services. At the outbreak of the war, the First Sergeants, and Regimental Sergeant Majors were as fine a body of men as could be assembled for their positions. The proof of the efficiency of this 200 per cent. raise system in attracting desirable men is that 95 per cent. of them now hold National Army commissions of the grade of Captain or First Lieutenant.

It is very difficult to obtain men of the same character to train for these positions in order to replace the men who have received commissions. The small additional pay does not compensate for the longer hours, closer confinement, and greater worry and responsibility of a First Sergeant. It is easier to serve as a sergeant. The same is true of promotion to all non-commissioned grades. It is a reversion to the conditions preceding the passage of the 1908 pay bill. First Sergeants request to be relieved from their positions and made duty sergeants and other non-commissioned officers deliberately commit offenses in order to secure their own reduction or are slack and indifferent from lack of interest or a preference for the relatively well paid and easy position of private first class. Many cases of resignations or deliberate misconduct due to this cause have come to the writer's notice. The actualities of the war are too remote to form an incentive to ambition in service in this country, and patriotism is interpreted rather as a willingness to charge a machine gun gloriously, than as an obligation to do a bit of drudgery, day in and day out, because he is the better man for the job can can handle the responsibility. The causes given for the increase of the base pay of privates from $15.00 to $30.00 were the great increase in wages in civil life and the high cost of living. Undoubtedly another factor was a lingering hope that this high wage would stimulate recruiting and perhaps render the draft bugaboo a dead letter or

at least, postpone its application. Whatever conditions made, a 100 per cent. increase in pay necessary as an inducement for the enlistment of a private, apply with equal force to the enlistment and maintaining of a man with the high qualifications suitable for a Sergeant or Sergeant Major, and he will not enlist or, if drafted, will not do the work unless he gets the pay. It is pennywise and pound foolish to close the legislative eye to that elementary fact.

The case of the commissioned personnel is even worse than that of the non-commissioned officers. Commissioned officers receive part of their salary in cash and part as an allowance of the use of a house and the actual fuel and light for it according to law. (34 U. S. Statute 1168). They do not receive clothing or rations as do enlisted men. The law provides that when no houses are furnished, that a money allowance be paid so that officers can rent and heat houses. (34th U. S. Statute 1169). The law even goes further and says that, if the officer is temporarily in the field as in Indian Campaigns, he shall not lose the right to house, heat and light for his family. (27th U. S. Statute 480). This allowance is a part of the legal pay and income taxes are assessed thereon at a valuation of $550.00 per year for a captain, and $760.00 per year for a Major.

Without any change in the law by Congress, the commissioned officers have suffered an actual reduction in income amounting to 25 per cent. through the decision of the War Department, abrogating the above right to house, fuel, and light, as follows:

> "Duty with troops in the field during present war is not temporary duty. All duty with troops of any kind in the field, at home or abroad during the present war, will be considered as not temporary duty in the field in contemplation of the Act of Congress, approved February 27, 1893, which provides that officers temporarily absent on duty in the field shall not lose their right to quarters or commutation thereof at their permanent stations while so temporarily absent. Under this decision no officer or enlisted man on duty in the field can have any official station elsewhere, within the meaning and contemplation of the laws and the regulations relating to the allowance of quarters or commutation thereof, but while on such duty his rights as to quarters will be as prescribed for field service."

The striking injustice of this decision is that officers who are fighting in France for their country, and even officers in

camp, training troops to fight, are at once furnished by a reduction of 25 per cent. of their pay, but officers on staff duty at Washington or on quartermaster duty, etc., get their old peace pay.

No pacifist could imagine a more discouraging handicap for officers than to punish them by a 25 per cent. cut in their pay as soon as they start to fight or to teach troops how to fight, while they have at the same time to meet an average increase in cost of food, clothing and necessities of over 50 per cent. The effect of this decision goes further and abrogates officers' peace time allowance for shipping their property, furniture, etc., at government expense or of storing it in government buildings during the war. This will cost the average officer $150.00 to $200.00 per year.

It is a fair estimate to say that the actual 1917 income of a commissioned officer is only 50 per cent. of what it was at the outbreak of the war in 1914.

The commissioned officer has to buy his own rations and clothing from his pay, while these are supplied the non-commissioned officer in certain fixed quantities without regard to the increased cost. The enlisted man therefore gets an automatic increase in pay with the rise in cost of commodities, while the officer has to meet the increase from his limited pay. The September report of the Bureau of Labor Statistics show that in three years flour has advanced 125 per cent.; corn meal, 89 per cent.; lard 78 percent.; and the average cost of all food purchased by the officer has increased 42 per cent. Leather shoes have advanced from $3.50 to $7.50, officers boots have advanced from $18.00 to $30.00 per pair, and leather leggins have tripled in price in three years while overcoats have gone from $55.00 to $80.00 in the last six months. All of these articles must be bought by the officer, but the corresponding article is supplied to the enlisted man without regard to increased cost of production. The severest blow though, to the officer, has been the War Department decision depriving the officers of house, fuel and light. In some cases, officers with their families left in government houses in the United States while they themselves were serving in France, and straining their financial resources to the breaking point to meet the situation,

have had their helpless and weeping families forced to vacate their houses and seek such shelter as they could. Others have had to store furniture and household effects at from $12.00 to $20.00 per month and send the family to live with relatives. No officer can give his whole time and thought to his duty for sixteen waking hours a day if he has the care and safety of his family and property constantly in jeopardy. It is his patriotic duty to sacrifice both himself and his family for his country, but so is it the duty of every citizen. How this duty is regarded is shown by the recent strike of 35,000 shipwrights and iron workers at San Francisco and Seattle. This strike tied up the construction of $150,000,000 work of government shipping and aeroplane construction. The results of this delay may yet cost thousands of lives of American soldiers. The reason given for the strike was the high cost of necessities. The wage scale demanded by these laborers for an eight hour day work were as follows, and increase of between 25 per cent. an 50 per cent.:

Boilermakers	$6.00
Machine hands	4.50
Riveters	6.00
Moulders	6.50
Pattern makers	7.00
Steam fitters	6.00
Laborers	3.50

The daily pay of officers is as follows for the first five years of service:

Second Lieutenants	$4.72
First Lieutenant	5.56
Captain	6.67

Further the officer has to buy coal, light, food, meat, bread, shoes, and pay house rent at exactly the same rate as these strikers. The strikers are reported to have practically won the scale of wages they demand, getting in addition double pay for overtime night work. The officer does night work regularly at least once a week in guard duty for twenty-four hours at a time and few officers have not had clerical duties in the last month requiring long hours at night. It is not necessary to mention the relative risk the officer takes of being crippled or

killed by the Huns or submarines as compared with the risk from street car and sewer accidents of the striking laborers.

Yet the mere thought of a strike or even a concerted protest by the disciplined army officers is unthinkable. They must depend on the aroused sense of justice of the country to correct their conditions.

The simple remedy is as follows:

(1) Give non-commissioned officers the percentage of increased pay over the base pay of privates as fixed by the Act of Congress of May 8, 1908.

(2) Restore to commissioned officers the right to house, fuel and light or a money allowance for same when these are not available. Make this allowance apply in time of peace or time of war, and equally in camp, post, or border duty.

(3) Give officers an allowance of one ration for each person actually dependent on them for support, not to exceed the number of rooms for quarters authorized by present laws for their respective grade.

(4) Supply each officer with an allowance of uniforms each year, gratis, as is done for enlisted men.

(5) Supply storage for officers' baggage and furniture until the close of the war, or else ship same at government expense to a place of private storage selected by the officer.

BOLO.

THE ARMY VETERINARY SERVICE.

BY MAJOR J. W. RAINEY, R. OF Q. A. V. C. BRITISH ARMY.

THE present work and organization of the Army Veterinary service afford a striking instance of what can be achieved in a short while when science is adequately assisted by finance and in other ways given facilities fairly completely to develop its latent possibilities. The existing war is the first recorded in military history in which the Veterinary Service of the Amy has been permitted and assisted to carry out a definite scheme of its own generation, and it is this fact which gives most interest to a critical examination of results as they stand today.

The British Nation has been blamed by other nations and by its own citizens for its disregard, in the past, of science, but the Royal Army Medical Corps and the Army Veterinary Corps of the present constitute a powerful argument for those defenders of British Sanity who maintain its capacity to adapt to practical needs ideas which other, possibly more imaginative nations have visualized more fully, but have not always in the last resort so completely developed. The old English proverb "Sharp's a good dog but Holdfast's a better" may perhaps be taken to express this national characteristic.

Primarily an Army Veterinary Corps must justify its cost on economic grounds. The humanitarian factor, although it plays an important part in the practical work of the Corps, cannot for purposes of war on a modern scale be held alone to justify the cost of so extensive an undertaking as the Army Veterinary Corps of the British Army of today.

It is not possible at this stage to draw up a balance sheet that would accurately or even approximately show what dividend the Nation derives from its capital outlay in this respect, but the following figures present, it is thought, a fair

prima facie case in favor of an Army Veterinary Service as an economic factor in war:

(*a*) The total wastage* among horses and mules of the British Forces at Home and Expeditionary Forces abroad, including losses from enemy gunfire and all other causes whatsoever, during the year ending December 31, 1916, amounted to thirteen per cent. of the total animal strength.

(*b*) The total wastage among horses and mules of the British Forces during the year 1912 (*i. e.*, during peace), amounted approximately to 14.80 per cent. of the total animal strength.

These figures mean that in spite of continuous losses from enemy gunfire, and from the inevitable chances and vicissitudes of war, the annual wastage among probably the largest number of horses and mules ever collected together has, during the last complete year of war, actually been less than the rate of wastage in time of peace. This notwithstanding the fact, bemoaned by humanitarians, that the bulk of the animals have been standing night and day in the open exposed to all weathers, whereas in time of peace all army animals are stabled under the best hygienic conditions.

The average annual mortality among army animals participating in the South African War, 1899 and 1902, exceeded 55 per cent. per annum for the whole war.

There was no Army Veterinary Corps in those days. The Army Veterinary Department as it was then, consisted of only a few officers and Auxiliary Civil Veterinary Surgeons whose duties for all practical purposes were limited to professional attendance upon such sick and wounded animals as chanced to come within their narrow official scope.

Proposals for a better organization, indeed for any adequate organization, were coldly received. The Military Chiefs of those days in common more or less with the rest of the community had little confidence in their veterinary advisers and relied largely upon the time honored fallacy that all such subsidary technical matters were of slight, if any, military importance.

*The expression "wastage" includes deaths, destructions, missing and castings for destruction or sale. The mortality alone in 1916 was 9.47%.

Consideration of more legitimate military importance may have led in 1899—1900 to a cavalry campaign for which no hay was thought necessary, resulting for example in that memorable occasion on which a brigade of cavalry marched out from Bloemfontein under 100 strong, the remainder *hors de combat* for the most part from bulk starvation and consequent debility of their horses.

Major W. E. Watson, D. S. O., Sixth Dragoon Guards, who marched out with the "Brigade" on that occasion places the strength of effective mounted men as low as fifty.

It is not, however, claimed that the South African War of 1899—1902 and the present European War are exactly parallel cases in a veterinary point of view. It is not necessary to make such a claim since there is a wide enough margin between an annual equine mortality of nine and forty-seven hundreds per cent. and fifty-five per cent. to permit of considerable departure from the parallel, without affecting the validity of a statement that on the whole the better results of the present war in equine matters are chiefly attributable to the work of the Army Veterinary Service.

If the South African War was one of marching and counter marching, then this war has been one of hauling and straining to drag vehicles and guns of all descriptions through tenacious mud, under conditions of the greatest hardship and discomfort. Moreover, although there has been little of cavalry work in France, Egypt has afforded opportunity for some extensive operations in this respect, and, in the fighting against Bulgaria during 1916 very heavy work was required of the pack-transport animals. Statistical returns for the German South-west African Campaign and Rebellion, August, 1914, to July, 1915, and for the subsequent period July, 1915, to March 1, 1916, show an annual mortality at the rate of 9.09% among animals (horses and mules) of the Union Forces.

The conditions of this campaign were similar in most respects to those of the South African War, 1899—1902, with this considerable difference that the Union Government were careful to include in their forces an Army Veterinary Corps, identical as far as possible in its organization and proportionate

strength with the Army Veterinary Corps of the Imperial Army.

* * * * * *

The officers of the Army Veterinary Corps and graduates of British and Colonial Veterinary Colleges, with the exception of Quartermasters appointed for duty as such to Veterinary Hospitals, Horse Convalescent Depots, Base Depots of Veterinary Stores and Schools of Farriery.

* * * * * *

The present personnel as a whole is keen, enthusiastic, and imbued with those ideas of humanitarianism and helpfulness which are essential to useful work among dumb and comparatively stupid animals.

The work of the Army Veterinary Service comprises:

1. The examination for soundness of all animals prior to their purchase for the army.

2. Care of remounts on board ships.

3. Prevention and control of contagious and other disease among all army animals.

4. Treatment of minor cases of sickness and injury under regimental arrangement with the unit to which the animals belong.

5. Evacuation to veterinary hospitals of all cases of sickness or injury that cannot be treated properly with the unit, or that, for military reasons, it is not desirable to retain with the unit.

6. Maintenance of an efficient standard of horse-shoeing throughout the army.

7. Supply of veterinary medicines and equipment.

8. The training in Schools of Farriery of shoeing-smiths and cold-shoers required for the army.

9. Careful observance of and advice upon all matters directly or indirectly affecting the welfare of the army horse, *e. g.*, stable management, forage and feeding, watering, etc.

The policy of the Army Veterinary Service is well expressed in the adage "prevention is better than cure." The importance of prevention in military matters is paramount, and herein veterinary medicine diverges widely from human medical practice. This becomes apparent when one remembers that the horse cannot help himself but is entirely dependent upon the observation and foresight of those whose work it is to fend for him.

Veterinary and medical practice run side by side so far as hygiene sanitation and anti-sepsis are concerned, but the point of divergence is where the man can report himself "sick," and the horse cannot. This means that if the horse is to be adequately protected he must be inspected at least once daily by someone who is competent to detect incipient symptoms of disease.

It does not require much imagination to realize the enormous amount of work and organization involved in arranging for this service alone in connection with a military horse strength of many hundreds of thousands

The difficulty in detecting the first symptoms of disease in a horse is considerable and no small degree of experience is necessary before this difficulty can be overcome. This fact is particularly brought home to those concerned in dealing with outbreaks of equine influenza and pneumonia. In this class of disease, the greatest scourge of the equine race under conditions of domestication, frequently there is in the early stages little or no abnormal symptoms apparent to the unskilled observer. A horse to such may appear in good health although at the time a clinical thermometer will register a rise of five degrees F if the temperature of the animal be taken. It is hardly necessary to add that if taken out and worked in this condition, as only too often happens, the animals will subsequently either die or become so seriously ill as to necessitate several weeks of careful treatment.

Remounts, that is unseasoned horses, are peculiarly liable to this class of disease, so much so that practically every horse undergoes an attack subsequent to purchase and prior to commencing his military training. The Army Veterinary Service took early steps to combat this potential cause of wastage by enforcing the rule that in no case was any remount to be embarked on a ship or transferred from a Remount Depot unless

his temperature had been taken and found to be normal not later than the day immediately preceding his journey. This simple measure alone has probably saved the lives of thousands of horses. In addition to the above rule instructions are that when an outbreak of pneumonia or influenza occurs in any unit no horse of the unit is to be worked on any day during the existence of the outbreak unless his temperature has been taken and found normal.

HORSES ON BOARD SHIP.

There is no branch of administration in which the Army Veterinary Service has better justified its existence on economic grounds than in connection with the care of and arrangements for horses and mules on board ship.

At the outbreak of war it became evident that a large number of horses and mules would have to be purchased in other countries and brought to England by sea, and the Veterinary Directorate at the War Office undertook to provide Veterinary Surgeons to take charge of the animals during the voyage to this country. Veterinary Surgeons were also sent out with the Purchasing Commission to examine the animals before purchase and to make such arrangements subsequently as would ensure that only healthy animals were placed on board ship for conveyance to this country or elsewhere as might be required. One Veterinary Surgeon and a carefully selected lay assistants were allotted to each ship carrying horses or mules.

The appointment of an assistant, in addition to a Veterinary Surgeon, to each ship proved a fortunate arrangement as it was found possible after a years' experience to place many of the assistants in sole charge of the animals, and to withdraw a corresponding number of Veterinary Surgeons for duty with divisions of the new armies at a time when the problem of finding sufficient Veterinary officers for the latter was acute.

For purposes of convenience both Veterinary Surgeons and lay assistants when acting in sole charge of horses on board ship are described as "conducting officers." These conduting officers have done invaluable work. Many of them have been

continuously employed on horse-ships since October, 1914, and have become trained experts of the highest order.

During the first few months of the war the losses on board ship were somewhat heavy averaging about three per cent. for a short period. It is now rare to lose one per cent. Ship after ship arrives in port after the voyage across the Atlantic with at most one or two animals lost on the voyage and often none. Even on the long sea route from Canada to Mediterranean theaters of war the loss has seldom amounted to one per cent. Including the above mentioned heavy losses during the first few months of the war the total average loss on all horses and mules shipped from the beginning of operations to the present date barely exceeds one per cent. These excellent results are attributable in part to the pains taken to ensure the animals being in good health when shipped, in part to the expert care bestowed on the animals on board ship, and in part to the improvements on horse-ships that have been carried out during the war as the result of suggestions and recommendations received from conducting officers. A notable improvement in this connection has been the adoption of a system whereby animals are carried free in pens, each pen containing about five horses or mules. Formerly all army remounts were carried in narrow stalls, each animal having a stall to its self of a maxium width of two feet six inches.

The pen gives more freedom of movement, better facility for sanitation and ventilation, and even permits an animal, desiring to do so, to lie down for a while.

Incidentally an important economy has been effected in that far less timber is required for constructing pens than stalls.

The foregoing is only one instance of the many problems that have been tackled successfully as the outcome of keen and zealous observation and research on the part of conducting officers.

Conducting duty during this war has naturally not been devoid of stirring and perilous incident. In July, 1915, the S. S. *Anglo-Californian* carrying 925 horses from Canada to England was attacked off the coast of Ireland by a German submarine. After three hours shelling and the death of the captain

the ship put into Queenstown in a leaky and battered condition. Of the 925 horses on board 26 were killed by shell fire. The remaining 899 were ultimately landed at an English port in good condition owing to the gallant behaviour of the Civil Veterinary Surgeon Mr. F. Neal who, although he had every opportunity to leave in the ship's boats at the same time as the subordinate staff, remained at his post and tended the horses almost single-handed until the ship was conveyed into port. He also attended the wounded on board during the engagement. In recognition of these services brought to notice by the Admiralty, Mr. Neal was presented with the approval of the Treasury, with a gold watch suitable inscribed to commemorate the occasion.

The foregoing is but a single instance of numerous acts of heroism and devotion to duty on the part of conducting officers.

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WORK OF THE ARMY VETERINARY CORPS AT THE FRONT.

The work with divisions in the front line and field units and elsewhere is largely of a preventative and first-aid nature. In each division in addition to the Mobile Veterinary Section of which, later, there is a definite number of officers and non-commissioned officers, Army Veterinary Corps, distributed as evenly as possible throughout the fighting units, just as are Medical Officers and non-commissioned officers of the Royal Army Medical Corps. These veterinary officers and non-commissioned officers are responsible for carrying out simple first-aid treatment and for deciding what cases are slight enough for "duty and dressing," and what should be handed over to the Mobile Veterinary Section of the division for evacuation to Veterinary Hospitals on the lines of communication. They carry out the constant inspections of animals mentioned in the earlier portion of this artcile as being indispensable to prevention of diseases, both contagious and non-contagious among animals. Relatively the number of bullet and shell casualties among horses and mules is small as compared with similar

casualties among officers and men, because the animals are as far as possible kept behind the firing line.

In a big cavalry action naturally matters would be different but this form of warfare on a big scale still is awaited so far as the British forces in this war are concerned. Horses fare better than men in so far as their thicker skin and bulkier tissues offer greater resistance to projectiles and splinters, but worse than men in that economic considerations and mechanical difficulties often render it necessary to destroy horses for wound conditions which would at most maim a man. 'Open wound dressing is necessarily for the most part practiced in the field. Bandaging is only practicable to a relitavely small extent. Under the best conditions it has not on the whole been found a suitable form of dressing for the unclean type of wound met with on active service, and in the case of equines it is most difficult to apply a bandage to any situation other than the lower extremities of the limbs that will not speedily become displaced and thus a positive evil instead of a hypothetical good. Certainly bandaging appeals strongly to the popular imagination. There is an effective cleanly appearance about freshly bandaged wounds which catches the eye of the journalistic artist and, through his efforts, that of the general public.

In point of actual results, however, it has been found better to disregard superficial appearances and to enlist the bactericide aid of the oxygen of the atmosphere.

What is probably the best form of field dressing for horses discovered up to the present is as follows:

Foreign bodies are removed from the wound as far as possible without probing. Shreds of damaged tissues certain to die and decay if left inside are similarly removed with the dressing scissors. The wound is then gently cleansed with antiseptic wool, facilities for downward drainage of discharge are established and the dressing is completed by painting all exposed tissues with tincture of iodine.

It would not be permitted in an article of this kind to state fully how the personnel of the Army Veterinary Corps is disposed throughout a division; suffice it to say that every animal is able to receive at all times the expert attention of this personnel. No horse is permitted unnecessarily to suffer. If it is

evident that he cannot be restored to usefulness within a reasonable period then he is painlessly destroyed on the spot. If his injury or disease is amenable to treatment he is evacuated without delay to a Base Hospital containing facilities for the most up-to-date and scientific methods of treatment.

The Mobile Veterinary Section is a complete Veterinary Unit, allotted to a division, corresponding in many ways with a Field Ambulance of the Royal Army Medical Corps. The duty of this unit is principally to collect from fighting formations in its divisional area all injured, sick and debilitated animals requiring to be sent back to the large Veterinary Hospitals on the lines of communication. It also acts as a dressing station and undertakes the collection from the base of veterinary medicines and equipment. These stores are then distributed by the Section as required to divisional combatant units, a system which has proved far more convenient and expeditious than that in vogue in the earlier stages of the war when each unit in the field received its supplies independently from base depots of veterinary stores. Approximately half of the personnel of the Mobile Veterinary Section is utilized in the duty of collection of sick and first-aid treatment, including injection when necessary of tetanus anti-toxin; the other half forms what is known as the Railway Conducting Party. This party is responsible for safe conveyance of the patients from the nearest available railhead to the Veterinary Hospital at the Base and first-aid attendance en route. On its return from the base the conducting party brings with it the medicines and equipment required for distribution to divisional units, as mentioned above. Not all the patients collected by the Mobile Veterinary Section are sent to the base; when the division is stationary, milder cases are retained and treated by the Section and ultimately returned cured to units.

VETERINARY HOSPITALS AND CONVALESCENT HORSE DEPOTS.

These are situated on the line of communication and at the various bases of the Expeditionary Forces, in addition to many established in home commands.

An oversea veterinary hospital is established to deal at one time with 1,250 cases or a greater number, its organization

being such as to permit of ready expansion. The personnel allowed for each hospital is sufficient but not extravagant, having in view the important principle that an administrative service should be an economic dividend—paying proposition.

It is interesting to reflect that on mobilization the then diminutive Army Veterinary Corps was sufficiently hard put to it to find skilled subordinate personnel for one Veterinary Hospital as at present constituted, whereas there are now about thirty such, apart from Camel Hospitals and Convalescent Horse Depots, all staffed with competent highly trained personnel.

Each hospital is subdivided into wards and each ward as far as possible is appropriated to the treatment of a separate class of injury or disease. To the most skilled surgeons is given the care of wound cases; officers who have specialized in miscroscopic work have charge of the cases of parasitic skin disease and microbic affections. Similarly each non-commissioned officer has definite duties allotted to him according to the capacity he displays for a certain kind of work.

The treatment of parasitic skin disease alone presents an enormous problem. From earliest history parasitic skin disease has ever been the distressing accompaniment of war. Horses, like men, suffer from the depredations of lice but a far worse scourge of the former is in the disease known as mange.

This disease, caused by a microscopical insect parasite which attacks skin and in once species burrows under the surface of the skin gives enormous trouble. The intense irritation that occurs causes the affected horse to lose flesh rapidly unless promptly and efficiently treated. One Veterinary Hospital with the British Expeditionary Force is practically confined to the treatment of this disease alone. In the earlier stages of the war each case had to be separately treated by hand, involving an enormous amount of labor, but now there are established in many veterinary hospitals specially constructed dipping baths capable of dealing rapidly and easily with any number of patients. The bath is a long trench-like affair, dug into the ground and lined with concreted material, impervious to water. The bath is filled up to a certain height with a solution or mixture of the medicaments found most efficacious in de-

struction of the mange parasite and kept by means of steam of precisely that temperature ascertained to be necessary for the best results in the treatment. Matters are so arranged that the horse on plunging into the bath is completely immersed in the solution whence he emerges, having traversed the length of the bath, by upward incline to the dripping pens.

The principal trouble in regard to mange is to find a solution or mixture of medicaments that will destroy the parasite and its eggs without injuring the skin of the patient. Unless care is taken to observe both these conditions injury to the skin to a serious extent may supervene, so that the remedy proves "worse than the disease."

To eradicate mange entirely from an army in the field has so far proved impossible, but in this war it is kept well under control and has never got the upper hand, as it did in the South African War, 1899—1902, when it caused heavy mortality and inefficiency.

The great progress in methods of treatment of mange made by the Army Veterinary Service in the present war is scientifically gratifying and economically important. It has in fact, as a disease, ceased to be a terror and now only remains a nuisance. In the British Expeditionary Force eighty per cent. of all cases of disease, including wounds, admitted to Veterinary Hospital are returned to duty in due course. Of the remaining twenty per cent. a considerable proportion are painlessly destroyed, and sold at a good price to the local inhabitants for human consumption. In this country the percentage returned to duty from Veterinary Hospitals is naturally higher in proportion as the conditions obtaining at home are more favorable than those nearer the firing line. The absolute wastage both overseas and at home is thus kept down to a low monetary figure.

Each Veterinary Hospital is an entirely self-contained unit responsible not only for the treatment of 1,250 horses and mules but for the discipline, training, payment and general welfare of over 400 non-commissioned officers and men. Apart from medical and surgical treatment the horse and mule patients have to be fed, watered, groomed, shod, exercised and generally cared for in such a way that they will be fit for duty at the front

or elsewhere when discharged from Hospital. All animals thus discharged for duty are sent straight to Remount Depots where they are classified and posted again for service to various branches of the army as may be most suitable.

The selection of adequate sites for Veterniary Hospitals has been a difficult business. Apart from the large area required, questions of accessibility to railway stations, good water supply, facilities for disposal of manure and carcasses, called for serious consideration. A horse normally needs for drinking purposes alone about eight gallons of water a day in addition to the requirements for surgical and other purposes. In the opening months of the war the Veterinary Hospital was necessarily for the most part an open air institution. Not at once could there spring into existence the present admirably constructed stables, operating sheds, shoeing forges, exercising tracks, store houses and other carefully devised arrangements for the convenience and comfort of animals and men.

Although it is true that horses tied up in the open will, if well fed and rugged, and provided with moderately mud-free standing, keep in good health and flesh, it is nevertheless impossible in the climatic conditions of Northern Europe to obtain the best results in these circumstances so far as veterinary hospitals are concerned. Among reasons that contribute to the desirability of some sort of overhead cover for sick horses, there stands out prominently the fact that it is not reasonable, humanly speaking, to expect men to give to patients standing in the open and wet weather the individual care and attention which are essential to successful veterinary work. Moreover during the winter months, at least, covered accomodation is absolutely necessary for the adequate treatment of mange which, has already stated, forms a constant and considerable proportion of equine patients in time of war. To deal efficiently with this disease it is necessary to clip the animal all over, to wash or "dress" them frequently, and to leave them unrugged during the course of the treatment, as rugs habor infection and facilitate spread of the malady. It is evident that grave loss of flesh and condition must occur if unclipped and recently "dressed" animals are exposed day and night to wintry weather while tethered and without protection or shelter of any kind.

Condition is easily lost but hard and tedious to restore. A really emaciated animal takes many weeks and even months to recover sufficient muscular bulk to fit him for the heavy exertion of military duty at the front. The financial expenditure represented by covered accomodation for veterinary hospitals is therefore repaid in preservation of condition and consequently accelerated convalescence. In veterinary as in most other matters "time is money" as practically every horse delayed in hosptial has to be replaced in the unit whence he comes by a fit horse from a remount depot. Shelter and a moderate amount of warmth are great aids in the restoration of condition as well as in preventing the loss of it. Food has not only to build up the tissues but to maintain the body temperature, and the more is diverted to the latter service the less is available for the former. On a standard minimum food ration therefore it is important for body building purposes to keep the patient warm.

Especially during the winter in France and Belgium, when the univesal mud throws heavy strain on to gun teams and transport animals by reason of the great difficulty in dragging vehicles over the shell torn swamp-like ground, a constant stream of debilitated and war-worn horses and mules pours into the veterinary hospitals from divisions at the front. These animals for the most part are not diseased but merely weakened through loss of muscular and other tissue. For such horses the comfortable surroundings and shelter of the hospital act like magic. Except in the case of old animals, in a comparatively short period the hollow sides fill out, the coat resumes its normal bloom and the returning strength and spirits give evidence of restored vitality. These results could not be attained in double the time were covered accomodation in winter not available.

Old animals, if debility is at all advanced, recuperate slowly even under the best conditions, so slowly indeed that it is often economically necessary to destroy them rather than to keep them until again fit for work. This lack of resiliency in the old animal renders it most undesirable to purchase for war purposes any horse that has passed the prime of equine life. The period of a horse's life during which he is at his best for

military purposes is very brief. If under six years of age he is highly susceptible to all forms of equine contagious disease and stands the hardship of a campaign badly. If over twelve years although resistant to contagious disease he has generally lost the elasticity and recuperative powers necessary to enable him to "pick up" quickly after a severe bout of work. Therefore it is that military veterinary hospitals receive an undue proportion of the old horses of an army especially in the winter months. It would be ungracious to proceed to any description of the buildings of the veterinary hospitals without referring to the assistance afforded in this respect by the Royal Society for the Prevention of Cruelty to Animals. This admirably organized Society has labored throughout the war to assist the Army Veterinary Service in its efforts to promote the welfare of the army horses and as a logical consequence the efficiency of the armies in the field. Naturally the objective of the Society is humanitarianism but the active practice of a genuine, if in a technical point of view irrelevant, good inevitably leads to increased efficiency, at some point or other. Benevolent societies like R. S. P. C. A. and Y. M. C. A., whose objectives at first sight may appear widely removed are in effect working towards the same end—efficiency. Science, religion, secular benevolence and philosophy, in so far as they are all striving for a positive good are aiming for the same goal, and their progress is only limited by the degree of truth on which their policy and excursions are based.

In November, 1914, the Army Council accepted an offer from the Society to start a fund for the purchase of hospital requisites for sick and wounded horses, under the title of "The Royal Society for the Prevention of Cruelty to Animals." Fund for sick and wounded horses. The Duke of Portland consented to act as Chairman of the Committee formed, in accordance with the sanction of the War Office, to work in close co-operation with the Army Veterinary Department and supplement the recognized supplies for Army Veterinary Services.

This fund has up to the present collected over 100,000 pounds which has been spent on building Veterinary Hospitals as required, supplying special horse tents, horse drawn ambu-

lances (for all the Veterinary Hospitals and for the Mobile Veterinary Sections) attached to each division of the British Amry besides presenting motor horse ambulances for the armies themselves. The fund has also provided Bentail corn crushers and chaff-cutters with petrol engines for all the hospitals in France, and has supplied a large number of clipping machines, hand-clippers, dandy brushes, curry combs, Vermorel sprayers, etc., as required.

The first hospital built in 1914 was for 1,000 horses and was constructed of wood and galvanized iron, with wooden mangers and wooden water-troughs. It consists of a series of buildings, each with accomodation for fifty horses and a double expense Forage Store. It was found that wooden structures required a great deal of repair, and it was also thought that in case of advance or retirement the steel constructed shelters would be more advantageous, as they could be unbolted and removed to some other situation. Therefore the other three hospitals, built very much on the same plan, but increased to 1,250, have been made of steel or cast iron throughout, with roof and center divisions of corrugated iron. The mangers of the latter are of pressed steel and run down the central divisions, and the stables are fitted with bales. The flooring consists, in the majority of cases, of ashes and railway sleepers though where it has been possible to make them they have been constructed on cement. Each building has been supplied with a guttering round the eaves and has two drinking troughs, in the majority of cases made of galvanized steel, but latterly these have been replaced by troughs made of reinforced concrete. Each horse has a space of five and one-half feet, length of building one hundred and forty-four feet, with all over twenty-eight feet, minimum height eight feet, height of ridges eleven feet. The fund has also provided the hospitals with dining huts, officer's mess, and kitchens with stoves and boilers; also ablution rooms, mens' mess rooms with larder, scullery and kitchen, quartermaster's stores, bath rooms for the men, with douches. Administrative offices, consisting of commissioned officers' office, clerk's room, guard room and cells; quartermaster's office, saddlers' shops, carpenters' shops, pharmacy and stores, drying sheds, dressing sheds and stores (four to each hospital). Sergeants' mess, sergeants' bathroom, operating sheds and forage and chaff cutting sheds with corn crushers and chaff cutters complete. The fittings for the hospitals have been complete in every detail, including, where it was considered necessary: laboratories for microscopic work, cameras for research work, sterilizers for operating purposes, dressing boxes to contain liniments, bandages, etc., for each ward.

In all cases the fund has provided the complete material and the labor has been found from the Army Veterinary Corps men themselves. This has worked admirably, because after the stables had been erected a certain number of the personnel of each hospital could, for the time being, be employed on constructing buildings under the guidance of Mr. A. H. Fass, who has done splendid honorary work in superintending the erection of the various hospitals given to the fund.

The fund also provided the necessary buildings for 500 horses at No. 1 Convalescent Horse Depot; these buildings are very similar to the ones provided for the hospitals, and they have recently been added to increase the accomodation to 750 horses. In all, hospital accomodation—including stabling for 500 horses at the Isolation Hospital, Woolwich— for nine thousand five hundred horses have been presented through this fund.

It should be pointed out that the advantage of accepting such voluntary aid is that the work can be carried out under the guidance of the Works Department, but without adding to or hampering that Department at a time when it is already overwhelmed with work; therefore the important question of accomodation for sick and wounded horses can be dealt with immediately, and does not have to wait its turn with all the other work which has to be seen to.

Another supply from the fund which has been of great use to the Corps, is that of "Vermorel" sprayers, seventy-eight of which have been issued to all the hospitals and Mobile Veterinary Sections. These are not only of great utility for dressing and cleansing wounds, but also for disinfecting railway trucks in which the horses have been brought railhead, thus preventing the possibility of spreading contagious diseases.

The fund has also presented motor-lorries for conveying fodder and other supplies to certain of the hospitals, and it is by these various aids that the utility of the fund has been established. To the Chief Sesretary of the Royal Society for the Prevention of Cruelty to Animals, Hon. Captain E. G. Fairholme, the Army Veterinary Service is greatly indebted for the enthusiastic and efficient way in which he has organized and co-ordinated the work of the fund so as to adapt its resources with a minmum of waste or friction to the immediate needs of the service.

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GLANDERS AND MALLEIN.

To describe fully the work done during the war by the Army Veterinary Service in connection with the control of glanders alone would require greatly more scope than that of this entire article.

As is now fairly generally known, glanders is a particularly deadly equine disease of insidious nature and is highly infective. Records of this disease date back to Hippocrates and Aristotle, and from earliest history it has caused important losses among horses in times of war. The reasons for its predominence in time of war are partly the same as those which cause most infectious diseases to multiply at such times, but notably a tendency to assume a virulent form when by reason of hardship or food shortage the constitutional bodily resistance of the animal is reduced. An outbreak of glanders occuring in peace among well-fed highly conditioned otherwise healthy animals spreads slowly and with difficulty, on account of the physiological resistance it encounters; in war, on the other hand, an outbreak occurring among war-worn or debilitated animals will speedily assume more serious proportions unless adequate means are adopted to check it. Fortunately an adequate means now exists in mallein, a substance composed of killed cultures of the glanders bacillus to which has been added glycerine and carbolic acid.

When mallein is injected by means of a hypodermic syringe under or into the skin of a horse affected with glanders a reaction takes place in which a swelling forms at the site of inoculation and a marked rise of temperature occurs within twenty-four hours. If the horse is not affected with glanders no reaction occurs. As glanders may be dormant in an apparently healthy horse for months, ready to break out in an acute rapidly fatal form at any moment, the value of a means whereby the latent disease can be readily detected becomes easily apparent.

Mallein has been freely used in the present war with the result that the mortaility from glanders has been less than one percent. of the total mortality from equine disease in general. Every remount is tested with mallein as soon as purchased. Animals arriving from Canada or elsewhere after purchase are again tested. In brief, the test is applied at every period in the animal's career found from past experience to be associated with an outbreak of glanders. Last but not least animals cast and destined to be sold are tested with mallein before sale so as to avoid the possible chance of transferring to the civilian community an infected horse that may develop acute glanders subsequently to sale and thus spread disease to the detriment of national welfare. Naturally all this mallein testing means a great deal of anxious work and drudgery. There are few duties of which the Army Veterinary Surgeon becomes so heartily sick as this incessant testing of horses with mallein. Nevertheless it has to be done and results show that for the most part it is done skillfully and thoroughly. The operation itself is practically painless, most horses take no notice of it, and there is in a healthy animal no painful sequel such as may occur after vaccination or inoculation for enteric in man.

Formerly all mallein for the purposes of the British Army was obtained from the Royal Veterinary College Laboratories in London, but at an early stage of the war it was decided that the Army Veterinary Corps should undertake the preparation of the mallein required and that the Labratory of the Army Veterinary School at Aldershot should be used for this purpose. Accordingly an officer of the Special Reserve of the Army Veterinary Corps, a trained bacteriologist, was appointed to carry out the work and matters proceeded satisfactorily till at the

height of its activity the Laboratory was turning out 80,000 doses of mallein a month. This could have been maintained, but an interesting development in the history of mallein lessened the need for the variety of mallein hitherto in use. This development occured as the result of research by French Veterinary Surgeons who discovered that a very much smaller quantity of a differently prepared mallein injected into the skin of the eyelid sufficed to give a more delicate and, in the opinion of many operators, a more certain test for glanders. The dose of the original mallein injected under the skin of the neck was from fifteen to twenty drops, whereas for the eyelid test with the French mallein about two drops are sufficient. A much finer needle is used for the latter so that the greater sensitiveness to pain of the eyelid is automatically compensated. If an animal is glandered a swelling of the eyelid speedily occurs, after injection, accompanied by a more or less profuse discharge from the eye; no reaction is seen if the animal is healthy. For some time the new mallein was all obtained from French sources, but recently the laboratory of the Army Veterinary School has commenced to prepare it and no difficulty is anticipated in turning out an equally reliable preparation of identical nature.

During the last two years only two cases have occured in which a cast army horse or mule has been found to be affected with glanders after transfer by sale to the civilian community, notwithstanding the large numbers of army animals that have been so disposed of during this period. Perhaps this fact constitutes the best evidence that could be offered of the efficiency of the mallein test and the way in which glanders among army animals has been controlled by this and other means.

HORSE AMBULANCES.

The application of horse ambulances to military purposes has been an interesting and useful feature of the present war. During peace horse ambulances have for some time past been used by the Army Veterinary Corps in connection with station veterinary hospitals but it is believed that the present war is the first in which they have been taken into the field.

Two chief kinds of horse ambulances are used at present. Motor Horse Ambulances and horse-drawn vehicles. The

motor horse ambulance was first used overseas at a busy port where the veterinary hospital was necessarily located on a height some distance from the quay. When dealing with animals sick or injured by some accident on the voyage, it was found that some rapid and powerful means of transport was desirable to convey the patients with the least possible dealy from the ships side to the veterinary hospital. Help was forthcoming in an officer from the Committee of the Home of Rest for Horses at Cricklewood acting in conjunction with the Royal Society for the Prevention of Cruelty to Animals, to supply a motor horse ambulance if the Director of Transport at the War Office would agree to allow the motor firm selected to release from combatant requirements a suitable chassis. In due course this permission was obtained, a body constructed to carry at one time two patients was fitted to the chassis, and the ambulance was dispatched overseas. Needless to say, it proved a great success.

Since then other motor ambulances have been supplied by the Royal Society for the Prevention of Cruelty to Animals as required. It has been necessary for military reasons to keep the number within low and definite limits so as not unduly to encroach upon the prior claims of combatant branches of the service of the Royal Army Medical Corps for chassis and petrol. No such considerations, however, have hindered the adequate supply of horse-drawn vehicles for ambulance purposes, and these are now included in the equipment of all veterinary hospitals and many Mobile Veterinary Sections. Apart from the humanitarian aspect these motor ambulances play an important ecomonic part in facilitating the removal to veterinary hospitals of numbers of horses and mules that would otherwise have to be destroyed. Injuries to the foot bulk largely in the list of troubles to which the war horse is particularly subject. Of this class of injury the principal cause is the extraordinary liability of iron nails lying on the ground to attach themselves to and penetrate the sole and frog of the horse's foot. Most of the material conveyed to the troops overseas is packed in light wooden cases and in the process of opening and ultimately burning these, nails become distributed broadcast. Every possible effort has been made to prevent this distribution, but

military exigencies are such that this phenomenon is to a large extent inevitable. The extent of injury to the horse caused by picked-up nail naturally varies according to the degrees of penetration and the amount and nature of infective dirt carried into the wound at the time of, or subsequent to, the accident. Very often the accident causes no obvious lameness at the time and, especially in the presence of mud, the condition may escape observation until, perhpas, one morning the affected animal is found so lame as to be unable to bear any weight on the foot. This occurs by reason of the rapid formation of pus, resulting from infection of the wound, within the rigid horny capsule of the foot, causing pressure on the sensitive structures within. First-aid is at once administered by paring away the horn over the wound, liberating the pent-up discharge and applying an antiseptic dressing, but the horse remains very lame and unable to walk without much pain and distress. The question of his removal to a railway station for dispatch to hospital is solved by the horse ambulance. In this he travels in comparative ease the distance to the station, and having completed the railway journey, is again conveyed in comfort in an ambulance to the veterinary hospital, where his foot receives more particular attention and he is soon on the high road to a speedy recovery.

The cases of picked-up nail, that is the cases of injury to the foot of army horses from this cause, in France alone, number several hundred a week. Attempts are being made to devise a movable metal protection to the sole of the foot that will prevent penetration by nails without being too heavy or difficult to adjust, and it is hoped that in due course a satisfactory outcome of the experience will result. In the meantime the horse ambulance probably justifies its provision and maintenance on account of this item alone.

ARMY SCHOOLS OF FARRIERY.

Army horses working on modern macadamized roads have to be shod well and frequently if they are to remain effective and therefore at duty. A set of shoes will often barely suffice a horse in a gun-team for 100 miles of modern road work, *i. e.*, about five days constant but not severe marching.

If an army fights on its belly, it is certain that a horse does all its work on its feet, and for military purposes in Western Europe an unshod horse is useless. While the new armies formed during the first year of war were still "on paper" it was foreseen that unless extraordinary steps were taken there would be a very serious shortage in the army of men able to shoe horses. Accordingly every possible means was utilized to obtain shoeing-smiths. This was before the days of conscription and in order to get as many as possible of the experienced blacksmiths sacttered throughout the country to join the army, high rates of pay and attractive prospects of promotion were offered. This measure sufficed to relieve immediate needs but it was clear that for future purposes much more comprehensive arrangements would have to be made. The supply of ready-made blacksmiths suitable for the army was comparatively small. The motor-car by replacing horses for many purposes both in town and country had hit the art of farriery very hard and the village smithy had for some time fallen off in attractiveness to young men seeking a trade to follow. Obviously therefore the thing to do was for the army to train its own shoeing-smiths, or at any rate to get soldiers trained as shoeing-smiths in some way or other. The question of training was taken up eagerly. Wherever opportunity offered young soldiers volunteering for the work were placed under training in military and civilian forges. Classes of instruction were started in veterinary hospitals, remount Depots, etc., The Borough Polytechnic Institute, Bermondsey, gave considerable assistance by organizing large classes of instruction in cold-shoeing at Herold's Institute, Bermondsey. The great demand was for showing-smiths for Royal Field Artillery and Infantry Transport. The cavalry were fairly well off, as they were able to train, with the assistance of older farriers called up from the reserve, under regimental conditions sufficient recruits for their purposes. They Army Service Corps were also well off, as the great majority of blacksmiths coming into the army from civil life in the early months of the war were enlisted by special arrangement in the Army Service Corps. Also the Army Service Corps were in a position to undertake the training of considerable numbers of cold-shoers and shoeing-smiths in their regi-

mental forges, which were already established at most prewar military stations in this country. Presently, as might have been expected, it was discovered that a grave lack of uniformity existed in the degree of proficiency displayed by the newly trained men. Some of the new "cold-shoers," as they were officially described, were fairly useful, others proved after trial to have only a superficial and theoretical knowledge of the work. Meanwhile the rapid growth of the new armies and the necessity for quick replacement of casualties occuring overseas called for an ever increasing number of adequately trained cold-shoers and shoeing-smiths.

Briefly the difference between a cold-shoer and a shoeing-smith is one of degree, in which the latter has the advantage. The cold-shoer knows enough about shoeing to take off and nail on shoes and carry out what may be described as "minor repairs." The shoeing-smith is a complete artificer able to make a shoe as well as to adapt it to its destined purpose.

In the early summer of 1915 the Army Veterinary Department of the War Office offered to establish and organize Schools of Farriery, each school to be capable of turning out about 1,000 cold-shoers every three months. This offer was accepted and steps were taken forthwith to form three Army Schools of Farriery in this country. At the same time a small School of Farriery came into being on the lines of communication, British Expeditionary Force under the auspices of the Veterinary Directorate overseas.

The schools have all been working at high pressure since the winter 1915–16, and have given the utmost satisfaction. The system of instruction and standard of examination are uniform and each pupil must give definite proof of competency before he is "passed out" of the school and becomes entitled to the extra duty pay earned by qualified artificers. A modern army School of Farriery is a busy affair. With nearly eighty forges going, each fire serving for the instruction of about half a dozen pupils, a daily shoeing of some hundreds of horses the school is on a par with other gargantuan institutions arising out of the war. Great ingenuity has been displayed by the instructors in devising means of a dummy of artificial nature to assist in the early stages of tuition. A simple but highly

effective apparatus varying in form but similar in principle has been introduced to which the foot from a dead horse can be firmly attached. The apparatus with foot attached can then be manipulated and moved through varying angles in exactly the same way as a blacksmith manipulates a horse's foot and leg in the course of shoeing. The learner thus begins on a dummy of infinite patience and insensitiveness to pain should the former be clumsy in his early efforts to nail on a shoe.

The schools are located in the vicinity of remount depots and large garrisons so that there may be an ample supply of army horses for purposes of instruction and demonstration. The assistant instructors are largely drawn from retired and re-enlisted army farriers. In addition to tuition in the art of shoeing, the pupils go through a short course in first-aid surgery of the horse's foot, so that they may know what to do in case of need arising out of their own inexperience or some fortuitous circumstances beyond their control. Questions on this subject form part of the qualifying examination. About two months concentrated training at a farriery school enables a man of fair average intelligence and manual dexterity to qualify as a "cold-shoer." Not less than three additional months of training are needed before a pupil is qualified to pass out as a "shoeing-smith."

It is correct to speak of the "art" of shoeing. A competent farrier must be at least somewhat of an artist to be able after a brief scrutiny of a foot so to shape the glowing iron by a few blows of the hammer as to bring its curves into true accordance with those of a hoof that may and often does present abnormality of outline. A skilled farrier scorns over-precise mensuration. At most he will register the greatest breadth or length of a foot by breaking off to the required length a piece of straw to correspond with such dimension. Subsequently with only this piece of straw, and the image reflected in his trained memory to guide him he will make a shoe that on being fitted will often be found to require no alteration whatever. The Schools of Farriery cannot produce this degree of excellence after five months of training, but they can and do turn out a very useful artificer whose transition to artist is only a question of native capacity and time. In the achievement of this

end the problem of how to supply a hastily collected army of modern dimensions with a sufficiency of forge-artificers has been satisfactorily solved.

In the course of description of any form of honest endeavor the narrative is apt to take on a highly laudatory tone and thus to convey the impression that, wherever else there is shortcoming, at any rate the subject under review is perfect. If such an impression has been conveyed by the foregoing notes, it is fortunately not too late to correct it. The Army Veterinary Service, in common with all other organizations dependent for their success upon the individual efforts of human beings, contains a normal proportion of seekers for the line of least resistance, faint-hearted fighters in the struggle against disease and inefficiency. An army like a nation gets pretty nearly what it deserves in the way of scientific assistance. The vast possibilities of sanitation and preventative medicine are as yet dimly realized even by Veterinary Surgeons themselves, much less by those who have not at all considered the matter. The many hundreds of debilitated horses pouring every week into veterinary hospitals could be reduced by one-half, were the personnel of the Army Veterinary Corps and that of other arms concerned with horse-management universally alive to the prior necessity of prevention as distinct from cure of disease. In the professional tendency, inherent in most practitioners, to devote the mind principally to the "healing art" rather than to the practice and propagation of the principles of horse management, hygiene and sanitation, lies no small share of the causes that come between perfection and the Army Veterinary Service of today.

It has not been possible in the scope of this article to go closely into detail the attempt has been made rather to give a general idea of the objective and routine of the Army Veterinary service. In connection with the views expressed and the demonstration offered of what can be achieved by assisting and encouraging scientific work it is pathetic to reflect that the chief and original source of veterinary service in this country, the Royal Veterinary College of London, is struggling barely to maintain its existence. The arrival of the modern motor vehicle naturally has caused a great falling off in students

whence formerly the college derived the bulk of its income. Unassisted at the present time in any way by the State, its funds such as they are depreciated by the war, its benches depleted of students the college has indeed fallen on evil days.

The Royal Veterinary College of Ireland derives liberal financial assistance from the Department of Agriculture and Technical Instruction, and the Edinburgh Veterinary College is substantially helped by the Scottish Education Department, but the English Parent College is left to its own resources.

In comparison with the assistance that is given to medical education and all sorts of technical education it may, in view of the above facts, be fairly stated that the Royal Veterinary College has been sadly neglected. Veterinary Suregons are not wealthy men, they pursue an idealistic rather than a profitable profession and are not therefore in a position to enrich by endowments the source of their professional education, as so frequently occurs in the case of the Arts and other learned professions.

The enormous amount of valuable national service performed by Veterinary Surgeons is for the most part overlooked or hidden away in the corner of some Departmental Blue Book. Even if armies pass away and there is no more war, the flocks and the herds of the Empire will always require the assistance of the veterinary profession. A Board of Agriculture or Colonial Administration would be handicapped indeed without its veterinary advisors and executive. Assistance cannot therefore be denied to the Royal Veterinary College on the grounds that the motor car has banished for ever the national need for expert Veterinary Surgeons. To meet the argument that the present is no time for incurring further public expenditure it may be stated that the college could be kept above water by appropriating to its needs the annual emoluments paid from the coffers of the State to any one of many dispensable people holding appointments of doubtful utility but indisputable dignity.

Reprints & Translations

THE HORSE.*

AT the very outset of this great world war we find ourselves short of both cavalry, artillery, and general-utility horses. And all our so-called military experts concede the absolute necessity for cavalry on the flanks of an army or to cover a retreat. In the Boer War, in South Africa, the most expensive, aggressive war of conquest Great Britain ever made in a century the lack of cavalry to fight the Boers, who were all mounted on fleet-footed ponies, cost Great Britain more lives of soldiers and more money than all the forty-two wars waged during the entire eventful reign of Queen Victoria.

Today we are seriously hampered in our war preparations for lack of horses, and that demand can not be supplied. It was claimed by most of our so-called military experts, at the time the United States entered the war, that the aeroplane would take the place of the mounted soldier; but now the demand for cavalry is universal. In a recent number of the *Breeder's Gazette*, one of the oldest and ablest stock farm journals published in the United States, I find an editorial voicing the immediate demand for cavalry in order to win the war. From time immemorial it has been the swift mobilizing cavalry that has won battles in the critical crises of wavering battle lines. This was a vital lesson we learned early in the first battle of the Civil War, when a charge of the Black Horse

*Speech in the House of Representatives, January 24, 1918, by the Hon. I. R. Sherwood, of Ohio.

Cavalry, of Virginia, put to rout a superior force of infantry in the first Battle of Bull Run.

And in the two-years war in South Africa, England learned a severe lesson of humiliation when 7,000 Boer farmers, mounted on Boer ponies—and neither Boers nor ponies ever saw the inside of a military academy—caused the retreat across the Tegula River of 42,000 trained veterans of England, commanded by the widely renowned General Buller.

And in the present World War it was the Italian cavalry, covering the retreat of the Italian Army from the Austro-Hungarian border to the Piave River, that saved the bulk of that army and the most valuable of artillery stores and munitions. Not only are we short of artillery but of men trained to take care of horses. An up-to-date high ranking army officer recently said:

"The man who knows how to take care of animals in this country has become very scarce. We must provide thousands of men capable of taking care of animals and who can shoe a horse, drive a team, and adjust a pack saddle. You cannot train a horseshoer in less than four months; you can teach a man to pack or drive a team in about two months. Without horseshoers, packers, and teamsters we cannot have an army. The men who handle machine guns will be of little service unless they are taught to take care of mules. Without the teamsters we cannot have an army."

We know all the high authority—machine-motor experts—have been indulging in big display-line prophesies of a horseless age. We remember vividly of the many predictions of the machine and chemical laboratory war prophets of a horseless war; that the experts in the bird-flying aeroplanes, dropping the awe-provoking bombs, would do the terrible work on the flanks and in the rear of a hostile army, with no further use for the cavalry horse, whose swiftness in battle is conceded to be five times the velocity of a foot soldier.

This is my excuse today for exploiting the horse. Our shortage of the speed horse, the saddle horse, and the general utility horse is largely due to hostile legislation against horse-racing, the most alluring, recreative and wholesome of all the outdoor sports and pastimes. Legislation that has financially

ruined and driven thousands of expert breeders out of the business; legislation aimed at so-called gambling on the pastime, with the inevitable result that we have inaugurated prize fighting, the most brutal and degrading of all the pastimes of the people, with the nose smashers and rib crackers of the prize ring masquerading as our theatrical stars, and gambling on ring contests increased tenfold. This is my excuse for exploiting man's best animal friend in all the avenues of life, in history, in chivalry, in the holy crusades, and on the red fields of war.

WHY GOD CREATED THE HORSE.

In the domain of the utilities, in the more æsthetic field of the recreations, in poetry and song and sculpture, and on the red fields of war the horse, since creation's dawn has been the omnipresent companion and helpmate of his master—man. Let us now scan the law of the inevitable—the natural loves and instincts of man as illustrated by all history. From the ancient Pharaoh of the Exodus to General Phil Sheridan, the horse has shared the honors of war, the glamors of love, the wild witchery of chivalric tournament, and the gloom and glory of all the crusades, Christian and Mohammedan.

THE HORSE IN THE EARLY CRUSADES.

A thousand years before Christianity began the horse was one of the most potent deities of the wierd and fascinating religion of the Pagan world. The history of his achievements covers three continents and runs through ten portentious centuries of triumphs, wars, and conquests.

As a potent missionary of the Christian religion, the horse was first conspicuous at the close of the Eleventh Century. At the Council of Clermont, 1095, Pope Urban II, in the spirit of religious fanaticism, called upon the church to rescue Jerusalem and recover the Holy Land. This great appeal started the holy crusades that continued over 200 years and at one time involved all western Europe.

The first crusade (1069–1099), organized by that great plebeian, Peter the Hermit, failed because they had no horses. Nearly all his soldiers were slain by the Mohammedan Turks

in Asia Minor. The second crusade, organized in 1097, was led by Knights of the Holy Cross; and no soldier could be a knight who was not mounted, and he must also be a horseman, strong enough to wear steel armor and to wield a broadsword. On June 7, 1099, 20,000 of these crusaders reached the Holy City, Jerusalem. After a five weeks' siege the city was captured by a cavalry charge of the most reckless daring. Godfrey, the leader, wrote home as follows:

"In Solomon's porch and in his Temple our knights rode in the blood of the Saracens up to the knees of their horses."

The seventh and last crusade did not end until 1272, and while I am not here to say that the mounted cavalier with sword and spear was the true follower of the lowly Nazarene, the mailed knights of the Middle Ages were the avant couriers of that kind of Christian civilization that dominates all Europe today, and it is getting a firm grip on the United States.

In discussing the moral influence of the crusades, that eminent scholar and poetist, Daniel Cott Gilman, president of John Hopkins University, says:

"The constant contact for two centuries with the more advanced Byzantine and Arabic culture taught the crusaders many lessons in civilization."

So much for the horse of chivalry in advancing Christian civilization in Europe.

THE HORSE IN NEW WORLD HISTORY.

In the new world the horse has been a much more potent and pervading force than in the old in the evangelization of the idol worshipers of the Western Continent. Hernando Cortez, the conqueror of Mexico, as an annointed Knight of the Cross, could never have subdued the fierce and warlike Aztec nation without the Spanish war-horse of the Sixteenth Century. It may not be known that the entire force of Cortez when he successfully captured the strongly fortified City of Mexico was less than 1,000 Spanish foot soldiers and only 87 splendidly mounted knights riding powerful Spanish horses, incased in steel armor. The Aztec warriors had never before seen a horse,

and they regarded him as a supernatural terror—death dealing and irresistible.

The history of the conquest of Mexico reads like an Arabian Night's tale. Though Hernando Cortez had only a few hundred men, in two weeks after entering the capital of the warlike and powerful Aztec Empire he captured the holy sovereign, Montezuma, and took possession of the Aztec treasury, valued at six and a half million dollars, and all of Montezuma's ministers.

And what Hernando Cortez and his cavaliers did to the Aztecs of Mexico a still more daring knight and horseman, Francisco Pizarro, did to the pre-historic Incas of Peru in 1535; and he did it with his knights on horseback in armor of steel.

THE HORSE IN SACRED HISTORY.

In all religions the horse has ever been an omnipresent factor. The fascinating mythology of the Greeks, a race, in their prime, foremost in art and civilization, is full of the horse.

The Mohammedan religion is also toned by the horse. Borak was the milk-white horse that had the wings of an eagle and a human face. He carried the prophet Mohammed from earth to the seventh heaven. And the seventh heaven, in the Mohammedan religion, is the dizziest parlor in the top mansion of the blissful skies. The name is Arabic, meaning the lightning.

Haizum was one of the horses of the archangel Gabriel. Read the Koran and you will see. Hrimfaxi is the horse of night, from whose bit fall the "rime drops," which every night bedew the earth. This is found in Scandinavian mythology.

If you will look to Revelation you will see that it is the pale horse upon which death rides, and as death ends all in this world I will here end my story of the horse as a Christian missionary, with a cheerful remembrance of the Old Testament prophet, Elijah—second Book of Kings:

"And it came to pass, as they still went on and talked, that, behold, there appeared a chariot, of fire, and horses of fire and parted them both asunder, and Elijah went up by a whirlwind into Heaven."

It is evident without the horses Elijah would never have reached that lofty atitude.

THE HORSE IN CHIVALRY.

Chivalry derives its names from the French word "cheval," a horse and the word "knight," which originally meant boy, was subsequently applied to the boy when he was able to mount and successfully manage a horse. In the so-called age of chivalry the mounted knight was in war at the service of his sovereign or chief, and in peace he graced the court as the gallant of the ladies in the castle, where he shared the banquets and participated in the jousts and tournaments with which the bravest of the brave cheered their leisure.

TOURNAMENTS ORIGINATED IN FRANCE.

The tournaments of the knights on horseback, in steel-clad armor, originated in Frace. They were organized to kill time in times of peace, and against the protest of the clergy. Afterwards and during the so-called holy crusades—in the battles of the centuries—of the cavaliers of the Cross, against the legions of Mohammed, the clergy indorsed and encouraged the crusaders.

HOW CHIVALRY HUMANIZED WAR.

The age of chivalry was an age of fierce adventures and long and bloody wars, in which the horse was the chief factor; but it humanized war, inaugerated kinghtly honor, and did much to eliminate the brutal instincts which before had found vent in the butchery or slavery of soldiers captured in battle. Knightly honor; the growth of chivalry, forbade a kinght to kill another knight when he was unhorsed or had dropped his lance or called for mercy. Chivalry also did much to elevate woman to her true place as the equal companion of man. And it was distinctly forbidden in all the jousts and tournaments where knights fought on horseback to even wound a horse. In fact, the horse was the true badge of a knight. No villain or serf was ever allowed to ride on horseback or carry a lance. The horse in the chivalric age did for knightly conduct what

the horse of Pagan civilization did toward humanizing the Romans. When Nero sat above Rome Christian martyrs were taken to the arena to be devoured by wild beasts, caught in the German forests, in the applauding presence of the Roman populace. Later, under Emperor Augustus, under a gentler and more benign civilization, the chariot races, in which the horse was the main factor, supplanted the bouts in the bloody arena. And in the age of chivalry the horse did for Christian civilization what the chariot races did in Rome for Pagan civilization. He made mankind better and more humane.

WHAT CHIVALRY HAS DONE FOR LITERATURE.

The history and traditions of the age of chivalry have enriched all modern poetry and literature. The history of chivalry is a rich storehouse, of poetic material that all our modern poets have used generously to glamour and allure both fiction and poesy. Spencer, Sir Walter Scott, Longfellow, and Tennyson, have drawn plots, romances and poems liberally from chivalry, but none so successfully as Lord Byron and Washington Irving. Next to Waterloo, Byron's most thrilling dramatic poem is "Mazeppa," in which the wild horse of the Ykraine is the leading factor of the poem. Few students of English literature know that Mazeppa, lashed naked to the back of a wild horse, was a real historical character and not a fictitious hero born in the brain of the great poet. "Mazeppa," the poem, was drawn almost literally from history. Mazeppa was a knight of chivalry. He was bron in 1645 and had a knightly pedigree, standard through both sire and dam.

THE MODERN POET EXPLOITED HORSE HEROICS.

All the poets of modern times put horses under their heroes. King Richard III, according to Shakespeare, offered his whole kingdom for a horse after his game steed fell dead on the bloody battlefield of Bosworth. He could not get another horse on his offer, and thereby lost the battle and the crown, and the blood of Plantagenet was dried up forever, and the blood of Tudor came in to rule England, all for lack of a horse.

All the standard English poets were horse fanciers. Sir Walter Scott, the immortal Marmion, puts into Lady Herron's

sweet mouth the story of "Young Lochinvar," one of the most thrilling musical gems in the English language. And young Lochinvar's horse is the supreme factor of the escapade. You remember when young Lochinvar stole away the bride that was about to wed "a laggard in love and a dastard in war," he caught her on the home stretch, and throwing her willing form behind his own, astride his prancing steed, while two pairs of chivalric legs were thrilling the throbbing ribs of his game flier, the lads and lasses of the laggard bridegroom had no steeds fleet enough to follow, and young Lochinvar got away with everything.

Even Tennyson, late poet laureate of England, with all his finical fine ladyism of versification, occasionally braces up into the robust heroic when he mounts the English thoroughbred. He does this in "Locksley Hall," but his best effort by far is "The Charge of the Light Brigade." But Tennyson is hardly in the same class with Sir Walter Scott. In all the minstrelsy of Scott the horse always comes into gild the heroics, whether he sings of love or war.

And the finest dramatic poem of our Civil War is "Sheridan's Ride," written by our Ohio poet, T. Buchanan Read, in which the horse is the hero, because without that game flier Sheridan could never have turned defeat into victory in that immortal twenty-mile ride from Winchester to Cedar Creek. Have you ever stopped to think what would have become of our army that critical day had Sheridan attempted that perilous ride in an automobile with a busted tire? Could he have inspired the boys with courage anew sitting in a pulseless machine, even without a busted tire, instead of the black charger, that with foam on his flanks and nostrils red as blood, and eyes flashing fire carried the courage of his great master into the hearts of the musketeers.

THE TROUBADOURS AND THE HORSE.

In the songs of the troubadours the horse is everywhere sung. Many of these songs were written by women. The troubadours were the offspring of chivalry. They first appeared in France in the Eleventh Century and sung their last lyric poetry in Spain in the Fourteenth. The troubadours

composed and sang songs, and one of the accomplishments was to play the harp or make melody of the feline intestines over the bridge of a guitar. They were the inventors of lryic poetry, devoted entirely to sentimentalism. They were often mounted when attached to courts of princes and nobles, and they sang praises to the gallantry of knights, and often indulged in rustic rhymes on the degeneracy of the clergy. Our own Washington Irving won his greatest fame in fiction imbibing the lyric songs and romances and wild witching tales of the Moslem Moors. Lyric once sung in the subtle moonlight to the black-eyed daughters of Andalusia, who danced in the orange groves of the Guadalquiver in the heroic age of the Moorish chivalry.

None of the historians are able to tell when the domesticated horse was first ridden by barbarous man, as he is now ridden to death by the soldiers of Europe in the pending war.

The ancient Egyptians, the Assurians, and the Hittites, all used the horse to war chariots, and later the Etruscans and Greeks in chariot race and triumphal processions. Neither did the ancient Egyptians ride horses. We first meet with a notice that the horse was ridden among the Greeks of the Homeric period. Just when Homer lived and loved and sung no one knows, but Heroditus, the oldest of the Greek historians, places Homer's fitful days on earth as 400 years preceding his own, and we read that Heroditus was cavorting around the ancient cities of Memphis, Heliopolis, Athens, and Babylon about 430 years before Christ. There were no metropolitan daily papers or horse papers in those desperately wicked old times in Babylon, and it is nowhere recorded how Herodotus was mounted, or whether he was mounted at all.

THE HORSE IN MYTHOLOGY.

Scandinavian history is full of the horse and so is Scandinavian mythology. Abakur, the favorite war horse of King Sunna, was so called because the word Abakur means in the Scandinavian language " A hot one." Hence, the term "hot stuff," as applied today to an extreme speed trotter, may be a term of Scandinavian origin.

Arion, which is the Greek for war horse, was also a flyer. He was the horse of the giant Hercules, given to Adrastos. He ran with incredible swiftness, and this is why the Greeks deified him.

And the fascinating and picturesque and mysterious religion of ancient Hindustan is full of reference to the horse. The marvelous prophet Buddha was the greatest horseman of his time. His favorite horse was Kantaka, a pure white stallion, that is thus described in the "Sacred Books of the East." "A gallant steed, white as the foam of the sea, full maned and flowing tail. Head like the king of parrots, belly like a deer, breath like the dragons, wide forehead, claw-shaped nostrils, and eyes like the gazelle."

After the lapse of over twenty-five centuries Buddhism still stands first among the four great religions in the number of its devotees.

Our Aryan ancestors on the plains of India sang the Vedic hymns even before the epics of Homer, celebrating the horsemanship of the Greeks and Trojans, before they were voiced by human speech. The Vedic gods are thus sung: "Riding in chariots, charged with lightning, resounding with beautiful songs, and winged with horses."

Ancient Rome was also aglow with the war horse, even back to the dimmest of her early days. Incitatus was the favorite war horse of the cruel Roman Emperor Caligula. He made him both priest and consul, and he had an ivory manger and drank wine (as did priest and consul) out of a golden pail. The word Incitatus, in stately latin, stands for "Spurred on." Evidently he had speed.

Celer, the favorite horse of the Roman Emperor Verus, was fed on almonds and raisins and covered with royal purple and given a marble box stall in the imperial palace. Bucephalus, the favorite horse of Alexander the Great, would allow no one to mount him but his royal master, and to him he would always kneel. Alexander built a city for his mausoleum, which he named Bucephalus in his honor.

Flying Pegasus was one of the most brilliant of the Greek gods. Pegasus is represented as a winged horse that was always fed and watered by nymphs at springs and fountains.

He was the genius of poetic song and always appeared to the Greek poets as the inspiration of the dizziest poetic effort. It was the beautiful goddess Eos or Aurora, the personification of the morning dawn, "Who shot the Orient through with gold," called by Milton the "rosy-fingered morn," that rode the winged horse Pegasus. She rode him in the rosy blush of morn from the earth to high Olympus, the home of all the gods.

We learn that the god Neptune controlled all the waters of the great ocean (the Mediterranean Sea being the only ocean the Greeks knew) and that he created the horse. Homer in his Iliad sings of Neptune thus: "He yokes the chariot to his swift steeds, with feet of brass and manes of gold, and himself (Neptune), clad in gold, drives over the waves."

Professor Murray's Manual of Mythology, speaking of Neptune and his sea horses, says: "The sea rejoices and makes way for him. His horses speed lightly over the waves and never a drop of water touches the brazen axle."

This seems like an improbable horse story, but no more improbable than "Billy" Sunday's statement that he has driven the devil out of Washington.

THE HORSE IN THE RECREATIONS.

For nearly half a century nearly all our preachers with a few notable exceptions, Rev. Henry Ward Beecher and Rev. T. Dewitt Talmadge, have been denouncing horse racing as immoral and have been largely instrumental in putting this wholesome and recreative pastime under the ban of hostile legislation.

A very eloquent Chicago preacher, good intentioned and on the right track in denouncing an extravagant champagne supper of the "400" after the horse show, charges the horse show with the dissolute innovation. Here is where the learned divine is unlearned. The banquet after the horse show is not new, neither is there anything particularly new in the horse show. The modern horse show is a very old love that has come back in different guise and environment. And the after-feast of the so-called swell set, with the effervescent spirit in the champagne, is not new. Over twenty centuries ago in Rome, after the victorious charioteer had put away their billhooks, the Roman senators and consuls and captains of the Pretorian guards, who had won coin on the races, stamped with the phiz of Cæsar, adjourned to the room Apollo, where feasts were spread more lavishly than any dilettant midnight supper of our "400" after the horse show. Lucullus, a Roman consul, not half as well fixed as either Morgan or Armours, or even Thomas W. Lawson, gave a wine supper to the conquering soldier Cæsar and the more pompous Pompey, in which the brains of 100 peacocks and 500 nightingales were served as a delicacy in the room Apollo, and his wine bill alone was $6,500. If our Chicago preacher had said that human nature has changed but little since the Pagan of 2,000 years ago, so far as the habits and tastes of notable men are concerned, he would have come nearer to the bull's eye.

MOST FAMOUS WAR HORSES.

The Assyrian sculptures are the most ancient and are estimated to date some 4,200 years before Christ. And these sculptures contain more representatives of horses, caparisoned and equipped to ride, than of men.

THE FIRST VERIFIED WAR HORSE.

The first real horse that is fully verified as a war horse, or a horse of the heroics, is Bucephalus, the favorite war horse of Alexander the Great, who was born 325 years before Christ. Evidently the Macedonians were breeding horses for quality, as Plutarch, one of the earliest of reliable historians, says that Bucephalus was offered to King Philip, the father of Alexander the Great, for thirteen talents, or $12,500. It is not my purpose to mention any of the famous war horses of the Pagan world, except to note the fact that Bucephalus was the first war horse of heroic quality to get into current history.

THE HERO HORSES OF MODERN WARS.

Let us now skip 2,000 years of man's constant warring, including the so-called age of chivalry, and start our brief story of the horse heroics with the dying years of the eighteenth century.

If I should name six of the most famous hero horses of the Nineteenth Century, I would mention Marengo, the favorite

war horse of Napoleon; Copenhagen, the favorite of the Duke of Wellington; Cincinnati, the famous war horse of General Grant; Traveller, the noted war horse of General Robert E. Lee; Lexington, the horse General Sherman rode in the Atlanta campaign; and Winchester, the game and fleet black stallion that carried General Phil Sheridan from Winchester to Cedar Creek, twenty miles, that gray October morning in 1864. Winchester has the unique distinction of a continental commemoration in a dramatic war poem, and the further distinction of having his master for a biographer.

George Washington was a tried and capable soldier in the old French war, so-called of 1755, fighting on the side of England. When Washington, then a young colonel, accompanied the English commanding general, Braddock, in the old French war, he took with him three magnificent horses—English-bred hunters—from his Virginia estate. One of these horses, a dark gray stallion, named Greenway. In a fierce battle fought July 9, 1755, General Braddock was killed and his army defeated. Colonel Washington was his aid-de-camp. Braddock lost five horses shot from under him, a world's record, as I believe, and Colonel Washington had two shot under him. Writing of the battle nine days later at Fort Cumberland, to his brother John, Washington says:

"I have been protected by Providence beyond all expectation. I had four bullets through my coat and two horses shot under me, and yet escaped unhurt."

When General Washington left Virginia, June 30, 1775, to take command of the Continental armies, than at Cambridge, Massachusetts, he took with him five horses of his own breeding. His favorite was a magnificent bay stallion, sixteen hands high. When General Washington made his first appearance at Cambridge mounted on this magnificent horse, he enthused and charmed not only the army but the motley throng of revolutionary patriots gathered there to greet for the first time the hero of the epoch.

Before the close of the war, Washington acquired by gift and purchase seven other war horses. Fairfax was the name of the horse Washington rode the day he took command of the

army. At the battle of Trenton Fairfax was so badly wounded that Washington had to abandon him. At the battle of Monmouth, June 28, 1778, Washington rode a white horse—Blue Skin—presented to him by Governor Livingston of New Jersey. The day was excessively hot, and the heat and terrors of the fight killed Blue Skin. Washington then rode to the end of the fight that day a magnificent chestnut mare with flaxen mane and tail, called Dolly—rather a tame name for a battle horse. Another of Washington's favorite war horses was a light colored sorrel, sixteen hands, with a white face and four white legs. This stallion was a gift from Governor Nelson of Virginia, and Washington named him Nelson in honor of the donor. This horse lived to the end of the war, and General Washington rode him on the day of the final surrender of Lord Cornwallis, October 19, 1781. After the war Nelson led a life of ease at Mount Vernon. He survived his immortal Master and died at the remarkable age of thirty-six years. Thomas Jefferson often said that Washington was the greatest horseman of his time.

THE WAR HORSES OF NAPOLEON.

Probably the most famous war horse of the Nineteenth Century was Napoleon's Marengo. And horse lovers will wonder why it is that in all the many hundred biographies that have been written—in six languages—of the greatest empire builder of modern times so little has been said of the famous horses that carried him to victory in so many great battles.

We have the authority of Louis Napoleon, who said at Chiselhurst in 1872 that Marengo was the favorite horse of this great captain of the French. He was an Arab stallion captured from a Mameluke chief during Napoleon's Egyptian campaign. Marengo was about fifteen and three-quarters hands high, of very high style, and almost white. He was seven times wounded in battle. Napoleon rode him last at Waterloo, where Marengo was shot in the left hip. He, too, like Nelson, survived his master and died at the age of thirty-six years. Napoleon rode Marengo in the following great battles: Marengo, Austrelitz, Jena, Wagram, in the disastrous Russian

campaign, and at Waterloo. Another war horse of Napoleon was an Arab stallion named Ali. On the downfall of Napoleon a French gentleman purchased Marengo and another well tried war horse of Napoleon, named Jaffa, and transferred them to his estate in England.

On the 16th of May, 1797, Napoleon rode his famous war horse Marengo to the top of the bell tower of St. Mark's Cathedral in Venice, that he might signal to his fleet in the bay that the proud Queen of the Adriatic Sea had surrendered. This bell tower is 333 feet high, 45 feet higher than the lantern above the great central dome of our national capitol. With the exception of the fiery chariot horse that Elijah rode up to heaven, this is the most remarkable feat of dizzy-headed horsemanship ever recorded in either sacred or profane history. Napoleon had nineteen horses shot under him—the world's record.

Another famous horse that has been preserved true to life form is the war horse Stonewall Jackson rode the day of his tragic death. This horse is now the central attraction of the relic room of the Confederate Soldier's Home in Richmond, Virginia.

THE FAMOUS WAR HORSE OF THE IRON DUKE.

Copenhagen won his fame as the horse the Duke of Wellington rode at the decisive battle of Waterloo—a battle that ended the conquering career of Napoleon and gave enduring fame to the Duke of Wellington. Copenhagen has inspired more animal hero worship than any horse in all history, ancient and modern. Copenhagen was a powerful chestnut stallion, sixteen hands high, an English thoroughbred, a grandson of the famous race horse Eclipse. The Duke of Wellington bought him in 1813, paying 400 guineas for him, or $2,000. His magnificent form, style, and high quality is indicated by this price.

At four o'clock June 18, 1815, the day the great Duke and Copenhagen won immortal fame, Wellington mounted Copenhagen and was in the saddle continuous for eighteen hours. And when the day was done and the Duke had held his historic interview with the Prussian Field Marshal Blucher, the Duke dismounted and turned Copenhagen over to his orderly.

It will be remembered that the English Government presented the Iron Duke with a splendid estate for his good day's work at Waterloo. The Iron Duke's last act before leaving Strathfield, a few days before Copenhagen's death, was to walk out to his paddock and pet the great war horse who carried him to immortality at Waterloo. The Iron Duke's eldest son, known as the second Duke of Wellington, erected two monuments, one to the Duke and the other to Copenhagen, both of Italian marble. The monument to Copenhagen stands under the shadow of a large Turkish oak on the estate presented to the Duke, where the famous horse was buried, with this inscription:

"Here lies Copenhagen, the charger ridden by the Duke of Wellington the entire day at the Battle of Waterloo, Born, 1808; died, 1835."

During the Civil War I saw nearly all the commanding generals of the Army of Ohio, the Army of the Cumberland, the Army of the Tennessee under fire. I saw General Hooker several times under fire, once at Resaca. I saw him in the full uniform of a major general, yellow sash and all the plumes, riding at the extreme front, almost abreast of our advance skirmish line. He was mounted on a powerful high-headed bay stallion, red nostriled and furious, the most daring and inspiring figure I ever saw on a battlefield.

GENERAL JOHN A. LOGAN

was the incarnation of vital energy and reckless courage. I saw him ride at the front to Atlanta and rally the staggering battalions, after the death of General McPherson, in that fierce conflict of the 22d of July. Logan rode that day his famous war horse, Black Jack, a coal-black horse that he rode in many battles. Black Jack was poisoned by the political enemies of General Logan, in Southern Illinois, after the war, during a heated campaign. They fed Black Jack a pound of ground glass.

I saw General McPherson as he rode to his death at Atlanta. Next to General Joe Hooker, he was considered the finest mounted officer of our army. I saw him often under fire during the Atlanta campaign, always splendidly mounted.

I saw General Sherman under fire at Atlanta and at Kenesaw Mountain. His favorite horse was Lexington, presented to him by admiring friends when he commanded the Department of Kentucky. General Sherman was never an impressive figure on horseback. As he rode through our lines on the march during the Atlanta campaign, sometimes at midday and sometimes during the midnight march, he always rode with bowed head in fatigue uniform.

GENERAL JAMES B. STEEDMAN.

The first distinguished soldier I ever saw under fire was General James B. Steedman, then colonel of the Fourteenth Ohio Volunteer Infantry, in the battle of Philippi, the first battle of the Civil War. He won his twin stars in the fiercest part of the Chickamauga battlefield, and at the most critical period of the conflict. It was here that General Steedman snatched the flag of the One Hundred and Fifteenth Illinois from the hands of the color sergeant, when the regiment was in retreat, ordered the "About face," and "Follow your General." The regiment obeyed, and Steedman spurred his war horse up the death-swept slope, carrying the flag. A few leaps into the hell of fire and the horse was shot dead and General Steedman was thrown violently far over his head and severely stunned. But he was too game to leave the field. The horse he rode at Chickamauga was a magnificent bay gelding of commanding style, over sixteen hands high. He was captured at Mills Springs in the battle in which the Confederate General Zollkoffer was killed. Hence this horse, that died the hero's death at Chickamauga, fought on both sides of the conflict.

GENERAL PHIL SHERIDAN.

General Sheridan's ride and rally of the retreating army at Cedar Creek does not rank in importance with General Steedman's forced march and saving service to the Army of the Cumberland at Chickamauga, but Steedman had no poet and

Sheridan had one inspired. The greatest dramatic poem of the war, written by that Ohio poet, T. Buchanan Read, could never have been inspired except for the fleet stallion that carried General Phil Sheridan from Winchester to Cedar Creek that gray October morning in 1864. He rode a coal-black stallion, over sixteen hands high, three-quarters thoroughbred. After the battle he was named "Winchester." Before the battle he was called "Rienzi."

GENERAL GEORGE A. CUSTER.

General Custer, mounted, was an inspiration. He was a devotee of the horse and was always talking about his war horses. From the time he left West Point to join the army, in the Civil War, until the close of his eventful life in June, 1876, his daily life was largely on horseback. Probably the man never lived whose endurance in the saddle was greater than his. The favorite war horse of General Custer was a brown horse, called "Dandy." He was fifteen and one-half hands high, a compact, muscular horse, fine head and neck. He marched in the ranks of Custer's little army of daring troopers on June 25, 1876, against the confederated tribes of the Sioux, that terrible day of the massacre of Custer and his men, in the valley of the Little Big Horn, and was shot through the shoulder. He lived, however, and was sent to General Custer's father at Monroe, Michigan. The horse was the only living being that survived the Custer Massacre.*

GENERAL U. S. GRANT.

I first saw General Grant mounted near Raleigh, North Carolina, at the grand review of Sherman's army, after the final surrender of all the armies of the Confederacy. General Grant was never a showy soldier on horseback, like Hooker, McPherson, or Custer. He was too short-bodied, square shouldered, and short necked to make a picturesque figure on horseback. His most famous war horse was Cincinnati, presented to him by some of his admiring Ohio friends at Cincin-

*This is incorrect. The sole survivor of the Custer Massacre was Comanche, the horse that was ridden by Captain Miles W. Keogh. He lived for many years and was never allowed to be ridden. On his death, his skin was stuffed and is now in the Museum of the Kansas University.—*Editor.*

nati previous to his taking command of the Army of the Potomac. Neither was Grant a theme for the song poets of the war, like Sheridan and the yellow-haired Custer, or General Lee, Stonewall Jackson, or Albert Sidney Johnson, of the Confederates.

GENERAL PAT CLEBURNE.

The two Confederate generals that I saw nearest in both life and in death I saw in that desperate charge at Franklin, November 30, 1864. These two were General Pat Cleburne and General John Adams. General Cleburne was the most dashing division commander of Hood's army. General Adams and his horse fell at the left front of my command and General Cleburne a few yards to the left. My mount, a crow-black mare of high mettle—Firefly—that I had ridden in twenty battles, was shot about the time that Cleburne fell. She reared high in the air and fell with a stunning thud. But I was young and spry then and up again in time to be at the culmination of the charge—the awful clash of hostile bayonets in that ghastly carnival of blood.

I have corresponded with a number of Confederate soldiers, including Captain Sykes of Aberdeen, Mississippi, who served on General Cleburne's staff at Franklin, but could get no information of his war horses. I have also some lurid and enduring battle memories of General "Pap" Thomas, Burnside, Stanley, Scofield, O. O. Howard, A. J. Smith, Rosecrans, Slocum, McCook, Buttergield, Stoneman, Couch, Opdyke, Hobson, Cox, and many others.

It is worthy of mention that the city of San Antonio, Texas, presented General Pershing with a magnificient saddle horse when he left to take command of all our armies. General Pershing, mounted on this horse in Paris, created the wildest enthusiasm and the city of Paris presented General Pershing with the finest war horse (French breed) that money could buy. It was largely due to these two magnificient thoroughbreds that General Pershing was made the popular idol of the French Republic.

THE HORSE IN THE HEROICS.

From time immemorial the horse has been immortalized with his immortal master. He has been perpetuated in stone

and iron and bronze with the poets, philosophers, and soldiers of the world.

In Berlin it is Frederick the Great and his horse.

In Trafalgar Square, London, it is Lord Wellington and his horse.

In Paris it is Napoleon and his horse.

In our National Capitol it is Grant and his horse, Jackson and his horse, Sherman and his horse, General Logan and his horse and glorious old "Pop" Thomas and his horse.

In Richmond it is Washington and his horse, Robert E. Lee and his horse, and Stonewall Jackson and his horse.

On the obelisks of dead Egypt, on the Arch of Trajan at Rome, and the arch of triumph that Napoleon built in Paris to celebrate his victories, the horse and his hero rider are multiplied on every ascending circle.

The Old Testament prophetess Miriam, taking her timbrels to swell the song of triumph which Moses gave to the poetry of the ages, in celebrating the drowning of Pharaoh and his cavalry in the Red Sea, says:

"Sing ye to the Lord, for He hath triumphed gloriously. The horse and his rider He hath thrown into the sea."

You will notice that the inspired prophetess gives the horse first mention, over the soldier, doubtless on his merits, as the more humane of the two.

Darwin does not tell us in his great work on the evolution of the human race the number of years which elapsed between the development of the man-like ape and the ape-like man, but since history was born in the womb of dead centuries, we know that the horse with hoofs has been co-existent with the devil with hoofs. Professor Leidy, very high authority, says "The prehistoric man had a prehistoric horse for companion." We have the same authority for the statement that the horse in a wild sate existed on this continent long before Columbus discovered America. Probably the prehistoric man and the prehistoric horse were cavorting over the hills and through the valleys of the American continent long before Adam and Eve were browsing the apple blossoms in the Garden of Eden.

The trend of all Christian civilization from the Pharaoh of the Exodus to General Phil Sheridan is to paint the horse in the heroics. In the glamors of war, in the wild witcheries of chivalric missions to Jerusalem, amid the gloom and glory of the holy crusades, in the conquests of Mexico and Peru, and in all our modern wars the horse is everywhere a potent and puissant factor. And in the peopling and advancement of the United States, before the advent of steam and electric motors, the horse has ever been recognized as man's greatest helpmate.

Nowhere is the horse of the heroics more conspicuous than in sculpture. Sculpture beats history and is more potent than books, which only speak language. Some twenty languages have passed into the grave along with dead nations, while the monuments and statues and tombs built by these dead nations still stand. The Roman Empire is dead and the Roman race has died out of Italy, but the heroic statue of Cæsar mounted on his war horse crossing the Rubicon still stands. The Latin language is dead, but the arch of Trajan and his horse still stands. Napoleon is dead and his empire is dead, but the arch of triumph that the Great Corsican built in Paris to celebrate his victories, with the horse and his hero rider multiplied on every ascending circle, still stands. The ancient city of Moscow, once the templed capital of the Russian Empire, has its most forceful reminder of its past in the heroic statue of Peter the Great and his horse.

Old Egypt, when in the golden age of her best civilization, was devoted to the horse. Her pyramids, which are still standing, ages after her civilization has perished, are silent witnesses that the early Egyptians were patrons of man's best animal friend.

And China, whose history, both heroic and mythologic, outdates all the civilization around the world, once held the horse sacred above all the other animals. The Chinese account of the creation of the world beats all the world's records. The sacred books of Confucius claim that 2,267,00 years elapsed between the time when the powers of heaven and earth united to produce man, and of course, that man was a Chinaman.

Professor Starr of the Chicago University, in his valuable book entitled "First Steps in Human Progress," discusses in a cursory way early Arabic civilization. He says in his book that as far back as Egyptian records go we find the horse in use, and in China are records of his presence and use as a tamed animal for thousands of years.

The biological student of the real human essence calls health the full and free manifestation of life. The life that is worth living is the life that is full of vigorous, healthy enjoyment. Of all the games to amuse and entertain, the horse furnishes the most recreative and the most morally wholesome. Our mental and physical lives are indissolubly linked together.

Some men imagine themselves moral reformers when they are only solemn and morose from a torpid liver. A torpid liver may promote indigestion, but never a high moral inspiration.

We shall always have machine motors, as we have wax flowers and crockery dolls and paste diamonds. But wax flowers will never shed fragrance on the bosom of a divine woman like the God-blown blossoms, and crockery dolls will never take the place of real babies; neither will the counterfeit blaze of paste diamonds ever mock successfully the brilliant rainbow tints of the real gems. And the live horse, the horse of history and poetry and sculpture and the heroics, will ever remain man's best and most welcome animal friend. The horse stands for good health, for life that is full of life, for pure air and sunshine; and let no lean-headed, crimpled-mouth claquer masquerading as a teacher of grim gloom and between us and the sun. In all countries and in all ages the horse is inseparately associated with human history and development. No other animal has such omnipresence and no other animal has ever exerted such a potent force in the evolution of the human race. Sculpture is radiant and glowing with monuments and arches and frescoes commemorating heroes, poets, prophets, and great generals who were devotees of this most alluring and beneficent of all God's best gifts to mankind.

The best and widest field for reformers today is to aid in the repeal of all restrictive laws that are dead and have never been enforced and to help us learn the lesson that all history teaches—that you cannot legislate virtue in the hearts of men. The only way to inculcate virtue is to have the teachers practice it. A boy is like a calf. When he gets full of the milk of human

kindness he wants to kick up and play and give vent to the life that is in him; and the man is only the developed boy. Some men are never developed.

The bicycle, that was a crazy-headed fad twenty-five years ago as a recreative motor, left us a heritage of some six distinct nervous and spinal disease, with no counter benefits; and the auto, more useful, more recreative, more alluring, killed more human beings last year than the horse in a century.

I am here not to exploit the war horse exclusively, but the horse of the recreations, the horse of peace, the horse that carries his master in the exhilaration of the wind, along pleasant valleys, by running brooks, and meadows green with verdure, by woods vocal with the song of birds, to make him forget his nervous worry over business cares and catch an appetite and the serene joy that awaits good digestion and a conscience devoid of guile. I still hope that the live horse will ever be the most wholesome recreative factor for the live man; and he is only good when alive, not, like the miser of the pig—no good to the world until after death.

OUR WAR WITH GERMANY.*

IX.

(November 14th—December 4th.)

THE change in publication date of *The North American Review* rendered necessary by the difficulties of distribution encountered under war conditions, makes our ninth monthly review of "Our War with Germany" coincide with the close of the eighth calendar month of American participation in the great struggle. It has been a month of steady progress in the chief task before this country, that of preparation for the real field work that is yet to come, but there has been no announcement of any conspicuous achievement by American forces in that period. Just at its close official publication was permitted of the news which had been whispered about among the knowing insiders for several weeks that the so-called "Rainbow Division" of National Guard troops was safe in France. This division is composed of men from practically every State in the Union—hence its name. It was transported across the Atlantic without the loss of a man, and without any untoward experience. Announcement of its arrival was withheld by the authorities in this country until the news was passed by General Pershing's censor.

The outstanding events of immediate importance in the war during this review period occured chiefly in other lands, and with slight, if any, American participation. One, the results of which cannot yet be measured even in estimation, was the complete collapse of government under responsible authority in Russia, and the triumph of unrestrained radicalism under the pro-German Bolshevik leaders Lenine and Trotzky. Kerensky, in flight or in hiding, seems definitely out of the reckoning as a

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factor in Russia's future, although in the maze of conflicting reports from that troubled land there continue to come some which indicate the possibility of a revival of his influence. There are reports also that General Kaledines, the leader of the Cossacks, is coming to Moscow with an army that aims at the overthrow of the Bolshevists and the restoration of responsibility in the government.

Meantime Lenine and Trotsky, having thrown all of Russia's engagements with her allies to the winds, and having published the confidential papers in the Foreign Office files, have offered an armistice to Germany and are proceeding, at this writing, to enter upon negotiations with the German representatives. Germany approaches the desired negotiation with a certain caution and reserve, which seems well grounded in view of Trotzky's announcement that every word of the negotiations is to be taken down and published, and that Germany is to be asked to answer certain interesting questions. They are not specified, but if they conform to the record of Lenine and Trotzky it can be well understood that it will be exceedingly difficult for the German representatives to answer them satisfactorily to the Russians and at the same time retain their influence in Berlin. It would be an extraordinary thing if this Russian collapse should yet prove to be a factor in fomenting disturbance in Germany.

News from the Italian front has been cheering as that from Russia has been discouraging. The Italian army that was so hard pressed when it reached the line of the Piave as to make it almost touch and go whether that line could be held or not seems now to have definitely mastered the situation. It has recovered its self-confidence and made good its stand on that river, so that the official reports from Berlin and Vienna tell of Italian rather than of German offensive actions. And just as this is written the announcement is made that the British and French reinforcements are in position along the river, and that danger of further advance by the Teutonic forces is minimized.

This news from Italy comports with the reports from the British front in France, where Lieutenant General Sir Julian Byng genuinely surprised the Germans, in the latter part of November, and threw them back something more than six

miles, in front of Cambrai, and made gains along a thirty-two mile section of his line. General Byng commanded the Canadians in their great victory at Vimy Ridge last spring. For this attack he gave the Germans no warning by way of artillery preparation. He relied on the tanks, and the dash of his men, to get through the wire entanglements and over the obstructions, and his calculations were right. Starting with a rush and without preliminary and warning fire, on a misty morning, his men were on top of the Germans before they had an inkling of what was coming. It took the surprised Germans some time to recover, and before they got reinforcements and stiffened their defences their lines has been badly broken, many thousands of prisoners and some hundreds of guns taken.

There have been reports that General Byng got the suggestion for his charge in methods from a remark by General Pershing, soon after he went to France, to the effect that no substantial gain was likely to be attained on either side except by the adoption of new tactics. But there is no confirmation for this. There are reports which seem authentic, however, that in some of the furious fighting which has been going on in that sector since Byng's surprise attack detachments of American troops have borne themselves with conspicuous gallantry.

America's chief part in the war—outside the routine of preparation at home and in France—has been the participation in the Allied War Council in Paris. The fight on Lloyd George which was precipitated by his announcement in Paris, when on his way back from Rome, of the formation of this Council, came to its crisis just as Colonel House and his colleagues reached London. Lloyd Geroge met it squarely in a speech in the Commons. A singularly felicitous coincidence was the recepit by Colonel House of a telegram from President Wilson saying that the United States Government considered unity of plan and control between all the Allies essential to the achievement of a just and permanent peace.

The French Government which took the initial steps toward this Allied Council having fallen on one of those questions of the propriety of the conduct of a member of the Chamber

which have upset so many French cabinets. Clemenceau the "Tiger" became Prime Minister just in time to head the French delegation in the Allied Council.

The Council met at Versailles on November 29th. Colonel House having deftly suggested in advance that the Council was organized for work, not for oratory, speeches were omitted, and its deliberations were over and the members on their way home in three days. The first reports are that much of substantial benefit was accomplished, although no particulars were announced, except that an agreement had been reached for standardization of aeroplanes for allied service.

The reception to the Americans in London and Paris demonstrated again the enthusiasm in Britain and France over American participation in the war, and the readiness to receive American suggestion shows that appreciation of what our part may ultimately be.

Naval participation, in the way of convoying ships and hunting submarines, has continued in the same quiet, effective way, and although there has been a little increase in submarine sinkings in the latter weeks as compared with the first of the month, the total for the period was encouragingly low. One stirring tale of American activity was permitted to sift through the censorship. It recounted how two destroyers sighted a submarine, and first one and then the other dashed across its trail, dropping depth charges, some of which were successful. The submarine was forced to the surface, and when its crew surrendered the destroyer men endeavored to tow the submarine to port. They got a line to it, but the Germans had opened the sea cocks and the prize sunk.

Army preparation at home has seen the cantonments and camps brought nearer to completion, and the belated supplies of clothing for the men brought to such a stage that issue of woolens could be increased, especially in camps where colds and pneumonia were becoming unpleasantly frequent. Toward the close of November Surgeon-General Gorgas published the fact that septic pneumonia was prevalent in some of the camps, following an epidemic of measles. The shortage of equipment has been felt only in the camps in this country. All the men who have gone "over there" have been fully supplied, and

full supplies of everything are in reserve in France to meet all possible requirements.

The ever-present and ever-pressing problem of labor has continued throughout the month to furnish the greatest anxiety to those who are charged with responsibility for carrying out the Government program of production. The situation is one of extreme difficulty on both sides. In some lines of employment wages have either not increased at all or the increases have not been at all commensurate with the increased cost of all the necessities of life that the men and their families must buy. With costs of living what they are, and with wages generally so high, and especially with employers often endeavoring to hire men away from one another by voluntarily increasing wages already very high, it is not surprising that there should be unrest and dissatifaction among many of the men. The leaders of organized labor, as a rule, have worked in close co-operation with the Government to prevent any curtailment of production through stoppages of work. They have had some difficulty in securing compliance with their instructions by their followers. Disturbances on the part of shipyard workers on both coasts have threatened constantly, but thus far all but rather minor troubles have been prevented. The railroad brotherhoods, who secured the enactment of the so-called eight-hour law during the Presidental campaign of last year, have now submitted a demand for wage increases for the men on the eastern roads which would aggregate about $109,000,000 a year.

In a letter to Judge Chambers, Commissioner of Mediation and Arbitration, President Wilson, discussing the railroad labor situation, intimated that the Government might be forced to take over the running of the roads. Of the implied threat on the part of the brotherhood men to strike the President said: "It is inconceivable to me that patriotic men should now for a moment contemplate the interruption of the transportation which is so absolutely necessary to the safety of the nation, and its success in arms, as well as to tis industrial life. * * * The last thing I would wish to contemplate would be the possibility of being obliged to take any unusual measures to operate the railways."

Judge Chambers continued to exert himself to effect a settlement, but evry day brought only conflicting reports of what the men and the roads would agree to do. Finally, on November 19th, Fairfax Harrison, chairman of the Railways War Bond, wrote to Judge Chambers, saying: "As no interruption of continual railroad operation can be tolerated under war conditions, we are ready, should any crisis now arise, unreservedly to place our interests in the hands of the President for protection and for disposition as he may determine is necessary in the public interests."

On November 20th, the convention of the American Federation of Labor voted unswerving loyalty to the country, and a determination to stand behind the Administration until peace comes.

Two days later the four brotherhood chiefs had a two hour conference with the President at the White House. At its close they issued a statement saying: "If a situation should arise which would threaten the interruption of transporation the men would be more than willing to discuss and consider any solution of the difficulty which presented itself, doing so in the spirit of patriotic co-operation, and would undoubtedly co-operate with the Government to the utmost extent in arriving at a just, equitable as well as patriotic conclusion."

The White House also issued a statement saying that the President got from the conference "exactly the impression conveyed by the statement of the heads of the brotherhoods, namely, that the men whom they represented were not inclined to contend for anything which they did not deem necessary to their own maintenance and the maintenance of their families."

Meantime both operating and financial conditions with the roads have become well nigh desperate. Traffic congestion has become such that the Railways War Board has seriously considered the curtailment of non-essential industries. A list of 450 non-essential commodities was prepared, to which there were added 75 other commodities shipment of which might be dispensed with or postponed until the congestion is relieved. The board prepared a statement showing the enormous increase of traffic caused by the war. In the first five months of our participation in the war the traffic was 16 per cent. higher

than in the corresponding period in 1916; 50 per cent. greater than in the same months of 1915, and greater than the total traffic of any year prior to 1904. Coal movements were 18 per cent. greater than in the corresponding period of last year. There were 150,000 more cars of anthracite and 751,000 more cars of bituminous coal than last year, and still there are complaints of coal shortage. The railroads have moved 116,000 car loads of freight to army cantonments and National Guard camps, and 17,000 cars for the Shipping Board. The passenger traffic has been the largest ever known, and in addition to that the roads have carried 1,200,000 soldiers to camps, cantonments and ports. The movement of troops has involved the use of 2,750 special trains, and the camps are taking 75,000 cars of supplies every month.

On November 23d, the Railways War Board moved to secure relief without waiting for action by the Interstate Commerce Commission or Congress. A number of suggestions were made, including abandonment of competing passenger service and the pooling of all roads east of Chicago. The next day it was announced that the Board had given directions covering these suggestions, after consultation with government officials. The operating vice-presidents of the eastern lines met in Washington on November 26th to work out pooling plans. They encountered many difficulties which will demand legislative relief. They resolved on pooling all available facilities and appointed a committee of seven to take charge of the pool. This is another of the numerous violations of the Sherman law which the war has proved to be absolutely necessary, and to which the Government is a party. These war experiences may well bring to a climax the demand for the amendment of repeal of the Sherman law which began in a Presidental message to Congress twelve years ago.

In a speech at Baltimore about the middle of November Secretary McAdoo made public the startling information that the ordinary expenditures of the Government were running about $325,000,000 a month, instead of the billion a month that had been estimated. The expenditures of the War Department, for instance, had been about fifty per cent. of what had been estimated. This was perhaps only another way of ad-

mitting that the margin between what we had been doing in the way of production of supplies for our Allies and the total of our productive capacity was not as great as had been estimated. We could not spend as much per month as had been figured because we could not make as much more than we had been making as we estimated we could. Loans to our Allies aggregate more than three billions. Actual credits to them by the Treasury run $500,000,000 per month, but cash disbursements against these credits were considerably less, and of these a very large part was for purchase in this country, so that these transactions involved chiefly shifting of credits. On November 1st the United States held one-third of the world's total stock of gold.

Congress met for the regular session on December 3d, and received the estimates from the different departments for the fiscal year 1918. They aggregate something more than thirteen billions without counting any loans to our Allies. Of this incomprehensible sum the War Department asks for about ten billions.

Throughout the month Dr. Garfield, the Fuel Administartor, has been in trouble over the prices and the supply of coal. Price adjustments have been made in some cases, always up, with a view to increasing production and permitting wage increases. An increase of thirty-five cents a ton on anthracite was made to cover a demand for more wages. Labor troubles have threatened throughout the month, and there has been much difficulty about priority of shipments in order to prevent hardship. Coal production is far ahead of last year, but consumption has increased also so greatly that there is an actual shortage fo about 50,000,000 tons. Preference in shipment has been ordered generally now, covering Government orders, railways fuel, domestic requirements, public utilities and munition plants.

On November 23d, the producers of bituminous coal in Ohio, West Virginia, Kentucky, Pennsylvania, Michigan and Tennessee pooled their output, with the sanction of the Government. It was another case of war necessity and never mind the Sherman law. The Government is the only one that can

prosecute for violation of that law, and the Government is a partner in the violation.

November saw another reorganization in the Shipping Board, caused this time by the ill health of Admiral Capps, General Manager of the Emergency Fleet Corporation. He was not in good health when he undertook the task, and the overwork to which he subjected himself increased his illness so that he had to ask for relief. Rear Admiral Harris, chief of the Bureau of Yards and Docks of the Navy Department, was appointed to succeed him, Mr. Hurley, chairman of the Shipping Board, having asked for the appointment of an officer of Admiral Capp's corps to succeed him. An announcement of the construction program of the Shipping Board shows that it has in prospect 1,409 vessels of an aggregate deadweight tonnage of 8,363,808.

At this writing, President Wilson is about to deliver his eagerly awaited address to Congress.

X.

(December 4th—January 3d.)

The ninth month of American participation in the World War opened with a technical extension of our responsbilities through a formal declaration of war against "the Imperial and Royal Austro-Hungarian Government," upon the ground that it "has committed repeated acts of war against the Government and the people of the United States." The joint resolution making this declaration passed the Senate on the afternoon of December 7th, after a very brief debate, by a unanimous vote. Several Senators who opposed the declaration of war against Germany voted for this resolution. Senator La Follette left the Senate chamber while the debate was proceeding and returned just after the vote had been taken. He explained then that he had gone to his office to draft an amendment to the resolution, embodying a declaration that the United States would not agree to depriving Austria-Hungary of any

territory which it held on August 1, 1914. If that amendment had been accepted he would have voted for the resolution, otherwise he would have voted against it.

In accordance with the recommendation of the message of the President the declaration was confined to Austria-Hungary, and did not include Bulgaria and Turkey, although there was strong sentiment in both Senate and House for such inclusion. In the Senate the vote was 74 ayes and no nays. In the House, which voted a few minutes after the Senate did, there wsre 365 ayes, including the lady from Montana, Miss Rankin. One negative vote was recorded in the House, that of Meyer London, Socialist, of New York.

While the United States was thus extending the range of its war activities, and making new efforts toward the effective organization of its war resources, the peace talk that has accompanied all operations in Europe for many months took on more volume and a little more possible direction than ever before. This was due, in chief part, to the Russian collapse and the attempts of the Germans to secure the largest and most immediate advantage from that situation. The peace conference, preparations for which occupied a considerable share of public attention the world over for several weeks, met formally at Brest-Litovsk on December 22d. It was attended by delegates from Germany, headed by von Kuehlmann, the Foreign Minister; Austria-Hungary, headed by Count Czernin; Bulgaria, Turkey and Russia. The Russians submitted terms including (1) No annexations, and prompt evacuation of occupied territory; (2) Restoration of political independence to nations that have lost it during the war; (3) Right of self-definition for non-independent national groups; (4) Defense of rights of minorities in mixed nationalities where possible; (5) No contributions. Private losses to be indemnified from general fund contributed by all belligerents; (6) No economic boycotts; self-determination for colonies.

Pending the reply of the Teutonic delegates to these proposals the Kaiser addressed the Second German Army, on the French front, saying: "If the enemy does not want peace then we must bring peace to the world by battering in with the iron fist and shining sword the doors of those who will not have peace."

On Christmas day, Count Czernin, for the Teutonic Allies, submitted a response to the Russian statement purporting to accept the principle of no annexations and no indemnities, but declaring that the Russian proposals "could be realized only in case all the Powers participating in the war obligate themselves scrupulously to adhere to the terms, in common with all peoples." Political independence to be restored to those nations which lost it during the war, but self-definition of non-independent peoples "must be solved by each Government, together with its peoples, in a manner established by the Constitution." Furthermore, "the protection of the rights of minorities constitutes an essential component part of the constitutional rights of peoples to self-determination." The Teutons were ready to renounce indemnification for war costs and war damages, but each belligerent must pay the expenses for maintenance of its war prisoners "as well as for damage done in its own territory by illegal acts of force committed against civilian nationals belonging to the enemy." This last clause was apparently laying a foundation for use in the case of settlement for Belgium.

As to the last clause of the Russian terms, covering colonies, Germany, being the only one of the Teutonic Allies possessing colonies, replied alone, with the assertion that "the return of colonial territories forcibly seized during the war constitutes an essential part of German demands, which Germany cannot renounce under any circumstances." Germany also declared that the right of self-determination, as far as her colonies were concerned, "is at present practically inpossible." The Russian principles of economic relations were approved wholly and claimed as their own by the Teutons.

The submission of this statement by the Teutonic Allies caused the Russians to ask for a ten days recess of the conference in order that they might submit the proposals to their allies. As this is written the cable reports that the Russian delegates have broken off negotiations and returned to Petrograd because of German insistence on holding strategic points in Poland and elsewhere.

Not a ripple was produced in Washington by this German peace move. The only opinion expressed by public officials and prominent men generally was that it was the best to follow the leadership of the President. The White House maintained absolute silence on the subject. It was obvious that the essential requirement for peace laid down in the President's reply to the Pope, when he declined to treat with the present German Government because it is not to be trusted, is not attempted to be met by the Brest-Litovsk proposal. Our European allies, having accepted the President's leadership and statement of war aims on previous occasions, seem disposed again to await his response to the invitation from Brest-Litovsk.

While our enemies are maneuvering to obtain the utmost possible advantage, by peace or otherwise, from the collapse of Russia, our own preparations for effective war making are progressing with materially increased speed. The close of the month was signalized by the issuance of a proclamation by the President, on December 26th, putting all the railroads of the country under Government control for the period of the war, and appointing William G. McAdoo, Secretary of the Treasury, to be Director General of Railroads. This action was taken under authority of the Act of August 29, 1916, the army appropriation act—which empowers the President, "in time of war * * * to take possession and assume control of any system or systems of transportation, or any part thereof, and to utilize the same, to the exclusion, as far as may be necessary, of all other traffic thereon, for the transfer or transportation of troops, war material and equipment, or for such other purposes connected with the emergency as may be needful or desirable."

The Director General was empowered by the President to perform the duties laid on him through the directors and other officials of the railroad systems, and except as the Director General's orders provide the roads remain subject to the existing laws and the regulations of the Interstate Commerce Commission, and to the orders of the regulating commissions of the various States. But the orders of the Director General are specifically made paramount.

Of utmost importance to the roads themselves was the paragraph of the proclamation providing that the Director

shall negotiate with the roads for "just and reasonable compensation for the possession, use and control of the respective properties on the basis of an annual guaranteed compensation above accruing depreciation and the maintenance of their properties, equivalent, as nearly as may be, to the average of the net operating income thereof, for the three year period ending June 30, 1917."

Director General McAdoo assumed control of the roads under this proclamation at noon on December 28th, but for the purpose of accounting the Government control did not begin until midnight of December 31st.

It has been apparent throughout the month that something of this kind was soon to come. On December 5th, the Interstate Commerce Commission submitted a special report to Congress pointing out the necessity of operating the railroads of the country in a unified system in order to solve the perplexing problem of furnishing adequate transportation during the war. Two alternatives were suggested by the Commission. One involved special legislation permitting conjoint operation under the existing management of the roads. This necessitated the repeal or suspension of the anti-trust and anti-pooling laws so far as they applied to combinations of railroads, for both Federal and State laws and in the way of such a combination of railroads as is necessary to carry out the plan. The other suggestion was for the President to take over control of the roads under the Act of August 29, 1916. The Commerce Commission suggested that if this were done Congress should provide ample return to the roads for upkeep, betterment and use while under Government operation.

The Commission advised Congress in this report that if the roads were to continue to operate under their own control it would still be necessary for the Government to assist in financing them, because of heavily increased expenses, and because of Government occupation of the securities market with bond sales for war expenses and for loans to allies. Even if the fifteen per cent. increase of freight rates asked by the roads were granted by the Commission they would find difficulty in providing adequate war service.

The railroads had been operating under a voluntary co-operative agreement effected early in April. The Railways War Board, consisting of a committee of railroad executives selected by the roads, under the chairmanship of Fairfax Harrison, head of the Southern Railway, believed that the voluntary system of unification was adequate to secure maximum efficiency. Mr. Harrison pointed out that no interest had declined, for selfish reasons, to respond to the requirements of the co-operative organization. He declared that the roads needed a Government traffic manager, to represent all Government departments and secure prompt and orderly transportation of Government traffic and avoid the excessive, wasteful and hampering issuance of preference orders, which had been the chief cause of congestion and delay in transportation. The roads also needed supplies and equipment which had been ordered and which they were ready to pay for. But priority orders were needed to obtain the 3,800 locomotives and 33,000 cars under order. Also, 2,000 additional locomotives and 150,000 cars would be needed for 1918. An increase in rates was needed to meet the increase in operating expenses, but Government aid was needed also in providing new capital for equipment.

The necessity of operating the railroads of the country in a unified system was emphasized by the inability of the Fuel Administration to prevent coal shortage and famine in different sections, despite all that could be done through priority orders and through such efforts as could be exerted in the absence of complete control. Dr. Garfield, the Fuel Administrator, told the Senate committee which was investigating the coal situation that the policy of competition which had been adopted by the United States had made impossible the employment of the railroads in one combined system, but that such employment of the roads was essential to the relief of the fuel shortage.

The first order of Director McAdoo was a telegram to all railroad presidents and directors requesting them to "move traffic by the most convenient and expeditious routes." Thus the pooling of the railroads was made effective. Mr. McAdoo asked the Railways War Board and all the co-operating committees formed under it to remain in service "for the present." Three days later, however, he accepted the resignations of the Board and appointed an Advisory Committee headed by John Skelton Williams, Comptroller of the Currency, with whom are associated Hale Holden, President of the Burlington, a member of the old Railways War Board; Henry Walters, of the Atlantic Coast Line; and Edward Chambers and Walter D. Hines, of the Santa Fe. He also appointed A. H. Smith, President of the New York Central, to be supervisor of the trunk lines in the East and North, and Mr. Smith issued his first orderes aimed at clearing up all congestion.

Mr. McAdoo accompanied these moves by orders annulling all previously issued priority orders and abolising the authority of army and navy officers in supply and other bureaus to "blue tag" Government shipments and demand priority for them. He prescribed also the abandonment, as far as practicable, of long-haul passenger trains to and from New York which interfere with freight traffic; the common use of Pennsylvania tracks, tunnels and station in New York, for freight traffic, and the common use of railroad owned water carriers at New York and New Jersey freight terminals.

The immediate purpose of these orders was to relieve the freight congestion and put an end to the coal shortage that was nearing the famine point in and about New York City. As Mr. McAdoo was issuing these orders, C. C. McChord, a member of the Interstate Commerce Commission, was testifying before the Senate railroad investigating committee that the priority order system had increased railway congestion instead of relieving it. He said that more than half the shipments were under priority orders, and that they tended to disorganize the whole transporation system. He told of a naval officer who issed a priority order on a shipment of anchors to a shipyard before work on the ships was started. The Priority Board, the War and Navy Departments, the Food Administration, the Fuel Administration, the Car Service Commission and the Interstate Commerce Commission had all been issuing priority orders. The multiplicity of them was not only congesting the railroads, it was interfering with the industries of the country and directly menacing the success of future Liberty Loans.

Mr. McAdoo opened the New Year with an order giving

coal for New York City right of way over passenger service through the Pennsylvania tunnels and terminals in the city. Drastic interference with passenger service all over the country resulted from the efforts to relieve freight congestion. Railroad officials and Government authorities joined in impressing it upon the public that unnecessary travel was discouraged. In many ways accommodations were curtailed—by the withdrawal of chair and sleeping cars, dining and buffet cars and the reduction or withdrawal of special service of all kinds. Commutation service into New York was reduced by several roads, both in number of trains and in time of transit.

The reassembling of Congress was accompanied by the submission of the estimates of expenditures from the different departments and bureaus of the Government for the fiscal year of 1919, appropriations for which must be made at this session. These estimates aggregate thirteen and a half billion dollars. But they do not include any loans to our allies, which have been authorized to the extent of seven billions for this fiscal year. If loans to allies reach a similar sum in the next year the total of estimated appropriations will be twenty and a half billions as against $18,788,961,437 thus far this year. That figure represents the appropriations made up to date. But there is an Urgent Deficiency Bill pending that carries about a billion and a half, which will bring the total for 1918 over twenty billions. Moreover the expenditures of several supply bureaus are still considerably below the estimates, owing to delays at factories. Production generally will soon be at full speed, however, and then daily expenditure will increase accordingly.

Estimates for the War Department absorb more than ten of the thirteen billions needed for 1919. One billion is asked for pay of the men, and two billions for quartermaster's supplies—clothing, certain kinds of equipment, and transportation. The Surgeon-General wants $157,000,000 for hospitals and medicines, and the Engineers ask $135,000,000 for the equipment of engineer troops and $892,000,000 for the expenses of their field operations. The Ordnance Bureau asks $2,672,000,000 for ammunition and guns, exclusive of $237,000,000 for machine guns. The army aviators ask $1,032,294,260 as against appropriations for this year of $739,067,766.

The Navy asks for a total of $1,047,914,027 as compared with appropriations for 1918 aggregating $1,596,936,455, with some deficiencies yet to be cared for. The Shipping Board wants nearly $900,000,000 more to carry on its great program and the Food and Fuel Administration need about double what they have had this year. Their requirements, however, are mere small change compared with those of the fighting organizations. The Army estimates for pay cover 62,000 line and 25,578 staff officers and 1,208,300 enlisted men of the line and 398,053 enlisted men of staff departments, a total force of 1,693,931 officers and men.

Congress quickly took cognizance of complaints of inefficient work in both Army and Navy organizations and began investigations covering both those departments and the Fuel and Food Administrations and Shipping Board as well. At this writing the army investigation has gone into the Ordnance Bureau and Quartermaster-General's office, and his developed a long and unpleasant story of delays and of failure to secure ordnance and other supplies with the promptness and in the quantities which the public desired and expected. The hampering effect of red tape has had a new demonstration. It developed that our men abroad are equipped with French instead of American artillery, and that we are using British rifles because we could not make our own fast enough. Our men in camps and cantonments at various places in this country are not fully supplied with rifles, have no machine guns and are short of artillery. They are not fully supplied with proper clothing, and Surgeon-General Gorgas reported that at camps which he personally inspected there was disease and suffering due to insufficient clothing. Army officers, contractors and members of committees of the Council of National Defense, all of whom have been involved in the unhappy revelations, have spent much time trying to shift blame to other shoulders. Secretary Baker, upon whom General Crozier, Chief of Ordnance, laid part of the blame for army lack of equipment, defended the army in a public speech with the remark that there were "two ways to look at the nation's war progress, what we have done and what we have not done."

"The activities of the Government departments doing war

work had to be multiplied three thousand fold," said Mr. Baker. "We had to undertake new problems on a colossal scale. These were things which the country was not prepared to do."

The investigation disclosed the fact that an enormous amount had been accomplished in the equipment of the army, and in preparation for the organization and equipment of additional forces. The story is by no means wholly dismal and many besides Secretary Baker will find satisfaction in contemplating what has been done, although it is not all that might have been accomplished.

The inquiry into naval conditions found a much pleasanter situation. The annual report of Secretary Daniels showed that the great guns for the batteries of the new battleships are in place and the new sixteen inch gun is ready for testing. The destroyers in European waters are kept supplied with all requirements. The navy has placed orders for all explosives needed and the projectile problem has been met, more plants bidding for contracts than were needed. This is in marked contrast to the army situation.

In mid-December, Mr. Daniels announced the formation of an inter-allied naval council "to insure complete co-operation between the allied fleets." England, France, Italy, Japan and the United States are represented. Mr. Daniels told the Congressional investigating committee that several hundred ships had been added to the fleet since we entered the war, and that contracts had been let for hundreds more, including superdreadnaughts, battle cruisers, destroyers and every class of naval vessel. There are 424 ships in course of construction, not including 350 submarine chasers. The navy has over a thousand vessels in commission against less than 300 two years ago. The personnel numbers 280,000 as compared with 64,680 men and 4,376 officers when we entered the war.

On December 15th, Secretary Baker, after a long conference with President Wilson, announced the formation of a new War Council, composed of himself, the Assistant Secretary of War, General Bliss, the Chief of Staff; General Crozier, the Chief of Ordnance; General Sharpe, the Quartermaster-General; General Weaver, the Chief of Artillery; and General

Crowder, the Judge Advocate General and Provost Marshal General. The announcement said that the new council was "to oversee and co-ordinate all matters of supply of our field armies and the military relations between the armies in the field and the War Department." Skeptical Washington was inclined, however, to consider this as a promotion out of responsible work for some of the new council members, and to recall several cases among our allies where distinguished officers have been promoted similarly to posts of less arduous and important duty. A few days after this announcement Mr. Baker announced that General George W. Goethals had been recalled to active duty and assigned as Acting Quartermaster-General, and that acting chiefs of ordnance and artillery had been appointed.

The investigation of the Shipping Board disclosed a situation so satisfactory that at the close of the examination of Chairman Hurley the committee frankly asked him how it could help in the work he was doing. Mr. Hurley had said that the program is moving steadily and surely forward to successful completion. There had been some delays, as was well known, but the new organization of the Emergency Fleet Corporation for the first time gave the chairman of the Board the proper authority and fixed the responsibility where it belonged. When he joined the Board on July 27th, there were 840,900 tons of wooden ships, 207,000 tons composite and 587,000 tons of steel ships under contract. Since then contracts for 3,378,200 tons additional steel ships have been let, together with 504,000 tons additional wooden vessels. Also the Fleet Corporation has rendered financial aid to forty-two yards. This was superimposed upon a program of naval construction equal to 2,500,000 tons of merchant shipping.

The coal investigation developed a situation of railroad congestion that prevented deliveries, although production for 1917 was much greater than in 1916. This situation, as has been shown, was the first one tackled by the new Director General of Railroads.

The investigation of the Food Administration promptly developed into a personal assault upon Mr. Hoover, the Food Administrator, by Claus Spreckles of the Federal Sugar Re-

fining Company, who accused the Food Administration of working with the sugar trust and of bringing on the sugar shortage. Mr. Hoover retorted that Spreckles was resentful because his profits had been interfered with. The Senate Committee, headed by Senator Reed, who had opposed Mr. Hoover's appointment, declined to permit Mr. Hoover to testify immediately in response to Mr. Spreckles, or to print a statement by Hoover. Thereupon President Wilson took a hand and published the statement through the Committee on Public Information. The strong flow of charges and counter-charges indicated that an old rivalry was getting a new airing.

The month heard the usual report of German intrigue, with another chapter of the Lansing serial exposure of Count Luxburg, the German Minister to Argentina. And, as usual, it saw no serious punishment for sedition or treason, or spy work. But we hope we are getting on.

XI.

(January 3d—February 6th.)

This review of the tenth month of our war with Germany is written on the last day of that month—the next day after the first public announcement in our newspapers that American troops are at last holding a sector of the line on the west front in France. How long they have been holding it before the censor permitted the announcement is, of course, not public property. Nor does it matter. The main thing is that we are now on the line, and it is a promise of the fulfilment of our hope that before the end of the war the fighting strength of the United States shall make itself felt.

This begins to look like what the average man understands by "participation" in the war. Of course we have been actually participating for a long time, in fact for ten months. There are many different methods of participation, with various economic forces that may be more effectual in reducing Germany's

power of resistance than the fighting valor of the men we now have on the sector we hold in France. We have been helping to make it a real blockade, and to cut off the numerous and devious means by which Germany obtained supplies, no matter how small the quantity, of the different materials she needed in her war making. We have strengthened our allies with money and credit, and our naval forces have borne a gallant and distinguished part in the defense of the allied transport service against the submarines.

But now we have men "on the line." There is an "American front" and the censor permits it to be known that our men are holding trenches in Lorraine. We may even particularize a little. We are almost on the German border. With a little fortunate effort we might become invaders of the enemy territory. Every day the news reports give details of the doings of our soldiers on this front, and bring inevitably the sad news of casualties—men killed and wounded, and occasionally captured. Nothing approaching the dignity or importance of a battle has occurred as yet on the American front, but our men are in the fighting, and the close of the tenth month finds us really "participating in the war against Germany."

Three alliterative subjects were the chief recipients of public attention during this tenth month—participation, peace and preparation. Strong efforts for all three have run co-ordinately throughout the month, but at the close the hopes for peace were not as high as they had been at different points during this time. Certain distinguished efforts to pave the way for a possible discussion of peace terms were made in this month. David Lloyd George, the British Prime Minister, delivered a remarkable speech, outlining the British war aims. He was followed in a few days by President Wilson, who, speaking to a joint session of Congress, laid down fourteen specific conditions of peace. In due course formal replies came from Count von Hertling, the German Chancellor, and Count Czernin, the Austrian premier. Neither speech offered a hopeful basis for enduring peace, and the month closed with the publication of a formal statement by the Supreme War Council of the Entente Allies rejecting the peace feelers of the Teutonic allies, and announcing that the Council had "arrived

at a complete unanimity of policy on measures for the prosecution of the war."

This announcement appeared in the same newspapers which carried that of American occupation of a part of the Lorraine front. So just as we were informed that we were actually getting into the fighting on land we were assured that the war was to go on indefinitely and that the hopes of an early peace which had been inspired by the various statements of aims were not yet to be realized.

The peace parleys which had been going on at Brest-Litovsk between the Bolshevik Russians and the Ukrainians on one side and the Teutonic Allies on the other have continued at intervals since our last review. First one side, and then the other, has journeyed back to Petrograd or Berlin as the case might be, for consultation with superiors, and to make explanation or receive orders. It has been reported at different times that each side had broken off the negotiations. But if either side ever did, it has soon repaired the break, and when the original armistice expired it was renewed for one month more on Russian initiative.

Meantime the Russians have been encountering more and more difficulties and divisions at home, and the Teutonic Allies have been progressing in arrogance and rapacity, as was to have been expected. Having at first declared their acceptance of the Russian principles of "no annexations and no indemnities," the Germans were forced to meet a practical application of the formula in the case of the Russian territories now held in German occupation. Their answer was a flat refusal. They declined to evacuate these territories, as contemplated in the first and second items of the Russian terms of peace. They said that these territories "already had local authorities who had declared in favor of breaking away from Russia, and such decision should be regarded as valid." They did not regard it as necessary to remark that these local authorities had been installed by German military forces and now function under German control. Neither the Bolsheviki nor any one else was fooled by these tactics.

On January 10th, the Teutonic negotiators solemnly announced the withdrawal of their offer to conclude a general

peace without forcible annexations and indemnities on the ground that the Allies had not accepted it. Therefore the responsibility for continuing the war rests—from the German point of view—entirely on the Entente Powers.

At this writing the Teutonic negotiators are again in Berlin for conference and there is renewed suggestion of a rupture of the negotiations.

This month opened with Mr. Lloyd George's statement of British war aims. It was made on January 5th, before the British Trade Union conference. The terms specified were closely similar to those of previous declarations. The British are not fighting, he said, to crush Germany, but it will be much more easy to negotiate peace with a liberalized Government. Belgium must be restored, politically, territorially and economically, with such reparation as can be made for the devastation of her towns and provinces. Servia, Roumania, Montenegro and the others similarly to be restored. And the British will stand by France to the death for the restoration of Alsace-Lorraine.

The Lloyd Geroge statement was accepted as satisfactory by British labor and by Britian's allies. Three days later, on January 8th, President Wilson went before Congress and delivered the most carefully itemized and specific statement of peace conditions that has come from any of the belligerent statesmen. He voiced again his distrust of the German rulers and demanded to know for whom the negotiators at Brest-Litovsk spoke—the "spirit and intention of the liberal leaders and parties of Germany, or those who resist and defy that spirit and intention and insist upon conquest and subjugation?" His program of world peace contained fourteen paragraphs: 1, Open Diplomacy; 2, Freedom of Navigation, in peace and in War; 3, Removal of International Economic Barriers; 4, Reduction of National armaments; 5, Absolutely Impartial Adjustment of all Colonial Claims, the interest of the population concerned having equal weight with Governmental claims; 6, Evacuation of all Russian Territory and such settlement of all questions affecting Russia as will give her unembarrassed opportunity for independent determination of her political development and national policy; 7, Belgium evacuated and re-

stored; 8, Alsace-Lorrain restored to France; 9, Italian frontiers readjusted; 10, the peoples of Austria-Hungary accorded freest opportunity for autonomous development; 11, Roumania, Serbia, and Montenegro evacuated; occupied teritories restored; Serbia to have access to the sea and the political and economic independence and territorial integrity of the Balkan States to be guaranteed internationally; 12, Turkey, to be assured sovereignty of Turkish portions of Ottoman Empire, but other nationalities now under Turkish rule to have unmolested opportunity for autonomous development, Dardanelles to be free for all nations under international guarantee; 13, An independent Polish State; 14, An international league for peace.

The entire Allied world endorsed the President's statement of peace conditions. British labor especially approved. In Germany it aroused furious anger, and the newspapers, which are under Government control, published it in garbled or distorted form or not at all.

Count von Hertling and Count Czernin replied to the Wilson and Lloyd George speeches on the same day, January 24th. The German Chancellor spoke before the Main Committee of the Reichstag, and the Austrian Premier before the Reichsrat. Count Hertling made his reply specific, taking up the President's terms paragraph by paragraph. To the first five he professed adherence, but explained as to number 2 that it would be highly important for England to give up Gibraltar, Malta, Aden, Hong-Kong, the Falkland Islands and other "strongly fortified naval bases on important international routes." He suggested that "practical realization" of number 5 "will encounter some difficulties." As to number 6—the evacuation of Russia—Count Hertling said that since the Entente had refused to join in the negotiations within the specified period of ten days he must "decline to allow any subsequent interference." The Belgian question, number 7 in Mr. Wilson's program, Count Hertling said "belongs to those questions the details of which are to be settled by negotiation at the peace conference." As to Alsace-Lorraine he said: "I can only again expressly accentuate the fact that there can never be a question of dismemberment of Imperial territory." Numbers 9, 10 and 11, Count Hertling left to Austria-Hungary,

with the remark that where German interests were concerned "we shall defend them most energetically." Number 12, he said, concerned only "our loyal, brave ally, Turkey." He added that the integrity of Turkey and the safeguarding of her capital "are important and vital interests of the German Empire also," and Turkey could count on Germany's energetic support. Polish question, Mr. Wilson's number 13, was for Poland, Germany and Austria to decide. "We are on the road to this goal," said Hertling. As to the league of nations, "if it proves on closer examination to be conceived in a spirit of complete justice and impartiality toward all," Germany was ready, when all the other questions have been settled, to "begin the examination of the basis of such a band of nations."

Count Czernin also made a detailed reply to Mr. Wilson, considering the President's terms paragraph by paragraph. In general the Austrian Premier was far more ready to talk peace on the Wilson basis—or sought to convey that impression. "Our views are identical," he said, "not only on the broad principles regarding a new organization of the world after the war, but also on several concrete questions, and differences which still exist do not seem to me to be so great that a conversation regarding them would not lead to enlightment and a rapproachment." Count Czernin added that this situation tempted him to ask "if an exchange of ideas between the two Powers could not be the point of departure for a personal conversation among all States which have not yet joined in peace negotiations."

But while all this looked on the surface very much as if Austria would really like to begin effective peace conversations, there was a reference to Austria's determination to stand by her allies, especially Germany, which destroyed the value of Count Czernin's otherwise ostensibly peaceful discourse. He said that Austria-Hungary, "faithful to her engagement to fight to the end in defense of her allies, will defend the possessions of her war allies as she would her own."

Which brings the peace question back to the same old proposition of beating Germany.

There was one sentence in Count Hertling's speech which disclosed the interesting fact that the attitude of the world with respect to Germany has at last penetrated German in-

telligence. He said that the conception of Germany's enemies "finds expression as if we were the guilty who must do penance and promise improvement." And he added: "The leaders of the Entente must first renounce this standpoint and this deception."

In those two paragraphs the reason is fully set forth for the unanimous decision of the Entente Supreme War Council that the war must go on. As long as Germany is correctly interpreted by that speech of Hertling's and as long as Austria will support Germany as Czernin asserted, there is nothing to do but bring up the guns, and that is just what American preparation aims at.

Meantime there have been continued reports from both Austria and Germany of domestic upheavals which may or may not portend an early collapse of their present iron control. For more than a fortnight the news reports have dealt with labor demonstrations and strikes in Vienna, Berlin and other important cities and towns of both Gemany and Austria. The workmen were represented as demanding "peace and bread." The reports from Vienna were coupled with news of the fall of the Cabinet. In Germany, where government control of the press is supreme, the conflict of reports was such as to confuse the situation. No accurate line on the extent of the upheaval was obtainable. The military forces were relied upon to put down the strikes and there were threats of shooting strikers. There were also reports that strikers were warned to go back to work or take their chances with the army. At all events German iron discipline seems to have regained the mastery if, indeed, it every was really threatened.

There have been two domestic battles of absorbing interest during the month, both connected with our preparation for a larger measure of participation in the fighting on land later. One was a fight with the forces of nature as well as of organization and inefficiency in the effort to end the transportation congestion, and by moving both coal and freight get the industry and transportation of the country once more on something like a going basis. The other was a fight that developed in the Senate and was aimed against the deadening

effects of red tape in the military organization. At this writing both fights seem to have produced good results.

The coal and transportation situation have demanded and received unremitting attention and effort. The Fuel Administrator and Director-General of railroads have had to fight not only the constant production of more freight and coal than could be transported by the railroads under existing conditions, but also an unbroken series of snow and other storms and of severe cold weather, the like of which is hardly within the memory of the oldest inhabitant.

Early in the month Secretary McAdoo, the Director General of Railroads, had an important conference with the heads of the railroad brotherhoods, and, as the newspaper put it, "requested" them to work overtime in order to help meet the shortage of labor. The brotherhood leaders expressed a willingness to work with Mr. McAdoo to maintain transportation efficiency. Mr. McAdoo thereupon announced his intention to appoint a Wage Adjustment Commission to take up the question of increased pay which the brotherhood men were pressing. Later Mr. McAdoo named Secretary Lane as head of this commission, with Interstate Commerce Commissioner McChord as another member together with Chief Justice J. Harry Covington, of the Supreme Court, of the District of Columbia, and William R. Willcox, former member of the Public Service Commission of New York.

On January 6th, Mr. McAdoo issued orders doubling the demurrage on railroad cars in order to force consignees to unload them more promptly. On the 14th he ordered that coal for domestic use and for vital public utilities should have first preference in shipment with food stuffs and coal for bunkering ships to our allies next in order.

On January 16th, the Fuel Administrator ordered coal sellers to give preference in this order: 1, railroads; 2, domestic users, hospitals, etc.; 3, public utilities; 4, bunkers; 5, municipal, county and State governments and public uses; 6, manufacturers of perishable foods.

At the same time the Fuel Administrator ordered a total shutdown for five days from January 18th to 22d, both inclusive, and for each Monday for ten weeks. This order ap-

plied east of the Mississippi and in Minnesota and Louisiana. Dr. Garfield declared that it was necessary in order to prevent a crisis and widespread suffering.

There was an immediate and angry protest from all parts of the country affected by the order. Industries everywhere declared that it was an uneconomic measure and would have disastrous affects, entailing great loss upon industry and hardship upon the working men whom it would deprive of wages aggregating millions of dollars. Dr. Garfield insisted on enforcing his order however, and was supported by President Wilson. The Senate adopted a resolution requesting the Fuel Administration to postpone the order, but it went into effect just a quarter of an hour before the Senate Resolution reached Dr. Garfield.

The vigorous efforts to relieve the coal famine in New York and the New England States were making some headway despite the severity of the weather, and this closing order gave further assistance until there was talk of rescinding the order for further Monday closing. When the order was issued more than a hundred steamships were held in port for lack of bunker coal. In the first two weeks more than seventy-five of these ships received the necessary supplies, and this greatly improved the ocean transportation situation. The fact appears to have been the industrial production of the country was greater than the available ships could transport, especially when they were delayed by lack of bunker coal.

On January 4th, President Wilson went before Congress and delivered a message urging legislation to complete and support the Federal Control of Railroads undertaken as a war measure. He asked a specific guarantee to the roads that their properties would be maintained throughout the period of Federal control in as good repair and as complete equipment as at present; and that the roads should receive equitable compensation. He recommended as the compensation basis the average income of the three years ending June 30, 1917.

The Administration Bill conforming to the President's speech was introduced in both Senate and House, and immediately encountered opposition because no limit was set for the period of Federal control. Both Senators and Representatives believed that the law should provide some date for the termination of Federal control, one year, or two years after the war. Mr. McAdoo contended vigorously against such a limitation and President Wilson supported him. Both Senate and House committees voted for a time limit. The bill appropriates $500,000,000 to form a revolving fund to cover expenses of control, equipment, betterments, etc. The Administration is urging action of the bill, as a means of facilitating the flotation of the next Liberty Loan, which is scheduled to come before spring. Mr. McAdoo told a committee of Congress before which he was urging action on the railroad bill that it would be necessary to raise about ten billions before the end of the fiscal year. But not all that will be by loan.

The criticism of the War Department was accompanied by much more acrimony than developed from the fight over the railroad legislation. This situation culminated in an attack by President Wilson upon Senator Chamberlain, of Oregon, chairman of the Senate Committee on Military Affairs. Mr. Chamberlain spoke on January 19th at a luncheon given him in New York by the National Security League. In the course of his extemporaneous address he said that the War Deaprtment had "fallen down," that it had "almost ceased to function," and that there was inefficiency in every department of the government. Next day President Wilson wrote asking him if he had been correctly quoted. Upon receiving the Senator's reply to the effect that he had been quoted with substantial accuracy, the President issued a statement accusing the Senator of an "astonishing and absolutely unjustifiable distortion of the truth," and adding that the Chamberlain statement "sprang out of opposition to the Administration's whole policy, rather than out of any serious intention to reform its practice." The President referred to Secretary Baker as "one of the ablest public officials I have ever known."

This denunciation of Senator Chamberlain was surprising in view of the Oregon Senator's strong support of numerous Administration measures. It was Senator Chamberlain who handled the Food Control Bills which were not supported by Senator Gore, the chairman of the Committee on Agriculture. Mr. Chamberlain replied in a three-hour speech in the Senate

on January 24th, in which he rehearsed some of the evidence that had been given before his committee in the hearings on War Department conduct which it had been conducting for some time. It was at these hearings that the inefficiency in the Ordnance and Quartermaster's bureaus, and in other War Department bureaus was brought out.

These hearings had resulted in the preparation by the Senate Committee of two bills, one providing for the creation of a War Cabinet of three, and the other for the appointment of a Director of Munitions. Both bills were strongly opposed by the Administration and Secretary Baker. Mr. Baker had appeared before the committee in these hearings, and had defended his department, but in a way which lent color to the belief that he was not sufficiently impressed with the size and importance of the task before his department. His appearance had rather increased the demand in the committee for the legislation.

Senator Chamberlain's speech in reply to the President made a profound impression. He declared that the President did not know the truth as it had been presented to his committee, and he gave official figures to show the shortage of clothing, and the deaths in the training camps in which Surgeon General Gorgas had testified there were unsanitary conditions and lack of proper clothing.

Secretary Baker promptly requested another opportunity to appear before the committee and present additional information. He did appear on January 28th, and produced a statement which made a much better effect in its showing of the accomplishments of the War Department. He did not contend that mistakes had not been made, but that when discovered they had been corrected and were not repeated. Also he declared that an immense amount of work had been accomplished, and that no army of such size had ever been raised and equipped so quickly before. He said we should have half a million men in France by spring and a million more ready to go. Afterwards Senator Chamberlain lunched with Mr. Baker, and there were indications that an agreement might be reached as to the Director of Munitions Bill. But Administration opposition to the War Cabinet measure was unremitting. Mr.

Baker did appoint a "Surveyor General of Purchases," and gave the place to Mr. Stettinius, who had been the Chief Purchasing Agent for the Allies before we entered the war. But it was pointed out that the new Surveyor of Purchases was without real authority which alone could give him solid ground for success.

By way of pleasing contrast the House Committee which investigated the Navy reported in terms of the highest praise of its work, commending its efficiency and achievements. Notwithstanding the tremendously increased demands upon it, said the report, it was working smoothly and harmoniously and with great efficiency.

Provost Marshal General Crowder announced that more than a million men in Class 1 of the draft registrants had been accepted for service, and that the yearly class of young men reaching the age of twenty-one, who will be made liable for military duty under pending legislation, will number more than 700,000. General Crowder estimates that nearly all these men will be available to meet all demands upon us for troops. So the tenth month marked substantial gain in accomplishment and real improvement in prospects.

(This record is of February 6, 1917, and is to be continued.)

Military Notes

BRITISH CAVALRY IN ACTION.

By PHILLIP GOBBS, Special Correspondent for the "New York Times."

THE Commander-in-Chief has mentioned the splendid work of the British cavalry in the recent fighting, and I am now able to write things which I wanted to write before, because in the first days of this battle I saw cavalry riding out to meet the enemy around about Ham and Guiscard, and afterward on patrol work below Delville Wood and Pozières. From March 22d onward they fought, mounted and dismounted, helped to stop gaps in the line and stem the German tide, charged Germans on foot and Germans on horseback, cleared woods and roads with machine guns and rifles, rode out in patrols to reconnoiter the enemy's position, chased German advanced guards out of villages, and acted as rearguards to the British infantry. Their losses were not light, but light for all the service they did in the hours and days and nights of grave peril. On March 22d, they dismounted and held the Ollezy-Ham line when the enemy was bearing down in vast numbers, and some dragoons fought all night, covering the withdrawal of the tired troops. They could leave only a few men to look after the horses, and it was the men of a labor battalion who one night led their horses to the next position, each man with fifteen horses tied together on one rope, which was not an easy job on a dark night, with poor, frightened beasts.

The British cavalry had hard fighting around Guivry, and on the 26th they moved up to help the French, who were meeting the enemy hordes bearing down on Noyon. The British squadrons had their left flank exposed when they were ordered to hold Porquericot Ridge, on which the enemy was moving. They went at full speed, pressing their horses forward to something like a gallop, and the infantry soldiers cheered at the sight of this living tide of fine men and fine beasts streaming over the slopes. The enemy was already on the ridge, but the cavalry held the southern side of it, stopping the enemy from gaining the height.

When the allied line withdrew to the Driette River, it was necessary for the cavalry to conform to this movement, which they did with the enemy again on their left flank, so that the Lancers, Hussars, and Canadian cavalry were under furious machine gun fire.

A CHARGE THAT RANKS WITH BALAKLAVA.

After supporting the British infantry near Marcelcave dismounted cavalry, with one mounted squadron, made a gallant attack through Moreuil Wood and cleaned out the enemy. Afterward, however, it was again filled with Germans who had many machine guns, and the cavalrymen were again asked to clear it. It was a perilous task, for two battalions of the enemy held the wood, and their machine gun fire swept through the glades; but in this wood of Moreuil on the morning of April 1st British cavalry performed a feat as fine as the Balaklava charge, and this also should be made into a ballad and learned by heart.

Twelve hundred men who had been riding through the night went forward in three waves and charged that dark wood next morning at a hard gallop. The first wave rode to the edge of the wood, and the second to the center, and the third wave went right through to the other side, riding through the enemy and over his machine guns and in the face of a hail of bullets from hidden machines. They cleared the wood of Moreuil and brought back prisoners and thirteen machine guns, but there were many empty saddles, and many men and horses fell.

That was the finest exploit of the British cavalry, but elsewhere it did splendid work, and everywhere the men were

gallant and cool, as when some of the dragoons came under a heavy shrapnel fire near Gentille, and many men had to shoot their wounded horses to put them out of their agony.

CAVALRY PLAYED BIG PART.

BRILLIANT WORK DONE BY BRITISH MOUNTED TROOPS IN BIG DRIVE.

By the Associated Press.

WITH THE BRITISH ARMY IN FRANCE, April 7, (delayed).—No finer chapter has been provided from the story of the British defense since the German offensive began than that furnished by the cavalry.

Never during the present war had horsemen been given the chance which they had in this more or less open warfare, and they made the most of it. They have been filling in gaps, strengthening the lines and covering the retirement of infantry. Their work has been brilliant and they thoroughly enjoyed every minute of it, despite the gruelling engagements.

The correspondent saw long lines of cavalry on the road yesterday. They were battle worn and plainly showed the marks of hard fighting. More than one trooper led a riderless horse. But the men's heads were up and their lances described defiant circles, while the horses cavorted as though they, too, were ready for more trouble.

In the first three days of the German drive, the cavalry fought mostly on foot and did valuable work. It was dismounted cavalry that held the Ollezy-Ham line March 22d, while the infantry withdrew. There was terrible fighting here. One party of dragoons was cut off at night, during which time they were out in the open battling for their lives. Finally they cut their way through the German lines at Jussy by main force.

The cavalry came into its own March 22d, for the horses were brought forward and the troopers began a series of spectacular feats.

When Noyon was first threatened cavalry was sent to hold the line of the Oise west of the town. The British infantry was forced to fall back March 26th and the cavalry was pulled back also, with the intention of occupying the ridge near the village of Forquericourt, in the vicinity of the Noyon. The Germans also were after this hill.

A race developed between the horsemen and the enemy infantry across the rolling ground. The Germans reached the northern part of the wood, but the cavalry arrived at the other side at about the same time and went rushing through the forest against the Germans. An intense battle at close quarters ensued and the cavalry was doing great execution when the order came for them to fall back in order to cover the retirement of the infantry, which had succumbed to pressure at other points. The troopers withdrew from the wood and brought up to the rear, pausing often to fight rear guard actions with the hotly pressing enemy.

The next big action was March 30th, when the Germans got into a wood northwest of Moreuil. Word came from the British command that the wood must be cleared out. The position was filled with enemy infantry who had brought forward great numbers of machine guns which were mounted in every available vantage point, even in trees.

The cavalry was called upon. They responded and came pounding up to the wood in a picturesque manner. Here a part of them dismounted and went in on foot. But Canadian horses tore on into the forest and hurled themselves on the enemy. As one trooper later put it:

"There was a hell of a fight."

Step by step the Germans gave way before the onslaught until the western part of the wood had been cleared between Moreuil and Demuin.

The Germans again attacked in force March 31st, and once more the British infantry, although fighting gallantly and stubbornly, was compelled to pull back because of the overwhelming weight of the numbers opposed to them. During the afternoon the cavalry again attacked here and drove most of the Germans back somewhat, but the enemy still clung to the high ground and kept sending forward supporting infantry.

WHY IS IT? ANOTHER ANSWER.

BY ONE OF THEM.

THE question is asked "Why, among the late lieutenant class of the Regular Army, there should be a lack of initiative and willingness to assume responsibility in administrative and training routine?" I really believe this weakness is confined to these two elements rather than that it is general; I further believe it will not be the rule in the actual field work of the same officers where facts are the things to be lived up to and not the arbitrary will of instructors and commanders.

Is it not due to the lack of positive knowledge on the part of those from whom we received our instruction either in precept or by example and in turn is not their failure to make the most of the material placed in their hands due to the total absence of a *science* of training in our service?

It is said that as soon as the understanding or knowledge of any subject is so well analyzed and organized that it can be reduced to laws or principals, then that knowledge becomes a science.

This surely has not been done with our profession, although it is the oldest in the world's activities, and that it has not been done, while perhaps not the fault of our instructors, is certainly the cause of their failure and of our present *untrained* condition.

Themselves, taught by the *book*, the book and usually the very same book became the all and all of their instruction as they hand it down to the next generation. I have been red-inked at a school on a solution of a Grippenkurl problem for a departure from the approved solution. I was not informed that I had violated any principal but that a second lieutenant could not improve a solution of Grippenkurl therefore a departure was necessarily wrong. Thereafter, knowing what my instructor wanted, which was quite a game at these schools, I memorized the solutions and gave them verbatum being marked

crazy and mentally lazy at the time. Immediately I received excellent marks and saved myself the labor of original thought, for with youth memorizing is the easier of the two forms of mental activity.

Knowing their subject, yes, even their profession not by its underlying fundamentals but by the specific details of its various phases, our instructors not only did not encourage original interpretations by their students but often insisted upon a literal repetition of the words of a book or if the instructor attempted originality, very often would judge efficiency by and base their opinion of those under them upon the degree in which the student anticipated the arbitrary values fixed by themsleves.

The point so aptly brought out in "An Answer" in the January CAVALRY JOURNAL to the same question, that all our orders have been paragraph 3's; that we were seldom if ever given nor encouraged to ask, the situation or the plan of the commander as would have been the case if the form of a field order had been more generally used, is, I readily agree, a second cause of the regrettable condition.

Thus instead of mental development, the young officer received a training in mental gymnastics. Values were not consistent, not being measured by principals but for even temporary recognition had to meet the standards of the instructor of the moment.

Opinions, originality, interpretations, and reasons, though possibly fundamentally correct, had we or our instructors known how to test them, were not wanted or at least not encouraged if they differed from the statement of those in authority. All things had to be measured by the standard fixed by the fad of the moment or the individual and often arbitrary opinion of the instructor or commander.

Is it any wonder that the edge of our initiative and keenness to assume responsibility are somewhat blunted. I do not admit their absolute destruction, however, for perhaps impaired and rusty in action, where positive action is to be handled and where results will be material instead of theoretical, most of us will be found willing to use both of the qualities trusting that they may not have completely atrophied in their long disuse. It

was not our solutions or methods that we were afraid of merely the judgments on them were too uncertain to be profitable and then the game was not played that way. The sad thing about it all is the time for correct training and mental development that has been thrown away.

The cause of the condition is that while all other specialized knowledge has within the past century or so been raised by analysis and organization of its principals to the dignity of a science, Military Training, although its details has been increased a thousandfold, has never been studied by us with this in view. Its principals, although, recognized by many, have never been sufficiently simplified to be truly understood and never applied except at the wrong end: *i. e.*, to the acknowledged end of all training, the combat, but never made the basis for the training necessary to attain that end.

The correction I suggest is to change our form of training and to start by making a science of our profession basing its instruction upon its fundamentals instead of building the house upside down, as is now the case.

The method that will affect a cure is, I believe, contained in the Catechism of Uniform Tactical Training, for in my opinion there lies the seed that will produce what is needed, a new, perfect and upstanding Tree, a correctly and uniformly trained army.

It was in reading this book that my misapplied past was thrust upon me and I knew I never had known but believe I have seen a great light and that there is still hope.

TEAM WORK.

MUCH has been said and claimed for "team work," and undoubtedly it is the decisive element that makes for success in any action, Military or otherwise.

As a basic or fundamental law for the control of action, or with a strictly military application, of tactics, it may be sometimes placed in other than first place, but without it, the most

thorough observance of all the other laws or principals will be for naught

In all walks of life its importance is being preached constantly and in the service the term is heard on all sides. Corporals to generals not only preach it but state very positively that it is essential for success. Yet while all are demanding it of those under them, I have yet to hear team work defined or to see men instructed in its application.

Team work is as tangible and as material as close-order drill or any other of the many forms of human activity and men should be instructed in it to the same degree of perfection as in, we will say, the manual. It possesses this great superiority over all other forms of mental activity, it is applicable to and actually becomes the controlling influence of all other forms of detailed instruction.

Team work is the product of a correct mental attitude to be developed by concrete illustrations which will impress its effectiveness upon the one instructed. The instruction will not be satisfied by the development of the mere habit of looking for and giving the team work required by the special situation but must create a strongly felt moral obligation to do so.

As a concrete example of the merits of the system and the simplicity of its instruction, the following is submitted. We always have had instruction in advancing by alternate rushes target practice and the use of covering fire. Imagine the benefits to be derived and the idea of team work that would be emplanted by combining the three forms in the instruction of a pair of men. These men advancing by alternate rushes on a pair of targets under supervision that would note the observance by the individual of team work (covering fire), use of cover, etc. This could and should be made the basic illustration of the fundamentals of team work.

A mental training in the principle of team work is the only proper and consequently, thorough preparation of the soldier for the ready reception in correct form of any kind of detail instruction. Only men thus grounded can be said to be truly intelligently trained. They will be more self-reliant and of inestimable greater value to the machine as a whole than these

trained along mechanical, unthinking lines. In fact they will constitute the machine, which without this form of instruction is merely a collection of separate parts that will function together only as an accident.

Once the theory is grasped by the instructing personnel it is claimed that by the simple means of making a pair of men the basis of instruction instead of the individual soldier as is now the system, team work can be properly and fully developed in the army.

Like any other true principle, law or great idea, team work to be real must be lived, breathed and thought all the time. It should be the animating principle, the soul, of the army, by which every other thing that comes to it, is measured, digested and applied.

To accomplish this the idea must be placed in the daily life of every one from the moment of their entry into the service and distinctive terms appropriate to the different phases of the subject should become of daily usage. The failure of an individual in the performance of team work in a pair, should in addition to being a punishable offense, prompt the common censure and contempt that follows the "throwing down of a pal" in every day life.

Things, conditions and organization are of real value for the accomplishment of a given plan or purpose only in direct proportion to the team work employed in their use. Train the mind, therefore, by illustration and constant questioning to look for, find quickly and value correctly the team work in all proposed action.

Then, from the very beginning of training, the pair has been constantly impressed with the fact that there is always a "teammate" to be considered by one another, the idea of mutual dependence and desire and ability to help will be firmly emplanted and team work will at last be a live thing, to be depended upon in the fulfillment of the purpose of the army's existence.

Carry this "team mate" idea along with the development of the pair. Impress upon them when they enter the squad that the other squads of the platoon are their "team squads;" the other platoons of the company are their "team platoons"

and the other companies of the battalion their "team companies," and so on up to the limits of the army organization.

What fear would a company, battalion, regiment, brigade, or division, have for their flanks, we will say, if the team work idea were thoroughly instilled in the minds of everyone from private to general. A question on the subject would promptly bring forth the reply "Oh, our team company, battalion, etc., is on that flank."

There is nothing new in the above, merely a suggestion to change our form of applying team work; to stop preaching it downwards and to begin training it upwards.

There are few duties to which individuals or units are detailed that the "team work" or "team mate" idea cannot be applied. From kitchen police to a grand attack the details could and should be made with the idea constantly in mind and by the employment of some such terms as "principal" and "team mate or company," etc.

Furthermore a very specific specification under the 96th A. W. should become common throughout the service to impress individuals with the seriousness of failing to properly perform "team work" when detailed with a "team mate" to some specific duty.

An officer possessing a well balanced, analytical mind should be detailed as "team work" officer in each post, tactical division or larger units and at Washington for the purpose of studying all the forms of activity, administrative, routine in and especially the training of the organization to which attached, that the team work in each could be grasped, indicated to and observed by all.

IS IT NOT TREASON TO CRY DOWN THE HORSE?

(From the Rider and Driver.)

IF it be treasonable to do anything by word or deed that impairs our military efficiency with regard to, say, shipbuilding, motor manufacturing, railroad transportation and other vital activities, why is it not equally infamous to howl down the horse? It is an incontrovertible fact that even in this latest and most scientific of wars, the horse is more necessary than ever before and that the supply, rapidly diminishing, has been largely reduced as much by the effects of a malignant propoganda as by the economic exigencies that lessen demand. In late years, the cries of "down with the horse," "horseless age," "passing of the horse," and similar objurgation, have been heard throughout the land while, at the same time, the contending nations have been scouring the earth for horses, their requirements being estimated to be one horse for every three men in the service of arms. Competition in business affecting the horses' sphere is commendable and the "life of trade;" but, when such selfish considerations materialize into a form of persecution that is detrimental to the best interests of the national weal, it is time to call a halt. Instead of such drastic methods as have been used to displace the horse a spirit of "live and let live" should prevail, at least so far as the commercial phase of the situation is concerned; but when that kind of business promulgation reaches the point of endangering the lives of our heroes at the battle front the nobler impulses of patriotism must be rallied to inspire a reactionary sentiment. We are not merely expressing sentimental wishes, but stating facts as to the critical importance of the horse! It is irrefutable, for example, that three months before Germany parcipitated war, that country had purchased 350,000 horses from France alone, thus proving that the most militant power of the world, foreseeing, appreciated the inestimable advantage of the animal. This number was only a drop in the bucket, so to speak, compared to the thousands upon thousands of horses

bred in Germany and Austria-Hungary, and bred for many years, with an especial view to their value for campaign purposes. From England, too, Germany had purchased the best stallions for breeding available, without regard to price, paying as high as $125,000 for a single horse, the famous *Ard Patrick*, which, so far as we know, is still in the enemy stud. The losses of horses by the Central Allies have nevertheless, been stupendous and it is believed that they have not been replaced, by at least fifty per cent. In the final shocks of the fray this will tell against the enemy tremendously although, we believe, their cavalry have been maintained in the background at the fullest strength, awaiting mobile action when the trenches have been abandoned. In view of these circumstances and especially in response to the call from General Pershing for more horses and more horses, as they say of ships, and for more cavalry and more cavalry, the Secretary of War has instituted a tardy but strenuous drive to fulfil the obligations imposed and which in the better prepared countries were never overlooked nor undervauled. Whole volumes have been printed on the deeds of the horse, but it is not necessary to revert to them as they are known to every intelligent reader of history. As much, if not more, could also be written of the horse's incalculable services in the present struggle. It should suffice now for everybody who loves his fellow man, and who is sacrificing affection and fortune for the cause, to realize the stupendous significance of the horse in this titanic struggle for the freedom of the universe. It sounds hackneyed and inadequate to quote Richard III's desperate appeal, "A horse! A horse! My kingdom for a horse!" but never was there a time when the immortal phrase applied with such sonorous open diapason as at this moment when kingdoms tremble, to fall at the approach of whichever may be the mightier hosts' thunderous vibration of horses' hoofs. "Long live the horse; man's best friend in war as in times of peace!"

BREEDERS DISCUSS HORSES FOR THE UNITED STATES OF AMERICA.

(From the Rider and Driver.)

AT a dinner given by the Arabian Horse Club at the Vanderbilt Hotel recently, the subject of providing horses for the U. S. Army was discussed by Major Hazen Channing, Quartermaster Corps, U. S. A.; Colonel Albert Conste, head of the French Remount Commission; Colonel Edward Bray Hassel, of the British Remount Service, Captain Lorenzo Rotoundi, of the Italian army; W. R. Brown, of Berlin, N. H., President of the Arabian Horse Club; H. K. Bush-Brown, of Washington, Secretary of the Club; Warren Delano,. T. W. Ames, of Wyoming; Leland D. Ives, of the Bureau of Animal Industry, in Washington; Major Fleury, of the French army; R. C. Craven, of the Red Star Animal Relief and Gurney C. Gue, Secretary of the American Hackney Horse Society.

The concensus of opinion expressed by the foreign officers and breeders present was as follows:

The artillery horse can be obtained in this country in abundance and quality for the duration of the war.

The cavalry horse can be obtained in abundance for an indefinite time, but the quality of this horse has been and is poor.

The number of desirable registerable light horses suitable to produce a superior quality of cavalry horse amount to but a small percentage of all light horses in this country, and their number is diminishing rather than increasing, due to the present low prices, the result of competition by motor vehicles.

It is greatly to be desired that the production of well bred registerable animals be stimulated, and that they be distributed more generally in order to improve the quality.

There is at present no comprehensive plan pursued by the Government to do this or to assist breeders so to do.

The War Department should have charge of this matter rather than the Agricultural Department, as the needs of these departments are diverse and the War Department desires a special type of animal.

The power resting in the Executive is sufficient to transfer this activity to the War Department as a war measure.

Conformity to established European practice which has been tested would no doubt be the most effective. Foreign governments, with the exception of England, maintain breeding stations in considerable numbers where selected stallions are bred to desirable mares to obtain and perpetuate suitable types. The past methods of carrying on government remount stations in this country do not produce satisfactory results.

There are some of the most favorable regions in the world for quality at a minimum expense, particularly in the West, and some of this land is already owned by the government.

The breeders of the country should present their views on this question as a united body in order to obtain a hearing. The breeders should agree to co-operate in assisting the government to meet the need for better cavalry horses in the future as a means of permanent national defense.

W. R. BROWN

THE EFFICIENCY OF CAVALRY

(From the Dayton Journal.)

AMERICAN cavalrymen have demonstrated in Mexico what European cavalry have demonstrated in many parts of that continent, that, notwithstanding the aeroplane development, and the development of heavy artillery, cavalry continues a necessary and efficient arm of the military service.

Our splendid riders in Mexico have performed some exploits that will go down as a part of the folklore of the country; and this in face of the admitted fact that cavalry has been much neglected in recent years, because of the general belief that it had been supserseded by other and more important agencies.

To think of armies without cavalry is to think of a something lacking the dramatic element. What would Waterloo be to the modern reader without the charge of Murat's plumed horsemen and that of the Scots Grays? What would the battles of our own Civil War read like if we left out Stuart and Joe Wheeler and Sheridan and Custer?

So our little dash into Mexico will be remembered as a cavalry expedition particularly. Down there the infantryman and the motors were at a disadvantage compared with the cavarly. It had to be a swift chase. There were so many natural enemies—the mesquite, the desert sands, the lack of water, the heat, the parasites, which bit and stung—all these in addition to the bandit with his guns and other weapons.

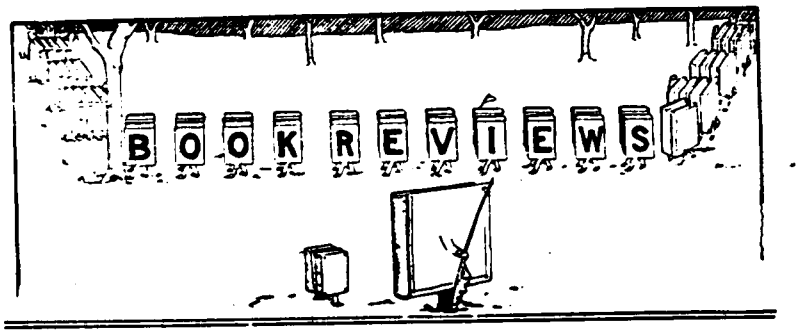
The expedition could not have been accomplished without the aid of cavalry.

BRITISH SCHOOLS FOR HORSESHOERS.

DURING the present great war, Great Britian maintains three great schools for horseshoers, classified as shoeing-smiths and cold-shoers. That at the Aldershot Command provides for the instruction of 400 men; that of the Southern Command at Romsey, 400 men; and that of the Eastern Command School, 400 men. The Royal Engineers and the Army Service Corps, continue to train their own horseshoers. Previous to the war, many cavalry regiments trained a large number of their own horseshoers in regimental schools; while others arranged for training at civilian farrieries.

The course of instruction at the three great schools, is usually six weeks for cold-shoers, and three months for shoeing-smiths, who have previously qualified as cold-shoers.

A gratuity of ten shillings is paid a non-commissioned officer who trains a soldier as an efficient shoeing-smith, provided the non-commissioned officer is not of the Command School of Farriery; and a gratuity of five shillings, if the soldier is efficiently trained as a cold-shoer.



Details of Administration.*

The author states in his Preface that "The work is a compendium of information gathered from many sources, both at home and abroad," and after a careful persual of the book the reviewer agrees with this statement and considers it the most valuable compendium of information concerning military medical administration that has come to his attention.

As wou'd be expected in a book containing much material based upon War Department orders and regulations, which are constantly changing, some of the orders discussed, and the recommendations given, are already obsolete, but this is unavoidable unless a work of this character is constantly kept up-to-date by frequent revisions and editions. However, most of the information contained in the book will always be found essential and useful. It is to be regretted that Special Regulation No. 28, dealing with Sanitary Regulations and Control of Communicable Diseases, could not have been printed in the book, instead of G. O. No. 45, War Department, which it has superceded, but which is printed in full. As Special Regulations No. 28 were not issued to the army until late in 1917 it is

*"DETAILS OF MILITARY MEDICAL ADMINISTRATION." By Joseph H. Ford, B. S., A. M., M. D., Colonel Medical Corps, U. S. Army. Published with the approval of the Surgeon General U. S. Army. Pages 742 and 30 illustrations. P. Blakiston's, Sons & Co. Philadelphia. 1918. Price $5.00.

probable that the book was in press before its appearance, but, if not, its inclusion would have added greatly to the value of the book.

The work is divided into chapters dealing with the following subjects: The General Principles of Military Medical Administration; The Regimental Surgeon; The Amublance Company; The Field Hospital; The Camp Hospital; Sanitary Squads and Committees; The Division Surgeon; The Evacuation of the Sick and Wounded; Hospital Trains; Hospital Ships; The Base Hospital; The Sanitary Service of Camps; The Sanitary Service of Posts; The Department Surgeons Office; Public Health Service; Medical Supply Depots; The Examination of Recruits; Voluntary Aid; and Malingering. In each chapter the medical officer's duties are considered in detail, the various blank forms used discussed thoroughly, and each chapter constitutes a complete guide to the officer for the administrative duties of the subject considered. Although much of the information given may be found in the various service manuals and Army Regulations, the collection of all the data under a single cover is of immense advantage to the younger medical officer, and for this reason, the book is recommended to every medical officer now entering the service, either in the Regular Army Medical Corps, the Medical Reserve Corps, the National Guard, or the National Army.

Undoubtedly, the Appendix will prove the most generally useful portion of the book. This comprises nearly 200 pages and contains full instructions regarding the preparation of the more important army papers and a *fac-simile* copy, properly filled in, of nearly every blank form used by the medical officer in the administrative portion of his duties. With this Appendix to guide him, it is difficult to understand how even the most inexperienced officer could fail to properly prepare the official papers required of him.

The reviewer can cordially recommend this work to the attention of all medical officers, believing that its widely extended use will greatly increase the efficiency of the Medical Department at a time when so many inexperienced officers are entering the service, and that it will prove to be one of the most valuable books that such an officer can purchase. It is well printed, upon good paper, and fully illustrated.

CHAS. F. CRAIG.
Lieut. Col. Med. Corps, U. S. A.

Tactics and Technique of River Crossings.*

River crossings and the defense of rivers in warfare have presented in the past, and will doubtless continue to present, serious and often very complex and difficult problems to the military commander. Success or failure of a campaign may be largely and at times entirely, dependent upon a successful crossing or a successful defense of a river. Military history and accounts of past campaigns supply numerous instances in support of this statement.

In "Tactics and Technique of River Corssings," by Colonel Merten, Chief of Section in the Engineer Committee, German Army, the military student has offered him a timely, up-to-date and thoroughly comprehensive treatise on this subject.

Though written by an Engineer Officer, it is not in any sense a technical book, but is intended for all officers, line and staff. The author makes a strong plea for thorough co-operation between the pioneers, on whom the technical part of bridge construction devolves, and all the other arms; between the pioneer officer, who has charge of the construction of the means for crossing and the staff officer who determines the sight for crossing. The importance of a thorough understanding and appreciation of the powers as well as of the limitations of each arm and brach of the service by all the others is emphasized as essential to the production of successful teamwork.

*"TACTICS AND TECHNIQUE OF RIVER CTOSSINGS." By Colonel Merten, Chief of Section in the Engineering Committee, German Army. Translated by Major Walter Krueger, Assistant Chief of Staff, 84th Division, N. A. 1918. D. Van Nostrand Company, 25 Park Place, New York, N. Y. Price $2.50, net.

In river crossings it is of especial importance that the tactical and technical requirements of a situation confronting a commander to be co-ordinated, for, to cite the author "Tactical measures that are not consonant with technical requirements and possibilities may be just as disastrous as technical plans that do not meet tactical demands."

The subject is fully treated and the matter is well arranged and presented.

In the first part of the book, following some pertinent general statements on the subject under treatment, which take 8 of the 253 pages of the book, the author discusses "River Crossings." in four chapters—I. Bridge construction outside of the effective zone of strong hostile forces (pp. 8–19); II. Accelerated crossings in the immediate presence of the enemy (pp. 20–29); III. Forced crossings (pp. 30–35); IV. Surprise crossings (pp. 37–99).

The second part of the book treats of "Defense Against a Hostile Crossing." Following a general consideration of the "Kinds of river defense" (pp. 101–106), he discusses this subject in three chapters—I. Postion of the main forces at the river (pp. 106–123, Cordon System); II. Defense of a river line with small detachments posted on the bank (pp. 124–140); III. Rear guard actions on river lines (pp. 143–148).

Examples in illustration of the principles stated are cited from the Napoleonic Wars, the Schleswig-Holstein War, 1864, the Franco-German War 1870–71, the Russo-Turkish War 1877–78, and the Russo-Japanese War 1904-06, and also from large scale maneuvers.

Fo lowing this and in elucidation of the principles enumerated in the chapters on "River Crossings" and "Defense Against a Hostile Crossing," the author presents two excellent tactical-techincal studies. These are based on General von Falkenhausen's study of the operations of the gigantic armies of the future (published under the title of "Flankenbewegung und Massenheer" 1911). While the operations described by von Falkenhausen, and the excellent conceptions upon which they are based, are reproduced in general terms only, Colonel Merten has followed the study closely, except as to unimportant details. The author of "Flankenbewegung und Massenheer"

draws his inspiration from the battle of Leuthen, "where his genius for generalship enabled Frederick the Great to lead his numerically inferior army to victory by vigorously striking the far superior enemy in flank and he believes that he can answer the query as to whether such an operation is possible for the massed armies of today, in the affirmative. General Falkenhausen contends that "if movements are skillfully initiated and carried out," it should be possible, "to lead the inferior force against a flank of an extensive hostile line and to roll it up before the bulk of the hostile forces could be put in march for the purpose of turning the scales." Both studies are highly instructive.

Appendix I treats very fully of "Expedients for Quickly Crossing Streams," by means of "Fording and Swimming," "Rafts," and "Hasty Bridges."

Appendix II gives information on "Bridge Trains of Various Armies and Their Capacity."

The volume is well illustrated, there being 105 figures and 4 maps.

It is particularly fortunate that so good and important a military treatise as this has found so able and accomplished a translator as Major Walter Krueger, Assistant Chief of Staff, 84th Division, National Army, who is already favorably known to army officers by his excellent translations of Volumes I and II of Balck's Tractics.

CHARLES W. MILLER,
Colonel of Infantry.

Unpopular History.*

The author has set forth in this book in a semi-humorous and wholly interesting way a number of the most important and least widely known details of our national history.

The events to which he calls attention are those which point most strongly to the danger of failing to prepare for war before that war's occurence and to the positively sure dis-

*"THE UNPOPULAR HISTORY OF THE UNITED STATES BY UNCLE SAM HIMSELF." By Harris Dickson. F. A. Stokes Company. New York, N. Y. Price 75 cents.

appointment that always follows dependence upon untrained troops when war at last arrives.

His statements are all based upon facts taken from the records as quoted by General Upton in his well known book—"The Military Policy of the United States," and it is to be hoped Mr. Dickson's book will have a wide circulation, as it cannot but arouse the interest of all who read it, in General Upton's work.

Mr. Dickson, like the author whom he so frequently quotes minces no words, conceals no unpleasant facts, but speaks straight from the point.

Solution of Problems.*

The author has not concerned himself so much with the discussion of concrete problems, as with the attempt to show the logical series of mental processes through which an officer's mind must work from the conditions of *any* problem, to his solution thereof.

Its value in establishing in the mind of one who studies it, a method of estimating the situation presented to him, with the certainty of overlooking no important point, should be great.

It has an especial value for young officers in this time when it is the fundamentals of the art of war, which it is so necessary that they grasp, for certainly clear and logically ordered thought is one of the greatest of fundamentals in the art of war as in any other art or science.

*"THE SOLUTION OF TACTICAL PROBLEMS." By J. Layland Needham, Lieutenant Colonel British Army. E. P. Dutton & Co. New York, N. Y. Price $2.00.

Field Sanitation.*

Colonel Ford has compiled in a small space a great deal of the information regarding the sanitary and hygenic expedients that have been developed by the experience of our own troops on the Border and in Mexico, and by that of the armies abroad in the present war.

The arrangement of the subject matter is such that the book is extremely easy to read and the book is profusely illustrated with diagrams, photographs, etc., and in many cases, the author gives bills of material necessary for constructing the apparatus for, disposing of waste, bathing facilities, and the housing of men.

All of this information so invaluable to officers now that such a great number of our officers are unfamiliar with the methods of caring for troops, Colonel Ford has put forth in this extremely practical and interesting hand-book.

Ballads of the Regiment.†

There has appeared in our midst an unique and entertaining book of verse, "Ballads of the Regiments," by Major Gerald E. Griffen. It depicts with vivid understanding, much humor and pathos all phases of the service, of the old army and the new. As Kipling saw the "Tommy" so does Major Griffen understand the "Sammy" and well might he be called, our Kipling.

*"FIELD SANITATION AND HYGIENE." By Colonel Joseph H. Ford, M. C., U. S. Army. P. Blakiston, Son & Co. Philadelphia, Pa. Price $1.25.

†"BALLADS OF THE REGIMENT." By Major Gerald E. Griffin, U. S. A. George U. Harvey Publishing Co. 109 Lafayette Street, New York City. Price $ .....

Leadership and Military Training *

When every fifth man in our military forces must be a leader, is it not strange there has never been a textbook on the subject? That there is one now, written by a man who has been ardently engaged in teaching its fundamental principles by precept and example in our largest training camps for officers, is good news for the men who wish to serve their country to the utmost of their ability, and for the country that must depend upon their work for its honor and safety.

This is the only military book that even pretends to tell you how to be a good officer or non-com.; how to handle men so that they will accept you as their leader; how to arouse in your command the enthusiasm, the persistency that will give the discipline and morale that are the one aim of military training. Even experienced regular army officers, who have never analyzed the psychology of their profession, have said: "It is the most helpful book I have ever read. I am a different officer since I studied it."

Designed for beginners and for civilians who wish to know what military service really is, it does not aim to take the place of Service Manuals, but rather to explain the spirit of the service, the inner meaning that renders all else of practical avail.

Particularly good are those parts on "Rules for Conduct," "Rules for Courtesy," "Rules for Health" and "Rules for Battle."

*"LEADERSHIP AND MILITARY TRAINING." By Lieut. Colonel Lincoln C. Andrews, U. S. A., now Brigadier General N. A. Author of "*Basic Course (or Cavalry,*" and "*Fundamentals of Military Service.*" J. B. Lippincot Co., Philadelphia and London. 1918. Price in limp leather $2.00, net; in limp cloth $1.00, net.

BOOK NOTICES.

"ARMY FRENCH. An introduction to Spoken French for Men in Military Service." By Ernest H. Wilkins and Algernon Coleman. The proceeds of the sales of this book will be devoted to work of the Y. M. C. A. and other army work. The University of Chicago Press, Chicago, Ill. An excellent work of 186 pages—4 in. by 6 in.—made for military men. Price 44 cents, postpaid.

"TACTICAL WALKS." By Lt. Col. William H. Waldron, U. S. Infantry. Published by George U. Harvey Publishing Co., Inc. 109 Lafayette Street, New York City. Price $1.50.

"FIELD ARTILLERYMAN'S GUIDE." Three-inch gun, 4.7 and 6-inch Howitzers. Prepared by the Officers of the 108th (2d Pa.) Field Artillery. Second Revised Edition. P. Blakiston's Son & Co. 1012 Walnut Street, Philadelphia. Price $1.75, net.

"SIMPLEST SPOKEN FRENCH." By W. F. Giese and Barry Cerf, of the French Department University of Wisconsin. 1918. Henry Holt & Company. New York City. Price 65 cents, net.

"MILITARY INSTRUCTOR'S MANUAL." By Captain James P. Cole, 59th Infantry, and Major Oliver Schoonmaker, 76th Division. Instructor and Assistant Instructor, respectively 3d Battalion, 17th Provisional Training Regiment, Plattsburg, N. Y. Published by Edwin N. Appleton, 1 Broadway, New York City. Price $2.00.

"TRAVELING UNDER ORDERS." A Guide-Book for Troops en Route to France." By Major William E. Dunn, Field Artillery, National Army. Harper & Brothers Publishers. New York and London.

"INFANTRY TRAINING." Notes and Suggestions. Subject Outlines. Training Schedules. By Dale F. McDonald, Captain of Infantry, United States Army. George Banta Publishing Company. Menasha, Wisconsin.

"RAPID TRAINING OF RECRUITS. A Practical Scheme." By M. V. Campbell, late Lieutenant U. S. Marines. Frederick A. Stokes, New York. Price $1.00.

"THE AMERICAN SOLDIER IN FRANCE." A military guide-book to the French language, army and nation. By George Nestler Tricoche, late artillery officer French Army. Author of "Stumbling Blocks of French," "Our Army in a Nutshell," etc. Second Edition. Park Place, Morristown, N. J. Price 50 cents.

"OUR ARMY IN A NUTSHELL." The Civilians' Military Handbook, including the new Regimental and Divisional Organization and all the changes which it is permissible to publish. By George Nestler Tricoche. Published by George U. Harvey Publishing Company, Inc. 109 Lafayette Street, New York City. Price 60 cents.

"ARMY AND NAVY UNIFORMS AND INSIGNIA." How to know Rank, Corps and Service in the Military and Naval Forces of the United States and Foreign Countries. By Colonel Dion Williams, United States Marine Corps. With eight illustrations in color and one hundred and seventeen in black and white. Frederick A. Stokes Company. New York City. 302 pages. Price $1.50, net.

"MILITARY AND NAVAL RECOGNITION BOOK." A Handbook on the Organization, Insignia of Rank and Customs of the Service of the World's Important Armies and Navies. Lieut. J. W. Bunkley, U. S. Navy. With 51 full-page plates—18 in colors. D. Van Nostrand Company. 25 Park Place. 1917. Price $1.00, postpaid.

"THE SOLDIERS' ENGLISH AND ITALIAN CONVERSATION BOOK." Containing hundreds of useful sentences and words, enabling the American soldier to converse with the Italian allies, with the correct pronunciation of each word. Translated and adapted by Ida Dickinson. From W. M. Gallichan's Soldiers English-French Conversation Book. J. B. Lippincott Company. Philadelphia and London. 1918.

"HAND-TO-HAND FIGHTING. A System of Personal Defense for the Soldier." By A. E. Marriott, Camp Physical Director Army Y. M. C. A., Camp Sevier, S. C. The MacMillan Company, New York. 1918. Price $1.00.

"SMALL ARMS IINSTRUCTOR'S MANUAL. An Intensive Course." Complied by the Small Arms Instruction Corps; Reginald H. Sayre, Captain Res. N. G., N. Y. Stowe Phelps, Ex-Captain N. G., N. Y. and Gerard P. Herrick, Ex-Ord. Sergt. N. G., N. Y., with an Introduction by Captain C. C. Griffith, C. A. C., U. S. A. E. P. Dutton & Company, New York. 1918. Price $0.60.

Editor's Table

JOHN C. KETCHESON.

On February 1, 1918, there died in the city of Leavenworth as firm a friend as the CAVALRY JOURNAL ever had. He was a printer and the head of the J. C. Ketcheson Printing Company, that had printed the CAVALRY JOURNAL for almost thirty-three years. He always took a lively interest in the U. S. Cavalry Association and its JOURNAL, and for a period of two years he did not receive a cent of pay for printing the JOURNAL, when it was hard up, financially, after the Spanish War. Of course he was ultimately paid for this, but such was his love for the Association that he carried on the JOURNAL when things looked very dark for it.

He was a veteran of the Civil War, having enlisted as a Private in 1861 and he served in all the grades to that of Sergeant Major which rank he held when he was mustered out on July 17, 1865. He belonged to the noted Eighth Illinois Cavalry, which regiment furnished so many officers to the Regular Army. He was promoted Sergeant Major to succeed Earl D. Thomas who was discharged to enable him to accept the appointment as a Cadet at the U. S. Military Academy, and who afterwards became Brigadier General in the Army. Incidentally the present Editor was in the same regiment and succeeded General Thomas a Cadet at West Point.

He was a modest, unassuming gentleman who had made a host of friends in the city of Leavenworth and State of Kansas, where he lived over fifty years. He was a particularly dear friend of the Present Editor of the JOURNAL.

JOHN C. KETCHESON.

BORN MARCH 4, 1838 DIED FEBRUARY 1, 1918

A PLAN FOR FURNISHING REMOUNTS FOR THE ARMY.

The following plan for obtaining remounts for the army is being tried out by the Agricultural Department.

In order to encourage the production of horses suitable for cavalry and light artillery uses, the United States Department of Agriculture, in co-operating with the War Department, have placed in selected localities good, sound stallions of proper type and offered more owners special inducements to make use of them. This plan, made possible by a provision of Congress in 1913, grew out of the difficulty the Government has had in securing a sufficient number of Army remounts. Light-horse stock has deteriorated, due to the curtailed demand as a result of the growing popularity of motor vehicles, and farmers had turned their attention to improving the heavier draft horse.

The plan consists primarily in placing stallions of merit, registered in the proper stud books and belonging to the Thoroughbred, American Saddle, Standardbred, and Morgan breeds in suitable localities in Vermont, New Hampshire, Virginia, West Virginia, Kentucky and Tennessee. Mare owners may breed to these stallions on the following terms: The owner of the mare agrees in writing at the time of breeding to give the Government an option on the resulting colt as a three-year old at a stated price, which so far has been $150. No service fee is charged unless the owner of the colt wishes to be released from the option, in which case it is $25.

This means that practically no money is invested in service fees. If the colt is purchased by the Government no fee is charged, nor is there any charge if the colt if offered to the Government and purchase refused because it does not qualify. The breeder does not have to pay a service fee on a colt which dies, which is deformed, or which is seriously injured. Only sound mares that approach either a cavalry or a light artillery type are used. Records taken June 30, 1917, show that 3,089

colts have been produced since this plan was put in operation at the beginning of the breeding season in 1913.

The brood mares are usually farm-work animals, which generally pay for their feed by doing farm work, and the colts are brought up to birth without cost. High-class stallions are available for the mare owners' use. Community breeding, which is of inestimable value, is encouraged. The object of the remount-breeding work is to select for and breed sound horses with quality, stamina, and endurance which conform to the army's needs, and such animals will also be useful for general farm work, especially in mountainous sections.

INSTRUCTION AND TRAINING OF CAVALRY.

PREPARED IN THE WAR PLANS DIVISION GENERAL STAFF, U. S. ARMY.

1. *Object of Training.*—To render perfect service on the field of battle is the final object for which the Army is created and maintained.

Readiness for active service, and especially for the particular kinds of active service in which the troops are most likely to be engaged, is the objective to be kept in view in all training and preparation. The activities of all concerned will consequently be directed to the attainment of that end.

To be prepared for such service the troops must not only be thoroughly instructed, but also must have a high morale, based on consciousness of ability to meet successfully all the demands of war. The value of an organization is to be judged by its all-around ability to take the field and to meet successfully every phase of war service.

2. *Responsibility for Training.*—The responsibility for the training of any command rests solely upon the commanding officer.

Under the direction of the commanding officer, responsibility for the training of all units devolves upon the commanders of those units.

3. *Patriotism* is of the first importance. An absolute and unqualified devotion to the welfare and success of our country is indispensable.

4. *Discipline* distinguishes thoroughly trained and instructed troops from an irresponsible, unwieldy, and disorderly aggregation of men. Its essential characteristics are respect for and implicit obedience to superior authority. Its vital importance must be thoroughly impressed upon all in the military service. Cheerful, earnest and loyal obedience must be promptly paid by all subordinates to lawful orders of superiors.

Modern war requires of all arms the highest degree of discipline obtainable. The failure of men to carry out their orders implicitly in an attack results in unnecessarily heavy losses, if not in absolute failure. Experience proves that only thoroughly disciplined troops can carry out a modern attack where every step must be taken in accordance with a carefully prepared schedule.

The first great step in fitting troops for service is to inculcate the spirit of discipline and this will require the following:

(*a*) Every officer must set a proper example for those below him in rank by promptly, cheerfully and loyally obeying orders and regulations, by a careful and exact performance of every duty, and by exacting the same of all subordinates.

(*b*) Strict attention to dress and military courtesies. If men are allowed to be untidy in dress and personal appearance, slipshod and careless about rendering courtesies, the military spirit is lost and the command remains undisciplined.

(*c*) Precision and snap in drill must be insisted upon. All movements are to be executed exactly as prescribed.

The precise movements of close-order drill are not for the purpose of teaching men how to get about on the battlefield. They will hardly be used there at all. One of the principal objects is to train the minds and bodies of soldiers to habits of precise, unhesitating obedience to the will of the leader, so that in the stress of battle they will obey without conscious

effort, mechanically, automatically, as the most natural line of action.

(*d*) Leaders must possess accurate knowledge of their work. Commands must be given correctly and there must be no hesitation. Leaders are required to treat all subordinates with courtesy, to correct reasonable mistakes without harshness, to give clear and reasonable explanations, and to show men how to do that which is desired. When men fail through persistent carelessness, inattention or willfulness, then recourse must be had to measures as drastic as are permitted.

(*e*) Esprit de corps, pride in the organization, is to be cultivated in all subdivisions even to the smallest. Competitive contests between smaller units is of great advantage.

5. *General Principles of Training.*—The efficiency of the squad depends on the thoroughness of the training of individual members of this unit.

The efficiency of every command depends on the efficiency of the units or teams composing it. As each team in a large command must be under the direct control of its immediate chief, it is evident that such chief should have all possible charge of the instruction of his team. From such a system there should result not only suitable instruction of the team, but also comradeship among the individual members, pride in the team as a unit, and that confidence and habit of command on the part of the leader, so necessary to efficient leadership.

Higher commanders supervise the instruction of the units of their commands. Unit commanders will be given great latitude in the choice of ways and means for training their units and will be held to corresponding responsibility for results attained. Higher commanders interpose to change the ways and means employed by their subordinate commanders only when convinced, after careful observation, that the necessity for interposition is such as to justify impairment of the initiative ordinarily left to subordinates.

Self-respect, self-reliance and resourcefulness are qualities that should be cultivated to the fullest extent.

The aggressive spirit must be inculcated and the soldier impressed with the idea that he is superior to the enemy.

The best instruction is that which is practical and which is taught through personal contact between the instructor and those under instruction.

The officer must know the duties of the men under his command in addition to his own specific duties.

Officers and non-commissioned officers of each grade should be competent to take up the duties of the next higher grade. Military efficiency cannot be attained without competent and instructed officers and non-commissioned officers.

All officers should be present at drills. Every mistake must be corrected and the men kept to their work.

Drill should be made interesting by varying the exercises as much as possible. This is necessary in order not to exhaust the soldier's attention by straining it too long on one subject. Comments should be made by the leaders throughout the drill, directed toward those elements whose performance is unusually good or bad. Full advantage should be taken of the beneficial effect of praise and commendation publicly extended to deserving individuals or units.

During the periods allotted to instruction of subordinate units, terrain exercises, tactical or staff walks or rides, war games and map problems furnish the special means whereby all higher commanders may be preparing themselves and their staffs for their appropriate duties.

It is important that our troops in the United States be ready for active service abroad as soon as possible. Untrained troops sent abroad have to be trained there before they can be used in battle. Untrained men are less than useless in action. As much of their training as is practicable should be done before sailing. This is important, but proficiency is the most important factor in training.

While this war has called into use new weapons and new methods, it has not obviated the use and necessity of the old. Most of the new methods, can be quickly taught to soldiers otherwise trained, and if training cannot be completed in the United States, the instruction which pertains to new weapons and new methods is the part which will be left to be given abroad.

6. *Schools for Officers and Non-commissioned Officers.*—To be effective in time of war, military training must be uniform. To insure uniform instruction throughout the command, officers' schools shall be conducted under the supervision of the regimental commander, and non-commissioned officers' schools shall be conducted by the troop commanders under the supervision of the squadron commander.

In these schools the work must be first on the Cavalry Drill Regulations. Hours of meeting of the different classes shall be so arranged as to permit officers and non-commissioned officers to be present at drills and other practical instruction. The tactical instruction of all officers will be under the direct personal supervision of the commanding officer. The course will be taken up at once and continued throughout the year.

7. *Bases of Training.*—Study, drill and practical application form the bases of training. By study, knowledge of principles and methods is acquired; by drill, skill in the mechanism of methods and in the performance of habitual duties is gained. It is by practical application that officers and men learn to adapt to actual cases the knowledge and skill they have acquired. Facility in so doing is of the utmost importance, since on service a great variety of practical problems present themselves, each of which must be solved on the basis of its own particular requirements Hence, as soon as proficiency in elementary methods is attained, the applicatory system will be employed, commencing with simple problems and gradually widening the scope so as to introduce the greatest possible variety of conditions. To this end all tactical exercises, whether theoretical or practical, whether with or without troops, will be based upon an assumed situation. In all exercises in the field a concrete case will be stated, calling for the actual employment of the organization concerned, and the organization is then employed to meet the requirements of this case. The strength and character of the opposition to be expected, the nature of the terrain, the obstacles to be overcome, being known or developed as the solution proceeds, the opportunity is afforded not only of applying appropriate general principles and tactical methods, but also of putting

to practical use many minor phases of instruction which had previously been the subject of drill-ground training. Thus, the service of security and information, signaling, field fortification, pioneer work, the passage of obstacles, may all be incidents of the operation involved, and being natural incidents the purpose of the previous drill and instruction becomes apparent, as well as the difficulties liable to arise under the varied conditions of service. The more nearly the conditions of service are simulated and the greater the variety of the incidents introduced, the more instructive will these exercises be.

Such exercises may be conducted at first as map problems or terrain exercises for the training of officers and selected enlisted men.

8. *Drill and Practical Instructions Preparatory to Field Training* embraces especially: Drill of the troop and all of the units thereof, mounted and dismounted; the preliminary training for fire action and firing exercises on a represented or actual terrain with targets represented to scale or actually designated, thus giving opportunity to train the personnel both in the mechanism of fire and in appropriate methods of directing, controlling, and adjusting fire; the rudiments of the service of security and information, including the preparation and transmission of orders and messages; map making and map reading for officers, non-commissioned officers, and selected privates; exercises in leaving the camp with a part or all of the command equipped for prolonged service in the field; swordsmanship, mounted and dismounted; visual signaling; gymnastics, athletics, and swimming, including swimming with arms and equipment under proper precautions as to safety; equitation, horse training, and packing; tent pitching; guard duty and ceremonies; first aid and the hygienic care of the person; care of equipment of all descriptions.

9. *Field Training* embraces especially: Range practice; field firing exercises with service ammunition; field fortifications, including the reconnaissance and selection of positions, and the actual construction of appropriate intrenchments; the service of security and information (Field Service Regula-

tions); marches and convoys; maintenance of communication between the elements of a command; the care of men and animals, including the preparation and service of food, shelter and the service of sanitation and supply; the passage of obstacles; night operations; map making; swimming of horses and men, to include swimming with arms and equipment under proper precautions as to safety; packing and exercises in the solution of transportation problems; the drafting of orders and messages as incidents of the above exercises; combat and field exercises, first of a simple nature but gradually becoming more and more comprehensive.

Combat and field exercises are intended for instruction in the proper handling of troops in campaign and on the battlefield. Only such mechanical precision of movement is required as is necessary to keep the troops from getting out of hand.

10. *Minor Tactics.*—Experience on the western front has proven the great importance of minor tactics which must receive very careful attention. While battles cover long fronts and are carried on by large bodies, locally there constantly arise minor combats, "strong points" must be captured or flanks must be covered by small units. Outpost work and patrolling are incessant. It must be expected that some day the trench line will be broken and then advance and rear guard work will be of great importance.

To teach minor tactics properly requires much careful work.

11. *Tactical Exercises.*—The problems for tactical exercises will be prepared in writing. Tactical orders will be given for all dispositions and movements required in the execution of such exercises.

Each tactical exercise held will be preceded by such explanatory instruction as may be considered necessary and will be followed by a critique to be conducted, if practicable on the ground on which the exercise took place.

The necessary umpires will be designated by the commader of the next higher unit; the squadron commander for troop problems, the regimental commander for squadron problems, etc.

The procedure at the critique will be substantially as follows:

(*a*) The commander of the unit concerned will state his problem, and briefly discuss the manner in which he executed it.

(*b*) Subordinate commanders will briefly discuss the part of their work pertinent to the problem.

(*c*) The junior umpire will make his criticism for the side concerned.

(*d*) This procedure will be repeated for the opposing forces if the problem is two-sided.

(*e*) The senior umpire wil then conduct his critique, pointing out only important errors and the lessons to be learned therefrom.

(*f*) The commander of the next higher unit concerned will then sum up. Throughout the procedure he will prevent acrimonious debate and lengthy discussion of irrelevant matters.

Suggested Tactical Exercises. For a troop. Advance guard (whole unit acting as advance guard); and attack and assault dismounted; defense of horses of regiment (represented) by guard over them; battle and combat reconnaissance; a march over an unfamiliar route, individuals questioned as to physical features observed along the route; patrolling, situations at various points to be communicated to patrols; attack of a convoy, troop wagons at appropraite distances to be used to represent the convoy; messenger service, troop forming relay posts in hostile territory for at least ten miles from main body; patrolling at night, keeping touch with enemy's outposts during night, one platoon under an officer to provide for the security of the enemy; an advance to a surprise attack, a squad under an officer to provide for the security of the enemy; patrolling, movement across country from point to point by means of compass bearings taken from map; trailing an enemy's patrol across country, one squad to represent the enemy's patrol.

For a squadron. Defense of a convoy on the march, troop wagons at appropriate distances to be used to represent the convoy; organization of a defensive position, together with the actual construction of trenches for one troop; to go into

camp and distribute contents of baggage wagons, construct latrines, break camp and repack wagons; outposts; an attack and assault dismounted; retreat; bivouac for night on battlefield; a defensive screen with assembly to meet and attack; a recontre engagement against cavalry; an attack against artillery in position; a rear guard action; destruction of bridge.

For a regiment. An advance and halt, pitch camp, individual cooking; reinforcing an outpost; a withdrawal from dismounted action; advance at night to a position in readiness for assault; a flank march; passage of a river crossing defended by infantry; an attack and assault dismounted; a pursuit; march of dispersed squadrons to a point of concentration; a mounted attack.

12. *Instruction, Mounted*, will include horsemanship; drill, individual instruction; drill, collective instruction of squad, platoon, troop, squadron and regiment; use of rifle and pistol, mounted; saber manual and exercises; marches and march discipline; service of security and information; equitation; horse training; cross country riding, both in line and in column, over country approximating shell hole terrain, jumping low hurdles and trenches; inspections, equipped for the field; exercises in leaving camp, equipped for the field; tactical exercises.

13. *Lectures and Instructions, Dismounted.*—Will include: Discipline and courtesy; articles of war and courts-matrial; customs of the service; guard duty; nomenclature, fitting, and use of horse and personal equipment; packing field and surplus kits; care of the horse, including, nomenclature, and general rules for watering, feeding, grooming, and shoeing; detection of minor ailments in animals and treatment; personal hygiene, camp sanitation and first aid; receiving and delivering verbal messages; tent pitching, pyramidal, wall, and shelter tents; signaling; individual cooking; packing (two men per platoon); gas defense; field service regulations; field fortications.

14. *Small Arms Firing.*—The cavalryman must be able to shoot with rifle and pistol and hit his target. His practice must be such as to make proper aiming and trigger squeeze a fixed habit, for only when such is the case will he do it properly under stress of battle. The utmost attention must

be given to this work by all. The higher commanders must see that their subordinates do this work properly. As soon as the men are advanced enough to receive a rifle or a pistol they should be taught its care, mechanism and how to aim. This must be followed by short daily position and aiming drills.

In these latter drills the greatest care must be taken to see that the men take careful aim at some target, and every time the trigger is squeezed, that the aim is the correct one. Much of this practice must be joined with training in rapid loading.

These drills are essential as being habit forming, and are of value only if properly done.

Training preliminary to Small Arms Firing will include: Nomenclature of the rifle and pistol; dismounting and assembling of rifle and pistol; care of rifle and pistol; deflection and elevation correction drills, and aiming off for wind; sight setting; sighting drills; position and aiming drills; exercises in loading from belt; exercises in rapid loading, aiming and firing; tests as prescribed in Special Course 'C; gallery practice; estimating distances.

15. *Personal Hygiene, Camp Sanitation, and First Aid.*—The importance of personal hygiene and camp sanitation in the maintenance of health in individuals and in armies must be taught thoroughly to every officer and enlisted man. This should be done by means of lectures by medical officers and by personal admonition and explanation by line officers and by personal administration and explanations by line officers when errors in hygiene or sanitation are discovered in their commands.

All lectures and explanations should be in simple language, easily understood by the soldier. Technical or scientific terms should be avoided. Personal hygiene should be taught in the following general manner: The soldier should be impressed with the facts that the general health of a man is largely dependent upon the care which he takes of himself and which is taken of his surroundings; that it is very difficult for those in authority to maintain the proper sanitary condition of his surroundings unless he himself does his share; that nearly all diseases are caused by germs which live in the earth, food, water, excretions from the human body, on one's skin

or clothing, or on various objects which one touches; that these germs to cause disease must first enter the body, and that this entrance can be largely prevented if proper hygiene and sanitation are observed; that even if disease germs do accidentally find entrance to the body, their injurious effects may be modified or prevented when one has a sound and vigorous body.

The common rules of personal hygiene, *e. g.*, cleanliness, moderation in eating and drinking, proper exercise, sufficient sleep, care of clothing, and regularity in bowel movements should be taught in detail, and the reasons why they all have a bearing on one's health explained.

In teaching the essentials of camp sanitation, stress should be laid on the habits and breeding places of flies, mosquitoes, lice and other disease-bearing insects; and the especial danger to health of urine and feces not properly disposed of. (See Paragraphs 565 to 581, inclusive. Field Service Pocket-book, and Special Regulations, No. 28).

Instruction in the care of the foot and its coverings will be as prescribed in General Orders No. 133, War Department, October 11, 1917, and pamphlet published by the Medical Department, entitled "Minor Foot Ailments—Shoe Fittings."

Every soldier must be trained in the fundamental principles of First Aid as indicated in Paragraphs 582 to 603 inclusive, Field Service Pocket-book.

16. *Physical Training.*—Every effort should be made to develop soldiers physically, the development being such that it will render them capable of the greatest endurance on the march and on the field of battle. The requisites for a trained cavalry soldier are suppleness, skill and rapidity of movement to enable him to respond quickly to the perceptions of the senses and execute promptly the commands of his officers. He must also be endowed with great resistance to avoid fatigue and disease. For the work that will be required of the men at the front, physical strength and endurance are absolutely essential. The average man, before being trained, is unfit for the work. Physical training is more necessary than in previous wars. This result is best accomplished by a systematic and regular training of the muscles. The soldier must first be put through a series of setting-up exercises, these

to be followed by more strenuous work gradually increased, which will include marching and exercising in marching; double timing and exercises in double timing; running, vaulting and overcoming obstacles; jumping, high and broad; rope climbing; wall scaling; digging; swimming; gymnastic contests. All sports in which the combative element enters such as boxing, wrestling and foot-ball, should be strongly encouraged. The ordinary life of the soldier furnishes a certain amount of exercise but this does not accomplish the physical development that can be brought about by daily systematic exercises. Great care must be taken that physical training progresses gradually and that the soldier is not overtaxed. Too rapid progress at the beginning of his training is liable to result in permanent injury. The instructor must endeavor by every means in his power to arouse keen interest in physical training and conduct the instruction in a way which will keep the men cheerful, enthusiastic and alert.

17. *Signals.*—All cavalrymen must know the arm, whistle and battlefield signals.

All officers and non-commissioned officers must know the International Morse and semaphore code and be able to send and receive short messages under battle conditions by flag, and such other devices as are furnished for the purpose.

Ten per cent. of the enlisted men of each organization must be able to qualify in signaling as required in Paragraph 1,562, Army Regulations.

18. *Administration.*—Routine administration shall be regulated on the basis that training and preparation for active service are of first importance. Administrative duties are an essential feature of military life and are not to be neglected, but in every legitimate way they must be simplified, reduced in amount, and adjusted as to time of performance. Commanders of all grades must so order and arrange the affairs of their organizations that the foregoing general principles are given full force and effect. The number of officers and men regularly present at instruction must be the maximum consistent with the due performance of administrative or other duties unavoidably arising during the times allotted to instruction.

19. *Programs and Schedules.*—There must be definite and progressive programs and schedules of instruction. Every course of instruction should embrace certain prescribed subjects and be for a definite period in order to unify instruction, prevent unnecessary repetition, and use the available time to the best advantage.

Each commander, commencing with the troop commander, shall prepare a program based upon this plan of training, showing in general terms the contemplated scheme of work for the periods allotted for the training of his command. The purpose is to require the commander to formulate and to keep in mind a progressive plan of instruction, adapted to the particular conditions under which he is serving and framed so as (*a*) to include all the phases of training; (*b*) to give each phase its due importance, and (*c*) to combine them all in a well balanced scheme tending always toward real preparedness for field service.

The program of each unit commander is submitted to the next higher commander for approval.

A detailed schedule of training of each unit for each week will be prepared and submitted for approval to the commander of the next higher unit by noon of the Saturday of the preceding week. The schedule shall include the necessary references to the paragraphs of publications which are to be studied in preparation for the training prescribed.

Schedules shall be prepared personally by the officer responsible for the training. Such assistance as he may need, in the performance of this duty, he will obtain only from an officer designated to supervise the training. The schedules will, for the purpose of revision, be gone over in detail with the officer by whom prepared, by the officer to whom submitted, as soon as practicable after their receipt by the latter. Schedules will be prepared so as to show the training for a series of days, such as 1st, 2d, 3d, etc. Each schedule shall contain a statement as to whether or not the schedule of the previous week was complied with. A schedule of training, for use when the weather is too inclement to permit out-of-doors instruction, will be prepared to replace the normal schedule when necessary. Advantage will be taken of this schedule to provide for training that is not necessarily held out-of-doors. The regimental commander will determine when this schedule will be followed.

It is not possible properly to conduct a drill or exercise without special forethought and preparation for that particular drill or exercise. Timely notice of the nature of each drill or exercise whould be given in order that leaders may have time to prepare themselves.

The officer who prepares it will mail a copy of every approved program and schedule direct to the Director, War Plans Division, General Staff, Army War College, Washington, D. C., without letter of transmittal.

20. *Standards and Tests.*—Instruction in any subject must continue until not only the instructor but also the student is confident of its mastery by the latter. For all classes of training, standards should be fixed, individuals and units being tested for the purpose of ascertaining whether or not they have attained the desired standard, and results of such tests recorded. Tests for individuals and platoons will be prepared by the troop commander, and after approval by the squadron commander, the tests will be conducted by the troop commander under the supervision of the squadron commander. Tests of troops will be prepared and conducted by the squadron commander. The tests for the headquarters, supply and machine-gun troops will be prepared and conducted by officers to be designated by the regimental commander. Tests of squadrons will be prepared and conducted by the regimental commander. When an individual or a unit does not exhibit proficiency in the tests on any subject, additional instruction on that subject will be given to such individual or unit, without retarding the progress of individuals or units that have satisfactorily passed the test.

21. *Allottment of Time.*—At least 37 hours per week, exclusive of officers' and non-commissioned officers' schools, shall be devoted to training and instruction. This includes one hour for stables on Sunday.

It is contemplated that there shall be 2½ hours per day for five days of the week devoted to mounted instruction, with 2½ hours on Saturday for inspections and tests; that

there shall be six periods per week of ½ hour each for cleaning and care of arms and equipment; that there shall be seven periods per week of 1 hour each for stables and care of horses. Care of equipment will follow immediately after mounted instruction, this to be followed by stables. The foregoing covers the instruction in the morning.

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